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THE

CYCLOPÆDIA;

OR,

Universal Dictionary

OF

ARTS, SCIENCES, AND LITERATURE.

VOL. XVIII.

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THE

CYCLOPÆDIA;

OR,

UNIVERSAL DICTIONARY

OF

Arts, Sciences, and Literature.

BY

ABRAHAM REES, D.D. F.R.S. F.L.S. *S. Amer. Soc.*

WITH THE ASSISTANCE OF

EMINENT PROFESSIONAL GENTLEMEN.

COLLEGE OF PHYSICIANS

ILLUSTRATED WITH NUMEROUS ENGRAVINGS,

BY THE MOST DISTINGUISHED ARTISTS.

IN THIRTY-NINE VOLUMES.

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CYCLOPÆDIA:

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UNIVERSAL DICTIONARY

OF

ARTS and SCIENCES.

HIBISCUS.

HIBISCUS, in *Botany*, ιβισκος, a Greek name, of unknown derivation, for the αλθαια of Theophraſtus, ſuppoſed to be the Marſh Mallow, or ſomething very near it; hence the word was choſen by Linnæus to deſignate a genus of that family, which had hitherto received only barbarous or ill-conſtructed appellations.—Linn. Gen. 356. Schreb. 468. Willd. Sp. Pl. v. 3. 806. Mart. Mill. Dict. v. 2. Ait. Hort. Kew. v. 2. 454. Cavan. Diſc. faſc. 3. 143. Juſſ. 273. Lamarck. Illuſtr. t. 584. Gærtn. 134 (Ketmia; Tourn. t. 26.)—Claſs and order, *Monadelphia Polyandria*. Nat. Ord. *Columniferæ*, Linn. *Malvaceæ*, Juſſ.

Gen. Ch. *Cal.* Perianth double; the outer permanent, of many linear, ſometimes ſpatulate, leaves, rarely united into one at their baſe; inner of one leaf, cup-ſhaped, either five-cleft half way down and permanent, or with five teeth only and deciduous. *Cor.* Petals five, roundiſh-oblong, narroweſt at the baſe, ſpreading, attached below to the tube of the ſtamens. *Stam.* Filaments numerous, connected in their lower part into a tube, in whoſe upper part, both at its ſummit and ſides, they become ſeparate and lax; anthers kidney-ſhaped. *Piſt.* Germen ſuperior, roundiſh; ſtyle thread-ſhaped, longer than the ſtamens, five-cleft in its upper part; ſtigmas five, capitate. *Peric.* Capſule of five cells and five valves; the partitions double, contrary to the valves. *Seeds* one or more in each cell, kidney-ſhaped inclining to ovate.

Eſſ. Ch. Calyx double; the outer of many leaves or ſegments. Stigmas five. Capſule of five cells, with ſeveral ſeeds.

The ſpecies conſtituting the genus *Hibiſcus* are a numerous tribe of the largeſt and fineſt plants of the malvaceous order. They are 36 in Syſt. Veg. ed. 14th, 66 in Willdenow; yet of the former *H. præmorſus*, *ſpinifex*, *cancellatus*, and *zeylanicus*, are removed to the new genus *Pavonia*, and *H. Malvaviſcus* to the *Achania* of Banks and Solander, well marked by its convoluted corolla, ten ſtigmas, and pulpy fruit; ſee ACHANIA.—Scarcely any of them are natives of Europe. They generally grow between the tropics, yet ſome are found in North America, and ſome have been brought from the Cape of Good Hope. Though ſo numerous, they are not capable of being diſtributed into any well-defined ſections or ſubdiviſions.—The ſtem is generally ſhrubby or arboreous; rarely herbaceous with an annual root, and ſtill more rarely ſo with a perennial one. Leaves alternate, ſtalked, ſimple, more or leſs lobed, with a pair of narrow ſtipulas at the baſe of the footſtalk. Pubeſcence generally ſoft and ſtellated, ſometimes briſtly and ſimple, ſometimes wanting; in *H. populneus* ſcaly, but this was, with great reaſon, thought a diſtinct genus by Dr. Solander. Flower-ſtalks axillary or terminal, all ſimple and ſingle-flowered. Corolla uſually large, red, purpliſh, or yellow with more or leſs of a purple ſpot, for the moſt part very ornamental; ſometimes variable according to the age of the flower. The fibres of the ſtem are tenacious like hemp, and the juices of the whole plant very mucilaginous, ſometimes accompanied by an unpleaſantly ſcented ſecretion. We do not recollect any fragrance in the bloſſoms, at leaſt of thoſe few which it has fallen to our lot to examine alive in the gardens or ſtoves of Europe.—The following are among the ſpecies moſt worthy of notice.

H. *paluſtris.* Linn. Sp. Pl. 976. Curt. Mag. t. 882. Cavan. Diſſ. t. 65. f. 2.—Stem herbaceous, quite ſimple. Leaves ovate, partly three-lobed, downy beneath. Flower-ſtalks diſtinct from the foot-ſtalks.—Native of marſhes in North America; hardy in our gardens, but ſcarcely

Strahan and Preſton.

flowering without ſome artificial heat. The *root* is perennial. *Stems* annual, about two feet high, perfectly unbranched, leafy, round, and nearly ſmooth. *Leaves* three or four inches long, two or three broad, pointed, ovate, ſerrated, often with two ſmall lateral points or lobes; ſmooth above; finely hoary beneath. *Flowers* large, roſe-coloured, darker in the centre. *Stamens* and *piſtil* yellow. *Stigmas* very large and globoſe. The *flower-ſtalks* are truly axillary, not united for ſome diſtance to the footſtalk of the leaf, by which it is ſuppoſed to be diſtinguiſhed from *H. Moſcheutos*; but we think, with Dr. Sims in Curtis's Botanical Magazine, that theſe two ſpecies are hardly to be conſidered as more than varieties. The latter is repreſented in Cavan. Diſſ. t. 65. f. 1, whatever may be the *Alcea roſea peregrina*, *forte Roſa moſcheutos Plinii*, Cornut. Canad. 144. t. 145.

H. *tiliaceus*. Linn. Sp. Pl. 976. Cavan. Diſſ. t. 55. f. 1. (Pariti; Rheede Malab. v. 1. 53. t. 30. Novella; Rumph. Amb. v. 2. 218. t. 73.)—Leaves roundiſh-heart-ſhaped, undivided, pointed, crenate. Stem arboreous. Outer calyx in ten ſegments united half way up.—One of the moſt common trees in every part of the Eaſt Indies, thriving in all ſorts of ſituations and ſoils, and cultivated for the ſake of its ſhade, even more than the beauty of its flowers, in towns and villages, and by road ſides. The *foliage* reſembles that of the Carolina Lime, *Tilia pubeſcens*. The *flowers* expand in an evening, and are pale yellow, with a dark purpliſh ſtain in the bottom. A coarſe cordage is made of the bark; the wood is light and white, uſeful for ſmall cabinet work; the mucilage of the whole plant is applied to ſome medical purpoſes.

H. *Roſa-Sinenſis*. Linn. Sp. Pl. 977. Sm. Spicil. 7. t. 8. Curt. Mag. t. 158. Cavan. Diſſ. t. 69. f. 2.) Schem-pariti; Rheede Malab. v. 2. 25 t. 17, with a double flower, as is alſo Flos feſtalis; Rumph. Amb. v. 4. 24. t. 8.) – Leaves ovate, pointed, ſerrated, ſmooth. Stem arboreous.—The native country of this ſpecies is uncertain, but no plant is more generally cultivated in China and the Eaſt Indies for ornament, eſpecially the double-flowered kind, which is uſed on all occaſions to decorate the houſes, temples, &c., as roſes are in England. Their ſhape and brilliant red colour have acquired them the appellation of the China Roſe. The ſingle flower, with its long pendulous column of ſtamens, and vivid crimſon ſtigmas, is in our opinion much more elegant than the double, but is rarely ſeen in collections, though the latter is conſidered as almoſt eſſential to every hot-houſe. The *tree* is ſaid to be as large as a hazel. The *leaves* are of a fine green, and ſmooth. *Flowers* large, crimſon. They ſerve the Europeans in India for the ignoble purpoſe of blacking their ſhoes, being rubbed upon the leather, which, when it has received a ſufficient degree of colour, is poliſhed with the hand.

H. *mutabilis*. Linn. Sp. Pl. 977. Andr. Repoſ. t. 228. Cavan. Diſſ. t. 62. f. 1. (Roſa-Sinenſis; Ferrari Flor. 479. t. 485—499. Merian. Surin. 31. t. 31. Hina-pariti; Rheede Malab. v. 6. 69 t. 38—42)—Leaves heart-ſhaped, angular, five-lobed, pointed, toothed. Outer calyx of eight leaves. Capſule villoſe. Stem arboreous.—Native of China, Japan, and various parts of the Eaſt Indies, where, as well as in the Weſt Indies, it is much cultivated for the beauty of its flowers, moſt generally double, which are white at firſt opening in the morning, but become roſe-coloured before they fade at night. The *leaves* ſomewhat reſemble thoſe of the vine, and are roughiſh, variable in the length of their points. Ferrari and Rheede have illuſtrated this fine plant by an unuſual profuſion of plates in their ſeveral ſplendid works.

H. *ſyriacus*. Linn. Sp. Pl. 978. Curt. Mag. t. 83. Cavan. Diſſ t. 69. f. 1. (Alcea arboreſcens; Camer. Hort. t. 3, 4. Althæa arboreſcens; Ger. em. 933. A. frutex; Park. Parad. 369. t. 367. f. 5.)—Leaves ovate, ſomewhat wedge-ſhaped, three-lobed, cut, ſmooth. Outer calyx of about eight leaves, as long as the inner. Stem arboreſcent.—Native of Syria and Carniola; a hardy ſhrub in our gardens, where it is popularly known by the name of *Althæa frutex*. It is perhaps the laſt ſhrub that comes into leaf with us, and one of the lateſt in flowering. The *bloſſoms* are handſome, roſe-coloured with a crimſon eye, produced in abundance, and liable to variations in colour which render them ſtill more deſirable. They have no ſcent.

H *liliiflorus*. Cavan. Diſſ. t. 57. f. 1.—Leaves obovate, entire, bluntiſh, ribbed, ſmooth; occaſionally three-lobed. Outer calyx five-cleft, very ſhort. Stem arboreous.—Gathered on the woody mountains of the Iſle de Bourbon by Commerſon, who, thinking it a diſtinct genus, intended to call it *Cremontia*. The above characters mark it ſufficiently. The *flowers* are large, not much expanded, purpliſh, externally ſilky and whitiſh Few of the genus are more ſtriking either in their bloſſoms or foliage.—The French call it Fleur de St. Louis.

H. *ſpecioſus*. Ait. Hort. Kew. v. 2. 456. Curt. Mag. t. 360.—Leaves deeply palmate, ſmooth: their ſegments lanceolate, ſomewhat ſerrated. Stem, ſtalks, and calyx ſmooth.—Native of Carolina, nearly hardy with us, being perennial, with an annual herbaceous ſtem. The *flowers* are peculiarly ſhewy, being of a rich ſcarlet, and larger than moſt of their family.

H. *Abelmoſchus*. Linn. Sp. Pl. 980. Cavan. Diſſ. t. 62. f. 2. (Flos moſchatus; Merian. Sur. 42. t.42.)—Leaves with ſeven angles, ſerrated; ſomewhat peltate and heart-ſhaped at the baſe. Stem briſtly.—Native of the Eaſt and Weſt Indies, chiefly remarkable for the rich muſky taſte of its ſeeds, known by the name of *Bammia moſchata*, for which they are cultivated in the Eaſt. The plant is ſhrubby, very hiſpid. *Leaves* very deeply divided. *Flowers* large, yellow. *Capſule* two or three inches long.

H. *Trionum*. Linn. Sp. Pl. 981. Curt. Mag. t. 209.—Leaves in three very deep diviſions, cut, ſomewhat pinnatifid. Calyx inflated, membranous, hairy.—The beautiful Venetian Mallow, or Flower of an hour, is one of the few European ſpecies of *Hibiſcus*, and alſo one of the few that are annual. It is commonly cultivated for the elegance of the flowers, which are ſulphur-coloured, with five purple external ſtripes, and a violet eye, contraſted with the yellow anthers. The purple hairy ſtigmas too are remarkable, as well as the bladdery hiſpid inner calyx.

Hibiscus, in *Gardening*, contains plants of the ſhrubby and flowering-exotic ſorts, among which the ſpecies chiefly cultivated are, the Syrian ſhrubby hibiſcus, or althæa frutex (H. ſyriacus); the bladder hibiſcus, bladder ketmia, or flower of an hour (H. trionum); the China roſe hibiſcus (H. roſa ſinenſis); and the changeable roſe hibiſcus (H. mutabilis,) or Martinico roſe.

The firſt ſpecies has ſeveral varieties, as with pale purple flowers, having dark bottoms; with bright purple flowers, and black bottoms; with white flowers, and purple bottoms; with variegated flowers and dark bottoms, termed *painted lady althæa frutex*; with pale yellow flowers, and dark bottoms; and with variegated leaves, and double flowers.

And of the ſecond ſpecies there are varieties, with erect purpliſh ſtems, and larger flowers, with a deeper colour; and with large paler-coloured flowers.

The laſt ſpecies has alſo a variety with double flowers, from which the ſingle is often produced; but the ſeeds of the ſingle rarely afford plants that vary to the double ſort.

Method of Culture.—The firſt ſpecies is capable of being multiplied either by ſeeds, layers of the branches, or cuttings of the young ſhoots.

In raiſing them by ſeed, it ſhould be procured from abroad, and be ſown in the early ſpring ſeaſon, either in pots filled with light earth, or on a border in a warm expoſure; but the former is the better method. The pots muſt be plunged in a gentle hot-bed, in order to bring the young plants forward. Afterwards the plants ſhould be watered during the ſummer ſeaſon in a moderate degree, and be protected in the winter from the effects of froſt.

After the plants have had the growth of about two years they may be planted out in nurſery rows, or in the places where they are ultimately to grow.

Where the layer mode is employed, the branches ſhould be laid down into the ground in the autumnal ſeaſon, nicking the ſhoots on the back parts at one or two of the joints, and placing them well in the earth. They moſtly become pretty well rooted in the courſe of ten or twelve months, at which time they may be taken off, and placed out in their ſituations.

In uſing cuttings the young ſhoots ſhould be preferred, which ſhould be planted in pots of light earth early in the ſpring, plunging them in a mild hot-bed. They may alſo be planted in a ſhady border in the ſummer ſeaſon. As ſoon as the plants are become fully rooted, they ſhould be taken up with great care, and planted out where they are to grow, which may be done either during the autumn or in the ſpring.

The ſecond ſpecies may be increaſed by ſowing the well-ripened ſeeds in the autumn or ſpring, in patches of ſeveral ſeeds together, in the ſituations in which they are deſigned to grow and flower. As ſoon as the plants are come up, and have attained ſome growth, they ſhould be thinned out to two or three plants in each patch.

The laſt two ſpecies are alſo capable of being multiplied, by ſowing the ſeeds, when perfectly ripened, in the early ſpring in pots of rich light earth, plunging them directly in a moderate hot-bed, under glaſs frames, or, which is much better, in the bark-bed of the hot-houſe. As ſoon as the plants have made their appearance, and acquired ſome few inches in growth, they muſt be removed ſeparately into ſmall pots, giving them water freely, and then replunging them in the hot-bed, where they are to be preſerved.

In ſome caſes they are likewiſe capable of being raiſed by planting cuttings made from the young ſhoots in pots filled with the ſame ſort of mould, either in the ſpring or ſummer, affording them water immediately, and then placing them in the bark hot-bed. The after-management is the ſame as in the other ſorts.

The firſt two ſpecies, which are hardy, afford an excellent effect in the clumps and borders, in intermixture with other plants of the flowery ſort; while the laſt two, which are tender, diſplay conſiderable variety in collections of the ſtove and conſervatory kinds, by the beauty of their flowers.

HIBISI, in *Geography*, a town of Aſiatic Turkey, in Caramania; 80 miles W. of Satalia.

HIBRAHIM, or St. Mary, an iſland in the Indian ocean, near that of Madagaſcar; 50 miles long and 14 wide. S. lat. 16° 56′. E. long. 51° 56′.

HIBRETPOUR, a town of Hindooſtan, in Lahore; 27 miles N. of Firoſepour.

HICETAS, the Syracuſan, in *Biography*, an ancient philoſopher and aſtronomer, who flouriſhed at an unknown period. He was probably the firſt perſon who taught that the ſun and ſtars were fixed and permanent bodies, and that the earth had a rotatory motion. It is even ſaid that Copernicus derived from this philoſopher the firſt hint of his true ſyſtem of the univerſe.

HICHATAS, in *Geography*, a town of Weſt Florida, near the Apalachicola. N. lat. 31° 43′. W. long. 85°.

HICK, in *Nautical Affairs*, ſignifies the handle or lever of the rudder of a barge, called alſo the tiller.

HICKERY, in *Geography*, a town of America, in the ſtate of Pennſylvania, on the Alleghany; 20 miles N.E. of Fort Franklin.

HICKES, George, in *Biography*, was born at Newſham, in Yorkſhire, in the year 1642. He was educated at North-Allerton, from whence he was admitted a ſervitor at St. John's college, Oxford. Soon after the Reſtoration, he removed to Magdalen college, where he took the degree of B.A., 1662. He went to Lincoln college in 1664, was elected fellow, and in the following year commenced M.A. was admitted to holy orders, and undertook the office of a tutor to the college, the duties of which he diſcharged with great reputation till the year 1673, when he was obliged to ſeek for ſome change, in order to recruit his health, which had been injured by ſevere labour. He accompanied ſir George Wheeler in a tour on the continent, and at Paris he learnt that it was the intention of the court to revoke the edict of Nantz. In 1675 he returned to Oxford, obtained ſome preferment, and was ſoon after appointed domeſtic chaplain to the duke of Lauderdale, whom he attended to Scotland. Here he accepted the degree of doctor of divinity. From this period he received other preferments in the church, and among others, the deanery of Worceſter, and would probably have been made biſhop of Briſtol, but the death of the king, while the ſubject was in agitation, put an end to all his future hopes of eccleſiaſtical promotion. He had already diſcovered great zeal againſt the principles of popery, that he could expect no favour from James II.; nevertheleſs, he was ſo much of a churchman, and ſo ſteadily attached to the Stuart family, that he refuſed to take the oaths of allegiance to king William and queen Mary, was ſuſpended, and in 1690 was deprived of his benefices. Before he quitted poſſeſſion, however, upon ſeeing it announced in the Gazette that the deanery of Worceſter was granted to Mr. William Talbot, he drew up a claim of right to it, which, in 1691, he fixed up, in his own hand-writing, over the great entrance into the choir. This paper was called by the ſecretary of ſtate "Dr. Hickes's manifeſto againſt the government," and drew upon the author a proſecution from the officers of the crown. This he anticipated, and very wiſely quitted the country for concealment in the metropolis. Here and in its neighbourhood he remained unmoleſted till the year 1699, when the lord high chancellor Somers, out of regard for his great erudition, and as an encouragement to him in writing his dictionary of the old Northern languages, procured an act of council, by which the attorney-general was ordered to enter a *noli proſequi* to all proceedings againſt him. He died in 1715, in the ſeventy-fourth year of his age. His principal works were "Inſtitutiones Grammaticæ Anglo-Saxonicæ et Mæſo-Gothicæ," 4to; and "Antiquæ Literaturæ Septentrionalis, Libri duo", folio. This laſt is reckoned the author's maſter-piece, and is ſtill held in high eſtimation. He was author of three volumes of ſermons, and of a multitude of tracts in defence of himſelf, and the other non-jurors, and their principles, an account of which may be found in the Biographia Britannica. Dr. Hickes was unqueſtionably a man of great learning, and very converſant in the writings of the Chriſtian fathers, whom he regarded as the beſt expoſitors of the ſcriptures. Of his integrity he afforded abundant evidence, by the ſacrifices to which he ſubmitted, rather than ſuffer his conſcience to be violated, and his moral conduct is ſaid to have been unexceptionable and exemplary. Biog. Brit.

Hickes's *Bay*, in *Geography*, a bay on the N. E. coaſt of New Zealand, diſcovered by Capt. Cook in 1769, ſo called from Mr. Hickes, the lieutenant of the Endeavour ; 14 miles W.N.W. of Cape Runaway.

Hickes's *Keys*, a cluſter of iſlets and rocks, in the bay of Honduras, near the coaſt of Mexico. N. lat. 17° 10′. W. long. 88° 54′.

HICKFORD, in *Biography*, an Engliſh dancing-maſter, whoſe ſchool-room, in Brewer's-ſtreet, ſucceeded that in York-buildings for benefit concerts and muſical performances, during the early part of the laſt century.

In 1731, Geminiani Martini, the celebrated performer on the hautbois, and Arrigoni, the lutiniſt, had a weekly ſubſcription concert at Hickford's room ; where Carborelli, Dubourg, Clegg, and Veracini had likewiſe their benefits, as had all the ſecond-rate opera ſingers. About the year 1744, Hickford himſelf eſtabliſhed a weekly ſubſcription concert, of which Feſting was the leader, Vincent the hautbois, Wiedman the German flute, Miller the baſſoon, Ceperale the violoncello, and Fraſi, with ſome other Italians from the opera, the ſingers.

This concert continued in high favour till the deceaſe of Feſting and eſtabliſhment of Giardini in this country.

HICKMAN, in *Geography*, a ſettlement of America, in Fayette county, Kentucky, on the N. ſide of Kentucky river ; 10 miles N. of Danville.

HICKSFORD, a poſt-town of America, in Greenville county, Virginia ; 209 miles from Waſhington.

HICKUP, Hiccock, or *Hiccough*, in *Medicine*, terms which have probably originated from the peculiar ſound iſſued in the affection which they are uſed to denote, ſignify a rapid, convulſive, and ſonorous inſpiration, effected by the motion of the diaphragm, and generally connected with irritation of the ſtomach. It is the λυγμὸς or λύγγος of the Greeks, and the *ſingultus* of the Latins.

This troubleſome ſpaſmodic affection is too well known to require any minute deſcription here. Some have conſidered it as a diſorder of the ſtomach excluſively ; while others more correctly aſſert, that the action of the diaphragm is principally concerned in producing it. It is obvious, indeed, that the peculiar diſſyllabic ſound, produced during the ſpaſm, commonly ariſes from an affection of ſome of the organs of reſpiration, and this is not leſs obviouſly the diaphragm. This ſpaſmodic contraction of the diaphragm, however, is moſt excited in conſequence of ſome irritation within the ſtomach, and eſpecially about the upper orifice or cardia. Thus a large quantity of food, taken without drinking, or a ſmall portion of very dry food, ſuch as bread, will often bring on the hickup ; but it is ſpeedily appeaſed, in ſuch caſes, by a draught of any liquid. Diſtenſion of the ſtomach, by a very copious meal, or by food imperfectly maſticated, will alſo frequently induce a hickup ; which, of courſe, is eaſily prevented by an oppoſite courſe, temperance, and ſlow eating. Certain acrid ſubſtances, ſwallowed, or generated in the ſtomach, are apt to excite the convulſive action of the diaphragm, which conſtitutes hickup. Thus various ſpices, eſpecially when taken copiouſly, and other pungent matters, ſuch as garlic, &c. often produce it ; and the acids, and other irritating fluids, which reſult from imperfect digeſtion, and occaſion a ſenſe of heat and uneaſineſs about the cardia, or heart-burn, frequently alſo excite hickup.

On the other hand, hickup is often obſerved to ariſe from the oppoſite ſtate of the ſtomach to that of over-diſtenſion, namely, from inanition. It is not ſo eaſy to account for this variety of the diſorder, unleſs we ſuppoſe that the fluids, ſecreted within the ſtomach, become, during its empty ſtate, a ſource of irritation adequate to excite the ſympathetic action of the diaphragm. Hickup is alſo apt to occur, after great evacuations by purging and vomiting, as in cholera, and after hemorrhages. And it often accompanies inflammation, or other ſevere irritation, in the viſcera; eſpecially thoſe of the abdomen, in phrenitis, or inflammation of the brain, in apoplexy, in obſtructions of the bowels, &c. It is very common in almoſt all diſorders of the organs connected with digeſtion : thus it is generally one of the ſymptoms of a ſcirrhous ſtate of the liver ; and is ſometimes found in ſimple jaundice, in which the biliary ducts are obſtructed, although the liver itſelf is ſound. Sometimes it is one of the fore-runners of the epileptic paroxyſm. Heberden's Comment.

From ſome one or other of theſe cauſes, hickup will ſometimes continue to diſtreſs the patient, not only for ſeveral months, but even for ſome years, at times with great conſtancy, and at other times with conſiderable intermiſſions. In ſome inſtances, this troubleſome ſymptom has been known to haraſs a perſon during the ſpace of many months, without any other ſigns of ill health. (See Heberden, Comment. De Morbor. Hiſt. et. Curat. cap. 81.) The final cauſe of the hickup has been ſuppoſed to be the removal of any irritating ſubſtance from the lower part of the œſophagus, or from the upper orifice of the ſtomach to a leſs ſenſible part of that organ by the concuſſion of the whole.

The hickup, in its moſt ordinary form, where no particular diſeaſe is preſent, is a trifling affection ; but when it is a ſymptom of other diſeaſes, and eſpecially of acute or febrile diſeaſes, it is often itſelf a ſevere complaint, by the irritation which it produces, and very often indicative of danger, or of the approach of diſſolution. Hippocrates has founded ſeveral of his prognoſtic aphoriſms upon this ſymptom. In inflammation of the bowels (enteritis), in long continued colic, in ſtrangulated hernia, in ſtricture of the rectum, intus-ſuſceptio, or other impediment to proper evacuation of the canal, hickup enſues towards the cloſe of the diſeaſe, and, when accompanied by great fulneſs and tenſion of the abdomen, with debility of the pulſe, languor, and proſtration of ſtrength, is to be conſidered as a moſt unfavourable ſymptom. In all acute fevers it is an unpleaſant ſymptom, implying generally a morbid condition of the abdominal viſcera or of the brain, which it is to be apprehended will terminate unfavourably. The ſymptom, however, has ſometimes preceded a favourable change of the fever ; ſo that the older phyſicians have remarked, that an exception from its indication of danger ariſes, when appearances of an approaching criſis concur with it. Hippocrates obſerves that hickup is a bad ſymptom in old people after a ſevere purging. (Aphoriſm 41. ſect. 7.) It is unfavourable, indeed, after every ſevere evacuation of this ſort ; but more particularly in the aged, whoſe ſtrength is neceſſarily impaired. He remarks, too, that hickup is a bad ſymptom in inflammation of the liver (Aph. 58. ſect. 5—17. ſect. 7), and that a ſneezing, ſupervening during a hickup, removes it. Aph. 7. ſect. 6.

It is ſcarcely neceſſary to ſpeak of *the cure of hickup,* ſince it is either ſo ſlight an affection, in general, as to require no medical aſſiſtance, on the one hand; or a ſymptom of ſome other diſeaſe, to which our attention muſt be chiefly directed, on the other. In the former caſe, it uſually ceaſes ſpontaneouſly in a ſhort time, or is readily removed by a little warm fluid, as tea, coffee, and the like. When it ariſes from over-diſtenſion of the ſtomach by a too copious ſupply of food, or from the uſe of certain ſpices or other acrid ſubſtances, it will be in the patient's power to avoid any return of it in future from the ſame cauſes. When the hickup is more permanent and troubleſome, moderate doſes of the antiſpaſmodics will commonly relieve it; probably by blunting the ſenſibility of the nervous coat of the ſtomach, and invigorating its muſcular fibres. Thus a little opium or conium (cicuta of the old pharmacopœias), or a few drops of the tincture of opium and of ſulphuric ether, will frequently remove the paroxyſm at once. When the hickup appears to be connected with the generation of acid in the ſtomach, it may be alleviated by magneſia, chalk, and the alkaline waters, at the ſame time, a light and moderate diet, with occaſional laxatives, and aromatic bitters, may be uſed with a view to unload and ſtrengthen the ſtomach. This, like many other ſpaſmodic actions of muſcular parts, may be often removed by drawing the attention of the patient ſtrongly to any particular object, or by exciting any mental emotion; a fact, which popular obſervation has evinced. When the hickup is merely a ſymptom of ſome other diſeaſe, the treatment of it is a matter of very ſecondary importance; our efforts being of neceſſity directed chiefly to the removal of the primary diſeaſe, with the ceſſation or alleviation of which the hickup will of courſe ceaſe or be alleviated, according to the old maxim, "ſublatâ cauſâ tollitur effectus." The treatment of ſuch primary diſeaſes will of courſe be elſewhere detailed. See Sennertus, Med. Pract. lib. iii. part 2. ſect. 2. cap. 10. Hoffmann, Syſt. Med. Rat. Heberden, Comment. cap. 81. Sauvages, Noſol. Method.

HICKWALL, in *Ornithology,* the name of a ſmall ſpecies of wood-pecker, called by authors picus varius minor; a ſmall bird of not above an ounce weight, very beautifully variegated with black, white, and brown. The head in the female of this ſpecies has a white ſpot on the crown, and in the male a red one. It climbs trees like the common large wood-pecker, and like it feeds on worms and other inſects which it finds there. See Picus *Minor.*

HID *Iſland,* in *Geography,* an iſland of the N.W. territory of America, in Plein river, the northern head-water of the Illinois.

HIDAGE, or Hydage, an extraordinary tax, anciently payable to the king for every hide of land. See Hide.

"Sunt etiam quædam communes præſtationes, quæ ſervitia non dicuntur, nec de conſuetudine veniunt, niſi cum neceſſitas intervenerit, vel cum rex venerit; ſicut ſunt hidagia, coragia, & carvagia, & alia plura de neceſſitate, & ex conſenſu communi totius regni introducta, & quæ ad dominum non pertinent," &c. Bracton, lib. ii. cap. 6.

King Ethelred, in the year of Chriſt 994, upon the landing of the Danes, at Sandwich, taxed all his lands by hides. Every 310 hides of land, on this occaſion, found one ſhip furniſhed; and every eight hides found one jack and one ſaddle, for the defence of the realm. William the Conqueror took ſix ſhillings for every hide of land in England.

Hidage is alſo uſed for being quit of that tax; otherwiſe called *hide-gild.*

HIDALGO, *q. d. a ſon of birth,* in *Modern Hiſtory,* a title given in Spain to all who are of noble family.

HIDDE, in *Geography,* a town of Arabia; 10 miles E. of Jidda.

HIDDENSON, an iſland in the Baltic, near the W. coaſt of Uſedom, about ten miles long and two broad. N. lat. 54° 35′. E. long. 13° 10′.

HIDE, in *Commerce,* the ſkin of a beaſt; particularly that of a bullock, cow, or horſe. See Skin and Tanning.

We have hides of divers denominations, according to their ſtate, quality, &c.

Hide, *Curried,* is that which, after tanning, has paſſed through the currier's hands, and has thus received its laſt preparation, and is fitted for uſe. See Currying.

Hide, *Raw,* or *Green Hide,* is that which has not undergone any preparation; being in the ſame condition as when taken off the carcaſe.

Hide, *Salted,* is a green hide, ſeaſoned with ſea-ſalt and alum, or ſalt-petre, to prevent its ſpoiling and corrupting, either by keeping it too long in cellars, or in tranſporting it too far in a hot ſeaſon.

There are alſo hides dried in the air, ſent from America; particularly thoſe of buffalos.

Hide, *Tanned,* is a hide either green, ſalted, or dried, farther dreſſed and prepared by the tanner, by paring off the hair, and ſteeping it in pits of lime and tan. See Tanning.

Tanned hides are commonly carried along with the artillery of an army. They are uſed in the fire-workers ſtores, for covering powder or charged bombs from the rain or from ſparks of fire. They are alſo uſed on batteries, or in a laboratory.

Hide, or *Hyde, Hyda,* in our *Ancient Cuſtoms,* denoted a meaſure or quantity of land, containing ſo much as could be yearly tilled with a ſingle plough.

Beda calls the hide of land *familia,* and defines it to be ſo much as was ſufficient for the ordinary maintenance of one family. In other authors it is called *manſum, manſio, carucata,* &c.

Crompton, in his juriſdict. fol. 322, ſays, a hide of land contains one hundred acres, = 10 acremes = 10 ſquare furlongs = 4 virgates = 8 bovates or ox-gangs = 8 nooks = 200 obolata = 400 roods = 16,000 perches or poles = 1000 ſquare chains = 100,000 ſquare ſtaves = 10,000,000 ſquare links = 484,000 ſquare yards = 1,742,400 ſquare paces = 4,356,000 ſquare feet, &c.: he adds, that eight hides make a knight's fee. In ancient manuſcripts, the hide is fixed at 120 acres. But ſir Edward Coke notes, that a knight's fee, a hide or plough-land, a yard-land, and an ox-gang of land, do not contain any certain determinate number of acres. See Carrucate.

The diſtribution of England into hides of land is very ancient, there being mention made of it in the laws of king John, cap. 14. "Henricus I. maritand. filiæ ſuæ gratia imperatori, cepit ab unaquaque hida Anglia tres ſol." Spelman. See Subsidy.

Hide, in *Geography,* a river in America, which runs into the Miſſiſſippi, N. lat. 43° 24′. W. long. 92 2′.

Hide *and Gain,* in our *Old Writers,* ſignified arable land; to gain the land being as much as to till it.

Hide-*bound,* a diſorder of a horſe or other beaſt, wherein his ſkin ſticks ſo tight to his ribs and back, as not to be looſened from it with the hand.

The diſorder is ſometimes owing to poverty and bad keeping; at other times to over-riding or a ſurfeit, the horſe being ſuffered when he is hot to ſtand long in the wet; or to a morbid dryneſs of the blood, which, not having its natural courſe, cauſes the ſkin to ſhrink up and cleave to the bones.

Among *Huſbandmen*, trees alſo are ſaid to be hide-bound when the bark ſticks too cloſe.

HIDE-*bound Land*, in *Agriculture*, a term uſed in ſome diſtricts to denote tough, poor ſward land, which has moſtly been badly laid down to graſs.

HIDEL, in our *Ancient Statutes*, ſignifies a place of protection or ſanctuary.

HIDGILD, or HIDEGILD, in the laws of king Canute, is explained by *pretium redemptionis ſervi;* the price by which a ſervant was to redeem his ſkin from being whipped.

The word is formed from the Saxon *hide*, ſkin, and *gild*, payment. "Si liber feſtis diebus operetur perdat libertatem; ſi ſervus corium perdat vel hidgildum:" *i. e.* let him be whipped (which was the puniſhment for ſervants), or let him pay for his ſkin; by which payment he is to be excuſed from whipping.

HIDRA, in *Geography*, a town of Africa; 110 miles W.S.W. of Tunis.

HIDRO, a mountain of Naples; 15 miles W.S.W. of Otranto.

HIDROA, ἱδρωα, in *Medicine*, from ἱδρως, *ſweat*, ſignifies an eruption of miliary puſtles on the ſkin, occurring chiefly during the ſummer, in the ſouth of Europe. The complaint was entitled *ſudamina* and *papulæ ſudoris* by the Romans, *ſudor* ſignifying alſo *ſweat;* whence we may infer their opinion of its connection with the perſpiration, which the hot ſeaſon produced. It appears to be nearly the ſame diſeaſe as that which occurs in tropical climates during the hotteſt months, eſpecially to European ſettlers, and is denominated, from the ſenſation accompanying it, the *prickly heat.* See HEAT, *prickly.*

HIDROCRITICA, a term uſed to expreſs the judgments paſſed by phyſicians on their patients, on obſerving the ſweats that have attended the diſeaſe.

HIDRONOSOS, a name given, by ſome authors, to that terrible diſeaſe the ſudor Anglicanus, or ſweating ſickneſs.

HIDROPYRETOS, of ἱδρως, *ſweat*, and πυρετος, *fever*, *the ſweating fever*, a name given by ſome to the ſudor Anglicus, or ſweating ſickneſs.

HIDROTICS, or HYDROTICS, in *Medicine*, the ſame with ſudorifics.

The word is compoſed of the Greek ἱδρως, *ſweat.*

Contrayerva, zedoary, guaiacum, angelica, &c. are of the number of hidrotics, or hidrotic medicines.

HIELM, in *Geography*, a ſmall iſland of Denmark, in the Cattegat, near the coaſt of Jutland. N. lat. 56° 8'. E. long. 10° 49'.

HIELMAR, a lake of Sweden, in the province of Sudermanland, about 70 miles in circumference; 60 miles W. of Stockholm.

HIEMALIA, in *Antiquity*, the ſame with brumalia.

HIEN, in *Geography*, a town of China, of the third rank, in the province of Pe-tche-li, 12 miles S. of Ho-kien.

HIEN-YAN, a town of China, of the third rank, in Chan-ſi; 12 miles W.S.W. of Si-nghan.

HIEOU-KI, a town of China, of the third rank, in Fo-kien; 26 miles S. of Yen-ping.

HIEOU-NHING, a town of China, of the third rank, in Hou-quang; 40 miles S. of Ou-tchang.

HIERA, in *Ancient Geography*, one of the Cyclades, an iſland of the Archipelago, ſituated between Thera and Theraſia. This iſland, called the "Sacred iſland," was dedicated to the gods of hell, becauſe it had been ſeen to iſſue, all on fire, from the bottom of the ſea, as the effect of a volcano. Pliny ſays that this event took place 130 years after that which had ſeparated Thera from Theraſia. M. de Choiſeul affirms, according to father Hardouin, that there is a miſtake in the dates, and that it was not till 40 years after that the iſland of Hiera made its appearance. In the year 196, B. C., ſays Juſtin (l.xxx. c. 4.), there was ſeen to iſſue, after an earthquake, an iſland between Thera and Theraſia, which was called "Sacred," and which was dedicated to Pluto. Dion Caſſius mentions the ſudden appearance of a ſmall iſland near that of Thera, during the reign of Claudius. Syncellus mentions it in the 46th year after Chriſt, and places it between Thera and Theraſia. But it appears that, ſome time after, there aroſe another iſland called Thia, which diſappeared, or was united to the "Sacred" iſland. Mention is made of it in Pliny (l. iv. c. 12.), in Theophanes, and in Brietius (vol. ii. p. 236.) Nothing remarkable happened afterwards till 1427, when a great exploſion produced a rather great and very diſtinguiſhable increaſe to the iſland of Hiera, of which mention is made in ſome Latin verſes engraved on a marble at Scauro, near the church of the Jeſuits. In 1573 was formed, after a freſh exploſion of ſome continuance, the "Little Kammeni," ſuch as we ſee it at the preſent day. The iſland Hiera, called "Old Kammeni," to diſtinguiſh it from "New Kammeni" (ſee KAMMENI), is upwards of a mile in length, and appears to be nothing but a maſs, without regular ſtrata, of volcanic ſubſtances, and particularly of rocks of baſaltes. It is covered with a little earth, mixed with pumice-ſtones and volcanic aſhes, which have given riſe to the vegetation that has been there long eſtabliſhed. This iſland is deſert and uncultivated. In the ſummer only aſſes and mules are ſent thither to graze. On the part, ſuppoſed to have been added to it at a later period, there is not as yet any trace of vegetation, and this part remains leſs elevated than the reſt of the iſland. On Hiera are obſerved clefts ſomewhat conſiderable, which take the direction of its length, and extend almoſt from the one extremity to the other. Theſe have, without doubt, been occaſioned by the earthquakes which have very frequently occurred in theſe countries. Olivier's Travels in the Ottoman Empire.

HIERACHIOIDES, in *Botany*, a name given by Vaillant to a genus of plants, ſince called by Linnæus *Crepis;* which ſee.

HIERACITES, HIERACITÆ, in *Eccleſiaſtical Hiſtory*, a ſect of ancient heretics, at the cloſe of the third century, denominated, from their leader Hierax, a bookſeller of Leontium, and eminently diſtinguiſhed by his extenſive learning, and a venerable air and ſanctity of virtue.

He abſolutely denied the reſurrection of the body, maintaining, that the ſoul alone roſe again, and that the reſurrection was altogether ſpiritual. Epiphanius ſurmiſes that he might have imbibed this error from Origen.

The ſame Hierax, and his followers, likewiſe condemned the uſe of fleſh, wine, and marriage; being of opinion that they were only allowed under the Old Teſtament, and till the coming of Jeſus Chriſt; but that under the new law they were prohibited, as incompatible with the kingdom of God.

St. Epiphanius produces the paſſages of ſcripture whereon he founded this doctrine. He adds, that Hierax did not adopt Origen's opinion with regard to the Trinity, but allowed the Son to be really and truly begotten of the Father. He was alſo orthodox with reſpect to the Holy Ghoſt, excepting for ſome peculiarities received from the Melchiſedecians, on which he had refined, maintaining that Melchiſedec was the Holy Ghoſt. He alſo excluded from the kingdom of heaven children, who died before they had arrived to the uſe of reaſon. He lived a very auſtere life, and promoted the ſame among his followers; but, after his death, they degenerated very rapidly.

HIERACIUM, in *Botany*, from ἱέραξ, *a hawk*, becauſe hawks were ſuppoſed to ſharpen their ſight by the application of its juice to their eyes. The abſurdity of the idea proves the venerable antiquity of the name. Hawkweed.—Linn. Gen. 402. Schreb. 529. Willd. Sp. Pl. v. 3. 1559. Mart. Mill. Dict. v. 2. Sm. Fl. Brit. 827. Ait. Hort. Kew. v. 3. 121. Juſſ. 169. Tourn. t. 267. Lamarck. Illuſtr. t. 652. Gærtn. t. 158.—Claſs and order, *Syngeneſia Polygamia-æqualis.* Nat. Ord. *Compoſitæ ſemifloſculoſæ*, Linn. *Cichoraceæ*, Juſſ.

Gen. Ch. *Common Calyx* imbricated, ovate, of many linear, very unequal, longitudinal and incumbent ſcales. *Cor.* compound, imbricated, uniform; the florets hermaphrodite, numerous, equal, each of one petal, ligulate, linear, abrupt, with five teeth. *Stam.* Filaments five, capillary, very ſhort; anthers united into a cylindrical tube. *Piſt.* Germen nearly ovate; ſtyle thread-ſhaped, the length of the ſtamens; ſtigmas two, recurved. *Peric.* none, except the cloſed, ovate, permanent calyx. *Seeds* ſolitary, ſhort, obtuſely quadrangular; down capillary, ſeſſile. *Recept.* nearly naked.

Eſſ. Ch. Receptacle nearly naked, dotted. Calyx imbricated, ovate. Down ſimple, ſeſſile.

Obſ. This genus is far more comprehenſive in Tournefort than in Linnæus, embracing various ſpecies of *Crepis*, *Hypochæris*, *Picris*, &c. The *Hieracia* of Vaillant have all branched ſtems; that author ſeparating from them, by the name of *Piloſella*, ſuch as have ſimple radical flower-ſtalks.

Thirty-five ſpecies are defined in the 14th edition of the *Syſtema Vegetabilium*, 70 in Willdenow's *Species Plantarum*, though many of the former are now ſent away, by the laſt-mentioned author, to his *Apargia* and other genera. Some indeed are removed by him into this genus from *Leontodon* and *Crepis*, but its chief increaſe is derived from new diſcoveries in the mountainous parts of Europe.

The whole are commodiouſly and naturally divided into three ſections; 1ſt, ſtalks radical, ſingle-flowered; 2dly, ſtalks radical, many-flowered; 3dly, ſtem leafy.

They are almoſt, without exception, perennial herbaceous plants, *H. glutinoſum* only having an annual root, and *H. fruticoſum*, Willden. n. 69, a ſhrubby ſtem. Their herbage is commonly hairy or rough, eſpecially the calyx and top of the flower-ſtalks, which are in many inſtances clothed with denſe, black, partly glandular, prominent, ſoft hairs. The leaves are ſimple, now and then ſpotted, uſually entire in ſuch ſpecies as are but little or not at all cauleſcent, more or leſs deeply toothed, or even pinnatifid, in the reſt. Thoſe placed on the ſtem are alternate, ſeſſile, or frequently claſping that part by their arrow-ſhaped or heart-ſhaped baſe. The flowers are diurnal, of a full golden yellow, in a very few inſtances orange or lemon coloured, and in ſtill fewer pink or purpliſh. Though the ſeed-down is properly deſcribed as ſimple, it is very generally rough, often verging towards a feathery ſtructure.

Examples of the firſt ſection are,

H. alpinum. Linn. Sp. Pl. 1124. Fl. Lap. n. 283. Lightf. Scot. 434. t. 18. Engl. Bot. t. 1110. (H. villoſum alpinum, flore magno ſingulari, caule nudo; Dill. in Raii Syn. 169. t. 6. f. 2.) Leaves oblong, undivided, entire or notched. Stalk almoſt leafleſs, ſingle-flowered. Calyx hairy.—Found on all the higheſt mountains of Europe, in rocky places, flowering in July. It is remarkable for its large ſolitary *flower*, whoſe calyx is black, clothed with long denſe tawny hairs. The *leaves* vary much in the number and depth of their marginal inciſions.—Willdenow quotes for this Jacquin's Fl. Auſtr. t. 191, which he had properly cited at the ſpecies immediately preceding as *H. alpeſtre* of that author, very diſtinct from the *alpinum*, in its downy more ſlender calyx, regularly toothed leaves, and taller ſtem.

H. *Piloſella.* Linn. Sp. Pl. 1125. Curt. Lond. faſc. 4. t. 54. Engl. Bot. t. 1093. Bulliard. Fr. t. 279. (Piloſella repens; Ger. em. 638.)—Leaves elliptical, entire, downy beneath. Scions creeping. Stalk ſingle-flowered, leafleſs.—Very common throughout Europe in dry expoſed places, on gravelly banks, ſunny lawns, and the tops of park walls, where it bloſſoms from May to the end of July, expanding its bright ſulphur-coloured flowers, elegantly ſtriped at the back with crimſon, to the meridian ſun, "while the ſurrounding herbage, and even its own foliage, is withered and burnt up." The flowers cloſe early in the afternoon. The *leaves* are beſet with long rigid briſtles, and ſingularly white beneath. The plant ſpreads widely by means of its long trailing leafy runners; on the Alps they are ſhorter, and the flowers larger. There is alſo an alpine variety, whoſe leaves are white on both ſides.

Whether Willdenow has done right in referring the Linnæan *Leontodon bulboſum* hither, the only ſpecimen we have of that rare plant will not enable us to decide, but every character in its outward appearance ſhews that it ought not to be generically ſeparated from *L. tuberoſum*, which he reckons an *Apargia*.

In the ſecond ſection (ſtalks radical, many-flowered,) are H. *dubium.* Linn. Sp. Pl. 1125. Fl. Brit. 828. Tr. of Linn. Soc. v. 9. 226. (H. Auricula; Fl. Dan. t. 1111. H. n. 53. Hall. Helvet. v. 1. 22. Piloſella major prima; Tabern. Kreuterb. 507.)—Leaves elliptic-lanceolate, nearly entire, hairy. Scions creeping. Stalk with ſeveral flowers. Native of rather moiſt mountainous paſtures. Mr. Hudſon and Mr. Woodward are both mentioned as having gathered it in the north of England, and we have from the Cambridge garden roots, ſaid to be natives of Scotland. It differs from the laſt chiefly in having the *leaves* green on both ſides, and the *flowers* two, three, or four, on each ſtalk, of a ſulphur colour underneath as well as above. Some botaniſts have confounded the ſynonyms of the preſent with the following, on which ſubject copious illuſtrations may be ſeen in the Tranſactions of the Linnæan Soc. v. 9. 225.

H. *Auricula.* Linn. Sp. Pl. 1126. Fl. Brit. 829. (H. dubium; Fl. Dan. t. 1044. H. n. 52; Hall. Helvet. v. 1. 22.)—Leaves lanceolate, entire. Scions creeping. Stalk nearly leafleſs, many-flowered, umbellate.—On mountains in various parts of Europe, eſpecially in the moſt lofty ſituations about the Glaciers of Switzerland. Mr. Hudſon mentions gathering it on Dalehead, not far from Graſſmere, Weſtmoreland, though ſparingly. We never ſaw a Britiſh ſpecimen. What is ſhewn for it in the botanic gardens is a mere variety of the laſt. The preſent has fewer *runners*, perfectly lanceolate *leaves* not dilated into a round or obovate ſhape, except one or two of the loweſt, and ſmaller *flowers*, of a deeper, almoſt orange colour, with a far more hairy calyx.

H. *aurantiacum.* Linn. Sp. Pl. 1126. Jacq. Auſtr. t. 410. Don. Herb. Brit. faſc. 2 41. Sm. Engl. Bot. t. 1469. (H. hortenſe latifolium, ſive Piloſella major; Ger. em. 305.)—Leaves elliptical, entire. Stem nearly leafleſs, ſimple, hairy, bearing a corymbus of many flowers.—Found in mountainous woods in France, Italy, Switzerland, and Germany, but it was not known to be a native of Britain till Mr. G. Don diſcovered it in ſeveral woods in Banffſhire, and at Craigſton, near Turref, North Britain. In gardens it has long been known by the name of Grim the

Collie

Collier, and is diſtinguiſhed by the rich orange hue of its *corolla*, contraſted with the black hairy *calyx*. It blooms in July, and forms large tufts if planted in ſhady places.

H. *incarnatum.* Jacq. Ic. Rar. t. 578.—Leaves obovate-oblong, wavy and toothed, hairy. Stalk many-flowered, ſomewhat corymboſe, rough at the baſe, leafleſs. Calyx ſmooth.—Native of ſubalpine places in Carinthia and Carniola, very remarkable for its elegant pink *flowers* and deeper red anthers. The *leaves* are all radical, two or three inches long, light green, rough, with numerous ſhort rigid hairs. *Stalk* about a foot high, ſlender, naked, bearing a ſort of corymboſe panicle.

H. *Gmelini.* Linn. Sp. Pl. 1127. (H. foliis ex ſinuato dentatis, caulibus ſupra ramoſis ſubnudis, pedunculis hirſutis unifloris; Gmel. Sib. v. 2. 23. t. 8. f. 2.)—Leaves lyrato-runcinate, ſmooth. Stalk leafleſs, corymboſe.—Gathered in Siberia by Steller, and communicated by Gmelin to Linnæus. The moſt curious particular in the hiſtory of this plant is that a birch leaf, happening to ſtick to the bottom of the ſpecimen, cauſed Linnæus to define it "with radical leaves ovate, ſerrated, and ſmooth." This ſtrange error could not have been gueſſed without an inſpection of his herbarium. "*Quandoque bonus dormitat Homerus.*"

In the third ſection (with leafy ſtems,) are,

H. *paniculatum.* Linn. Sp. Pl. 1127.—Stem erect. Leaves numerous, elliptic-lanceolate, toothed, naked. Panicle capillary, divaricated.—Found by Kalm in Canada. We have it alſo, from the Rev. Dr. Muhlenberg, gathered near Lancaſter, in Pennſylvania. The *ſtem* is 12 or 18 inches high, terminating in a ſingularly delicate, ſmooth, wide-ſpreading panicle, of ſmall yellow flowers, not half the ſize of our common *Lapſana*.

H. *montanum.* Jacq. Auſtr. t. 190. Willd. n. 36. (H. n. 38; Hall. Helvet. v. 1. 16. H. latifolium montanum præaltum glabrum, endiviæ folio; Bocc. Muſ. v. 1. 148. t. 113. Hypochæris pontana, an error of the preſs for montana; Linn. Sp. Pl. 1140. Andryala pontana; Villars. Dauph. v. 3. 67. t. 23.)—Stem ſimple, leafy, ſingle-flowered. Leaves ſeſſile, obovato-lanceolate, with hooked teeth. This fine ſpecies grows on the alps of Auſtria, Savoy, Switzerland, and Dauphiny. The *root* is externally black, and runs deep into the ground. *Stem* from one to near three feet high, ſimple, ſolid, furrowed, roughiſh; leafy in the lower part; elongated and naked at the top, bearing one large handſome yellow *flower*, whoſe calyx is black, ſhaggy, and ſomewhat tawny. The *leaves* are about three inches long, acute, thin, veiny, ſmooth, edged with ſmall, unequal, more or leſs hooked, teeth. Linnæus in his own copy of Sp. Pl. has corrected the error of the preſs, which led his tranſcribers aſtray, but which any of them might eaſily have detected by turning to Boccone; yet Willdenow copies the ſynonym of the latter, retaining the error in queſtion, as well as another referring to vol. 2. inſtead of 1. We cannot too often inſiſt on the editors of any of the works of Linnæus turning to, and correcting, quotations. This at leaſt is in their power, and would be far more uſeful than many alterations, concerning which their judgment and experience may poſſibly be inferior to that of their author. In the latter part of this cenſure we aim not at our friend Willdenow, who, except ſome trifling or erroneous changes in ſpecific characters, and his univerſally copying from the original edition, like his predeceſſors, remarks, that theſe apply to an immediately preceding ſpecies, without altering ſuch reference, though he introduces ever ſo many new ones between the two, (witneſs his *Hieracium paludoſum*, n. 44.) has proved himſelf in many reſpects a highly meritorious editor.

Several more ſpecies of this ſection are found on the continent, and many of them in Britain. The latter, as far as hitherto determined, are *H. murorum*, Engl. Bot. t. 2082; *maculatum*, t. 2121; *ſylvaticum*, t. 2031; *Lawſoni*, t. 2083, which we are rather inclined to place here on account of its affinity to the reſt, though (like *murorum* indeed,) it has but one or two ſtem-leaves; *paludoſum*, t. 1094; widely different from *murorum*, notwithſtanding the ſuſpicion of Linnæus; the ſtem is hollow; whole plant intenſely bitter; *cerinthoides*, Linn. Sp. Pl. 1129, found in the Highlands, by Mr. G. Don; *molle*, Engl. Bot. t. 2210; *villoſum*, Jacq. Auſtr. t. 87; *ſabaudum*, Engl. Bot. t. 349; *denticulatum*, t. 2122; *prenanthoides*, t. 2235; and *umbellatum*, t. 1771. We have imperfect ſpecimens of ſeveral more, either varieties or ſpecies, from Scotland, but they require to be cultivated and obſerved in different ſtates, before they can be finally ſettled, this being one of the moſt difficult of European genera, in which it vies with *Saxifraga* and *Potentilla*. S.

Hieracium, in *Gardening*, contains plants of the herbaceous hardy, flowering perennial ſorts, of which the ſpecies moſt uſually cultivated are, the orange-flowered hawkweed (H. aurantiacum); and the gum-ſuccory hawkweed (H. chondriloides.) The former is frequently diſtinguiſhed by the name of golden mouſe-ear, and when of a dark colour by that of Grim the collier. And it varies in the colour of the flower from red to orange, as well as ſeveral ſhades of yellow.

Method of Culture.—Theſe different ſpecies of plants are capable of being increaſed by means of ſowing the well ripened ſeeds early in the ſpring upon a bed or border of freſh earth, which has an expoſure towards the eaſt. As ſoon as the plants have a few inches growth, they muſt be removed into other beds in order to ſtand until the autumn, when they ſhould be planted out where they are to remain. A better practice is, however, that of at firſt ſetting them where they are intended to continue.

They are alſo capable of being multiplied by means of ſlips from the roots, which ſhould be planted in the autumn or ſpring in the places where the plants are to remain. In each of theſe modes of increaſing them, they ſhould have pretty full ſupplies of water in dry ſeaſons.

When planted in ſuch ſoils as are neither too rich, nor too much filled with moiſture, the roots will continue for a great number of years.

Theſe plants give variety in the clumps, borders, and other parts of pleaſure grounds, in which they ſhould conſtantly be placed towards the fronts.

HIERACOME, in *Ancient Geography*, a town of Aſia, in Syria, ſituated to the eaſt of the gulf of Iſſicus, between two chains of mountains.

HIERACUM, a town of Upper Egypt, in the Thebaide, placed in Antonine's Itinerary between Iſiu and Peſla; 20 miles from the former and 28 from the latter.

HIERACURRA, in *Geography*, a town of Hindooſtan, in Golconda; 35 miles S.E. of Hydrabad.

HIERÆA, in *Ancient Geography*, a ſmall country of Libya.

HIERAMÆ, a town of Aſia, in Caria. Steph. Byz.

HIERA PICRA, in *Pharmacy*, originally a kind of electuary, firſt deſcribed by Galen, compoſed of aloes, cinnamon, aſarabacca, ſpica nardi, ſaffron, and maſtic, made up with honey, or ſyrup of violets and honey.

It is denominated from the Geek ἱερος, *ſacer*, *holy*, becauſe of its rare virtues; and πικρως, *amarus*, *bitter*; aloes, which is the baſe thereof, rendering it extremely bitter.

It was uſed to purge and cleanſe the ſtomach, remove obſtructions, promote the menſes and hæmorrhoids, and ſweeten the blood; but its chief uſe among us is in powder, for making the tinctura ſacra.

Beſides this *ſimple* hiera picra, there is a *compound* ſort, called *diacolocynthidos Pachii*, becauſe colocynthis is the baſe thereof; and it was firſt uſed, with good ſucceſs, by Pachius of Antioch, in divers obſtinate diſeaſes. It is compoſed of colocynth, opopanax, ariſtolochia rotunda, agaric, and other ingredients. It is uſed in epilepſies, apoplexies, palſies, and lethargies; and to excite the menſes, and promote the expulſion of the after-birth.

There is alſo a third ſort of hiera, called *liberans;* but rarely uſed. Dr. Quincy ſays, it is one of the moſt ridiculous medleys ever contrived. It paſſes for a cordial, &c.

Hiera picra, *Tincture of.* See Tinctura *Sacra.*

HIERAPOLIS, or Hieropolis, in *Ancient Geography*, a town of Phœnicia, in the Cyrrheſtic territory. Ptolemy.—Alſo, a town of Aſia, in Phrygia. Ptol. Steph. Byz. places it between Phrygia and Lydia, and ſays, that it had hot baths and ſeveral temples.—Alſo, a town of the iſland of Crete, which was epiſcopal.—Alſo, a town of Caria.—Alſo, an epiſcopal town of Arabia, under the metropolis of Babba, in the Moabitide territory.—Alſo, another epiſcopal town of Arabia, under the metropolis of Boſtra.—Alſo, a town of Aſia, in Syria, called "Bambyce" and now "Mambedj," S.S.W. of Zeugma, at an equal diſtance from a chain of mountains and the Euphrates, or two days' journey N.E. of Aleppo. The worſhip of the great Syrian goddeſs, called "Atergatis," was eſtabliſhed in this town; but no traces now remain of her temple. The only remarkable monument is a ſubterraneous canal, which conducts the water from the mountains of the N. for the diſtance of four leagues. The name of Hierapolis ſtill ſubſiſts in that of another village, called "Yerabolos," ſituated on the Euphrates.

HIERAPUMNAL, in *Geography*, a town of Meckley; 60 miles S. of Munnipour.

HIERAPYTNA, in *Ancient Geography*, a town of Crete, called alſo "Cyrrha," "Pytna," and "Camyros," and ſuppoſed to be the ſame place which Ptolemy calls "Hiera Petra," or the Sacred Rock. The ruins of this city are ſtill viſible on the coaſt over-againſt the rocks called by the ancients the "Iſles of Aſſes." Hierapytna was one of the ſtrongeſt places on the iſland, when Metellus undertook the conqueſt of Crete; but it is at preſent only a village known by the name of "Girapietra."

HIERARCHY, Hierarchia, in *Theology*, the order or ſubordination among the ſeveral choirs or ranks of angels. The word is Greek ἱεραρχια, formed of ἱερος, *ſacer*, *holy*, and αρχη, *principatus*, *rule; q. d.* ἱερα αρχη, *holy command*, or *rule in holy things*.

St. Dionyſius, and other of the ancient writers, eſtabliſh nine choirs or orders of celeſtial ſpirits; *viz.* ſeraphim, cherubim, thrones, dominions, principalities, powers, virtues, angels, and archangels: and theſe they divide into three hierarchies.

Hierarchy is alſo uſed for the ſubordination between prelates and other eccleſiaſtics. See Priest, &c.

Archbiſhops, biſhops, prieſts and deacons, compoſe the hierarchy of the church of England. In that of Rome, the pope has likewiſe a place at the head of the hierarchy.

F. Cellot, a Jeſuit of Paris, has publiſhed a volume expreſs (De Hierarchia & Hierarchis) on the hierarchy, and thoſe who compoſe it. He there diſtinguiſhes a created and an uncreated hierarchy; a divine and a human, or eccleſiaſtical hierarchy; and in this, a hierarchy of juriſdiction, a hierarchy of an order, and a hierarchy of graces, the moſt ſublime of all.

He defines hierarchy, in the general, a command or ſovereignty in holy things; "principatus, ſive imperium, in rebus ſacris;" on which footing he holds, that hierarchy excludes all below biſhops; and that neither prieſts nor deacons can be reckoned among the number of hierarchiſts. Bellarmin, Hallier, Aurelius, &c. he holds, were all miſtaken, and did not diſtinguiſh between being *of* the hierarchy, and being *under* it.

HIERASSON, in *Ancient Geography*, an epiſcopal town of Arabia, under the metropolis of Beryra.

HIERATIC Paper, among the *Ancients*, was the fineſt ſort of paper, which was ſet apart only for ſacred or religious uſes. See Paper.

HIERATIN, in *Ancient Geography*, a town ſituated on the coaſt of the gulf of Perſia, at the mouth of a river named Heratemis.

HIE'RES, in *Geography*, a town of France, in the department of the Var, and chief place of a canton, in the diſtrict of Toulon; nine miles E. of Toulon. This town was formerly a ſea-port, where pilgrims bound for the holy land were accuſtomed to embark; but it is now at a conſiderable diſtance from the ſea; ſituated on the ſide of a hill, in a delightful country, where is a perpetual ſpring, and ſurrounded by beautiful gardens, affording the beſt fruit in France; oranges, citrons, and pomegranates grow in the open air. Near the town are large ſalt-works, in which the ſalt is made partly from ſea-water and partly from a ſalt-lake near the town. The noxious effects of the exhalations from the ſalt-lake have been remedied by a canal cut from the lake to the ſea. The gulf of Hières, between the town and the iſland ſo called, is a famous road for veſſels, with good anchoring ground and ſufficient depth of water. The place contains 6528, and the canton 6528 inhabitants, on a territory of 205 kiliometres in one commune. N. lat. 43° 7'. E. long. 6° 12'.

Hie'res *Iſlands*, a cluſter of ſmall iſlands in the Mediterranean, near the coaſt of France, which take their name from the town of Hières. They are famous for a great variety of medicinal plants. N. lat. 43° 2'. E. long. 6° 10'.

HIERISOS, a town of European Turkey, in Macedonia, near the coaſt; 50 miles S.E. of Saloniki.

HIERKEN, a town of Norway, in the dioceſe of Drontheim; 40 miles S.E. of Romſdal.

HIERO, in *Biography*, king of Syracuſe, ſucceeded his brother Gelon in the year B.C. 478. Being of a jealous and tyrannical diſpoſition, his brother, who fell under his ſuſpicions, fled to the court of Theron, king of Agrigentum. A war between the two monarchs was the conſequence, which continued with various ſucceſs ſeveral years, till it was ended by a treaty advantageous to Hiero, who married the ſiſter of Theron, and then admitted his brother to favour. After a reign of no great length this prince fell into a lingering malady, the pains of which he endeavoured to divert by the converſation of poets and philoſophers, whom he had drawn to his court by liberal encouragement. He died about the year 467 B.C. Pindar addreſſed four of his odes to Hiero, who was a ſucceſsful competitor in the Olympic and Pythian games. Simonides was induced in his old age, to comply with an invitation of this prince; and it was his queſtion "What is God?" which produced the philoſopher's celebrated requeſt of time repeatedly doubled, for anſwering a query which ſeemed more difficult the more it was conſidered. Æſchylus, and other great men and poets, are mentioned as ornaments of his literary and ſocial circles. Univer. Hiſt. Bayle.

Hiero II. king of Syracuſe, was ſon of Hierocles, a deſcendant of Gelon. His mother was a female ſlave, and the father was ſo aſhamed of his offspring, that he is ſaid to have ordered him to be expoſed in the woods, where he was caſually nouriſhed with wild honey. His eſcape from the fangs of death was regarded as little ſhort of a miracle, and he was on that account brought home and very carefully educated. He ſoon became diſtinguiſhed among his companions, as well by his dexterity in all manly exerciſes, as by his readineſs in receiving inſtruction. As a warrior he ſerved in his youth under Pyrrhus king of Epirus, and at the age of twenty-five he was regarded as one of the ableſt commanders of his army. On the departure of Pyrrhus from Sicily, Syracuſe became a prey to the factious. Hiero, at the head of his men, entered the city with his colleague, and aſſumed the reins of government. To ſtrengthen his intereſt among the people he married the daughter of Leptines, a perſon of great authority, and committed the domeſtic management to his father-in-law, while he was abſent in the field. There were at this time large bodies of mercenaries in pay, whoſe inſolent and mutinous ſpirit was the ſource of conſtant diſturbances. Hiero freed himſelf from theſe by a ſtratagem which was more ſucceſsful than honourable. Leading the whole army againſt the Mamertines, a ferocious body of adventurers who had ſeized upon Meſſana, he formed two ſeparate diviſions of the mercenaries and Syracuſans, and ordered the former to attack the enemy, pretending that he meant to ſupport them with the latter. They entered on the conteſt with the utmoſt degree of valour, and were in the end almoſt entirely cut to pieces. When Hiero ſaw that he had nothing now to fear from his allies, he ſupplied their places with the Syracuſan military, who without difficulty gave the Mamertines a ſignal defeat, and made himſelf maſter of the ſurrounding country. On account of this ſucceſs he was unanimouſly raiſed to the throne of Syracuſe about the year 265 B. C. In a ſhort time he offered terms of peace and alliance with the Romans, which were readily accepted; and he ever after continued the ſteadieſt of all the foreign friends of the republic, and as a reward of his conſtancy he enjoyed a long and proſperous reign of almoſt uninterrupted tranquillity. His mild and equitable rule extinguiſhed party animoſities among his people, while his attention to the intereſts of agriculture enabled him to patronize all the arts by which a nation is made flouriſhing. He undertook, and with the aid of Archimedes accompliſhed, ſome public works of great magnificence. He encouraged commerce, and fitted out numerous fleets of trading veſſels to convey the ſuperfluous harveſts of Sicily to other countries, and, it is ſaid, that the commercial ſpirit of Hiero was fully allied to the liberality of princely opulence. He relieved the Rhodians, after a moſt diſaſtrous earthquake, with a hundred talents in money, and many other valuable donations. After the fatal battle of Thraſymenus, in the ſecond Punic war, he ſent a fleet laden with proviſions to the port of Oſtia, and directed his ambaſſadors, after condolences expreſſed in the moſt pathetic terms, to offer to the republic theſe and whatever other ſupplies it might ſtand in need of; and alſo for the ſake of the Augury to accept of a ſtatue of Victory of pure gold, weighing three hundred pounds. The ſenate was highly gratified with this mark of attachment at ſuch a period, and decreed that the Victory ſhould be placed in the temple of the Capitoline Jupiter. Hiero, notwithſtanding his zeal for the cauſe of the republic, was mortified by the conduct of his ſon Gelon, who openly declared for the Carthaginians, and by his influence would probably have obliged his aged father to a paſſive acquieſcence in his meaſures, had he not been carried off by a ſudden illneſs. Hiero died about the year 215 B. C., in the 90th year of his age, and the 54th of his reign. He was univerſally regretted, and all the inhabitants of Sicily ſhowed by their lamentations, that they had loſt a common father and an affectionate friend. He was a liberal patron of literature, and wrote a book on agriculture.

Hiero. See Ferro.

Hiero's *Crown*, in *Hydroſtatics*. The hiſtory of this crown and of the important hydroſtatical propoſition, to the diſcovery of which it gave occaſion, is as follows: Hiero, king of Syracuſe, having furniſhed a workman with a quantity of gold for making a crown, ſuſpected that he had been cheated, and that the workman had uſed a greater alloy of ſilver than was neceſſary in the manufacture of it; he, therefore, applied to Archimedes for a diſcovery of the fraud. This celebrated mathematician was led by chance to a method of detecting the impoſture, and of determining preciſely the quantities of gold and ſilver of which the crown was compoſed; for he obſerved, whilſt he was bathing in a tub of cold water, that as he immerged his body in it, the water ran out; and he immediately concluded, that the water which ran out, when his whole body was immerged, was equal in bulk to his body. It is ſaid, that he was ſo pleaſed with the diſcovery, as to run about naked crying out, ἕυρηκα, ἕυρηκα, *I have found it*; and others affirm, that he offered a hecatomb to Jupiter for having inſpired him with the thought.

On this principle he procured a ball of gold and another of ſilver, exactly of the weight of the crown, conſidering, that if the crown were altogether of gold, the ball of gold would be of the ſame bulk as the crown, and when immerſed in water, would raiſe the water juſt as high as the crown immerſed; but if it were wholly of ſilver, the ball of ſilver, being immerſed, would raiſe the water no higher than the crown immerſed; and if the crown was of gold and ſilver mixed in a certain proportion, this proportion would be diſcovered by the height to which the crown would raiſe the water higher than the gold and lower than the ſilver. Accordingly, let A M L B (*Plate* VIII. *Hydraulics*, *fig.* 3.) be a veſſel filled with water to the height D C, and let the maſs of gold, equal in weight to the crown, on being immerſed into the water raiſe the ſurface of it to E, and the maſs of ſilver raiſe it to G; then if the height of the veſſel above D C be divided into equal parts, and $DF = 11$, and $DG = 19$, it is plain the bulks of gold and ſilver will be as D F to D G, and the ſpecific gravities in the inverſe proportion of theſe quantities, or as D G to D F. If the crown be immerſed, it will raiſe the ſurface of water to E; whence the proportion of the bulks of the gold and ſilver in the crown may be determined. For ſince the difference of the ſpecific gravities of the gold and ſilver is $DG = DF = FG = 8$, if the bulk of the crown is divided into eight equal parts, it is evident, that ſince the ſpecific gravities of the debaſed and pure gold crowns will be as the bulks inverſely, that is, as D F to D E, we can eaſily find the point H, which will expreſs the ſpecific gravities of the former; for $DE : DF :: DG : DH$. This point H always divides the difference F G into two parts G H, H E, which have the ſame proportion as the parts of ſilver in the crown to the parts of gold; for as the point E aſcends, the point H deſcends, and when E coincides with G, H falls upon E, and the crown becomes wholly ſilver; on the contrary, when E deſcends to F, and H aſcends to G, the crown becomes wholly gold; therefore, F H will be every where to H G as the parts of gold to the parts of ſilver in the crown. Conſequently, in the preſent caſe, becauſe the crown, when immerſed, raiſes the water to the height D E, and H is three diviſions below G, it ſhews that three of the eight parts of the crown are ſilver, and the other five parts gold, as H is five of the diviſions above F. Hence, the bulk of the gold in the crown is to that of the ſilver as 5 to 3. In ſome ſuch method as this Archimedes deduced his propoſition, *viz.* that the difference of the ſpecific gravities of the compound and lighter ingredient, *i. e.* 5, (ſuppoſing the ſpecific gravity of gold to ſilver as 19 to 11, and the ſpecific gravity of the king's crown to be 16,) is to the difference of the ſpecific gravities of the heavier ingredient and the compound, *i. e.* 3, as the bulk of gold to that of ſilver made uſe of: ſo that if the whole crown were divided into eight parts, the gold would conſiſt of five, and the ſilver of three; and the magnitudes 5 and 3, multiplied by the ſpecific gravities 19 and 11 reſpectively, will give the numbers 95 and 33, expreſſing the proportion of the weight of the gold to that of the ſilver.

This propoſition of Archimedes may be demonſtrated analytically in the following manner: let the magnitudes of the gold and ſilver in the crown be A and B, and their ſpecific gravities as a and b; then ſince the abſolute gravity of any body is compounded of its magnitude and ſpecific gravity, the weight of the gold is $a\,A$, of the ſilver $b\,B$, and of the crown $a\,A + b\,B = c \times \overline{A + B}$, ſuppoſing c to be the ſpecific gravity of the mixture. Hence $a\,A - c\,A = c\,B - b\,B$; and conſequently, $c - b : a - c :: A : B$, as before. Cotes's Hydroſtatical, &c. Lectures, p. 81. Martin's Phil. Brit. vol. i. p. 305, &c. See *Specific* GRAVITY and EQUATION.

HIEROBOTANE, in *Botany*. See VERVAIN.

HIEROBULUM, a name given by the ancients to the colchicum.

Some have wondered that the medical writers of thoſe times ſhould give this name, which ſignifies the *ſacred root*, to a thing that was generally allowed to be a poiſon; but Wedelius has proved that it may be given, under proper regulations, with ſafety and great ſucceſs, in malignant and petechial fevers, and in the worſt kinds of the ſmall-pox and meaſles. The manner he gave it was in a mixture with bezoar and plantane-root, and this he called his *arcanum duplicatum catholicum*, or peſtilential alexipharmic. The ancients had a cuſtom of wearing this root about their necks, by way of an amulet, to prevent infection; and it was probably from this that it obtained the name of the ſacred bulb.

HIEROCERYCE, in *Mythology*, the chief of the ſacred heralds in the myſteries of Ceres, whoſe office was to exclude all improper perſons, to preſerve order in the celebration of theſe myſteries, and to recite the formulæ of initiation.

The hieroceryce repreſented Mercury, and was diſtinguiſhed by the ſame attributes; the office was perpetual, and belonged to the family of the Ceryces, the deſcendants of Ceryx, the laſt ſon of Eumolpus.

HIEROCHLOE, in *Botany*, from ἱερος, *ſacred*, and χλοη, *a green herb or graſs*, ſo named by Gmelin, becauſe this graſs has a ſimilar appellation in Pruſſia, and is there ſtrewed before the church-doors on feſtival days, being conſidered as ſacred to the Virgin Mary. Locſel calls it *Gramen Mariæ*. Its ſcent, when it begins to dry, is that of Woodruff, or the moſt fragrant new hay.—Gmel. Sib. v. 1. 101. Brown. Prodr. Nov. Holl. v. 1. 208. (Diſarrhenum; Billard. Nov. Holl. v. 2. 82. See DISARRHENUM.)—Claſs and order, *Triandria Digynia*. Nat. Ord. *Gramina*.

Gen. Ch. *Cal.* Glume of two valves, containing three florets; its valves ovate, acute, membranous, unequal. *Cor.* of two valves; the outer ovate, coriaceous, ribbed, often rough, ſometimes ſhortly awned; the inner ſmaller, membranous, naked, emarginate, with inflexed edges. *Stam.* Filaments three in each of the lateral florets, capillary, recurved, ſhorter than the corolla, two in the central or terminal one; anthers pendulous, linear, forked at each end. *Piſt.* in the central floret only; Germen ſuperior, ovate, ſmall; ſtyles ſhort, approximated; ſtigmas longer than the corolla, linear, downy. *Peric.* none, except the permanent corolla. *Seed* ſolitary, ovate, pointed, ſmall, not attached to the corolla.

Eſſ. Ch. Calyx of two valves, containing three florets; the lateral ones male, with three ſtamens; central one hermaphrodite, with two. Corolla of two valves.

A genus of ſmooth graſſes, which in drying acquire the ſweet ſcent of Woodruff, or new hay, approaching to the bitter-almond flavour. The flowers are panicled; their central floret moſtly without awns, the lateral ones often awned. It contains many ſpecies, according to Mr. Brown, natives of the colder parts of both hemiſpheres.—Examples of *Hierochloe* are

H. *antarctica*. Brown 209. (Diſarrhenum antarcticum; Billard. Nov. Holl. v. 2. 83. t. 232.)—Panicle looſe, ſomewhat drooping. Glumes ſingle-ribbed, with an even keel. Lateral florets awned, downy, fringed at the margin and keel with curved hairs; central one pointed. Leaves flat.—Native of Van Diemen's Land.—Mr. Brown remarks, that *Holcus redolens*, Forſt. Prodr. 92. n. 563, taken by that author from Solander's manuſcripts, appears by the Bankſian herbarium to be very nearly related to the above, differing only in having the inner glume of the calyx furniſhed with three ribs at the baſe, and the hairs which fringe the edges and keel of the lateral florets longer and ſtraighter. This was found in New Zealand, and we preſume it may ſafely be deemed a variety only. *Aira antarctica*, Forſt. Prodr. 8. n. 41, ſuſpected by La Billardière to be his *Diſarrhenum antarcticum*, is found by Mr. Brown, on examining an authentic ſpecimen, to be very different, and to belong to the genus *Avena*.

H. *redolens*. (Holcus redolens; Vahl. Symb. faſc. 2. 102.) Panicle cloſe. Keels of the glumes beſet with little ſcattered teeth. Florets bearded at the baſe; fringed at the margin and ſummit. Leaves involute.—Native of Terra del Fuego. Rather larger than the foregoing, with awns as long as the *corolla*, whoſe edges are ſtrongly fringed, and its extremity abrupt. The colour of the *corolla* is a rich brown; that of the *calyx* paler but not quite white.

Other ſpecies are the *Holcus borealis* and *auſtralis* of Schrader's Fl. Germ. v. 1. 252, 253, included by Linnæus in his *H. odoratus*, Sp. Pl. 1485; and *H. alpinus*, ſent us by Dr. Swartz as deſcribed by himſelf in Schrader's Journal, but we have not been able to diſcover it in the volumes we poſſeſs. This laſt has a ſmall, denſe, ovate, copper-coloured panicle, awns nearly equal to the corolla, and involute leaves. Not having acceſs to the whole of the ſpecies of which we have incomplete information, we cannot ſafely attempt to define even thoſe that we know, becauſe we cannot contraſt the whole together.

HIEROCLES, in *Biography*, governor of Bithynia and præfect of Alexandria, flouriſhed about the year 303, and diſtinguiſhed himſelf as an adverſary and perſecutor of the Chriſtians. He was a man of letters, and wrote "Two Books," addreſſed "To the Chriſtians," of which Lactantius has given an account (Inſt. l. v.), and which have been anſwered by Euſebius of Cæſarea. (Cont. Hier. ad Calc. em. Evangel.)

Evangel.) In theſe books Hierocles endeavoured to ſhew, that the ſacred ſcriptures abound with inconſiſtencies and contradictions. He alſo reviled Peter and Paul, and the other diſciples, as men ignorant and illiterate, ſome of whom got their livelihood by fiſhing, and propagators of falſehood. He alſo affirms, that Chriſt was baniſhed by the Jews, and afterwards aſſembled a band of 900 men and committed robbery. We are alſo informed, that Hierocles made a compariſon of Chriſt with Apollonius of Tyana, giving the preference to the latter. From the account of the work of Hierocles, which is given by Lactantius and Euſebius, Dr. Lardner deduces the following concluſions: that Hierocles had read the ſcriptures of the New Teſtament, if not of the Old likewiſe; that he bears teſtimony to the exiſtence of the ſeveral parts of the New Teſtament, the Goſpels, and the Epiſtles; that he did not diſpute the genuineneſs or antiquity of the writings of our apoſtles and evangeliſts, but merely endeavoured to diſparage them; that he did not deny the truth of our Saviour's miracles, but endeavoured to depreciate them by aſcribing them to magical arts; that the reſpect ſhewn to Jeſus by vaſt numbers of men, though he was defamed by many, and though he was crucified, is a demonſtration, that he was not a man of a bad character, for robbers and other malefactors, who ſuffer for their crimes, are never deified nor much reſpected after their death; it appears alſo, that Hierocles was the firſt who had formed a compariſon of our Saviour with Apollonius. Lardner's Works, vol. viii.

Hierocles, a Platonic philoſopher of Alexandria, flouriſhed about A. D. 450. He was cruelly ſcourged at Conſtantinople for his adherence to the Pagan ſuperſtitions; and it is ſaid that, in the midſt of his torture, when he received ſome of the blood into his own hand, he threw it upon the face of his judge, repeating the following verſe from Homer (Odyſſ. l. ix. v. 347.):

Κυκλωψ, τῆ, πίε οἶνον, ἐπει φάγες ἀνδρόμεα κρεα.

"Cyclops! ſince human fleſh has been thy feaſt,
Now drain this goblet, potent to digeſt."—Pope.

It appears, however, that notwithſtanding this unjuſt treatment by the Chriſtians at Conſtantinople, he afterwards philoſophized at Alexandria in his uſual manner; and hence we may infer, that the ſeverities with which the Gentile people, and particularly their learned men and philoſophers, were treated, were not extremely rigorous. Hierocles wrote a treatiſe "On Providence," of which Photius has given large extracts, and in which he appears to be an advocate for the Eclectic philoſophy, labouring to reconcile the doctrines of Plato and Ariſtotle concerning providence, the origin of the world, the immortality of the ſoul, and other ſubjects. He purſues the ſame method of philoſophizing in his book "On Fate," and in his "Commentary on the Golden Verſes of Pythagoras," which is ſtill extant. Beſides theſe, there are large fragments of other works preſerved in Stobæus, and generally publiſhed together with the works above-mentioned. All theſe are valuable, tending to recommend and promote virtue; but not with that force which flows from revelation, enjoining every part of moral righteouſneſs by divine authority, and with the aſſurance of recompences in a future ſtate. Lardner's Works, vol. ix. Brucker's Hiſt. Phil. by Enfield, vol. ii.

HIEROCORACES, *q. d. ſacred crows*, in *Mythology*, were miniſters of Mithras, or of the Sun, which the Perſians worſhipped under this title.

HIEROGLYPHIC, Ἱερογλυφικα, a ſymbol or myſtic figure, uſed among the ancient Egyptians to cover or conceal the ſecrets of their theology.

The word is compoſed of the Greek ἱερος, *ſacer*, *holy*, and γλυφειν, *ſculpere*, *to engrave*; it being the cuſtom to have the walls, doors, &c. of their temples, obeliſks, &c. engraven with ſuch figures.

Hieroglyphics are properly emblems or ſigns of divine, ſacred, or ſupernatural things; by which they are diſtinguiſhed from common ſymbols, which are ſigns of ſenſible and natural things.

Hermes Triſmegiſtus is commonly eſteemed the inventor of hieroglyphics; he firſt introduced them into the Heathen theology; from whence they have been tranſplanted into the Jewiſh and Chriſtian. See Hermes.

Sacred things, ſays Hippocrates, ſhould only be communicated to ſacred perſons. Hence it was, that the ancient Egyptians communicated to none but their kings and prieſts, and thoſe who were to ſucceed to the prieſthood and the crown, the ſecrets of nature, and the ſecrets of their morality and hiſtory; and this they did by a kind of cabbala, which, at the ſame time that it inſtructed them, only amuſed the reſt of the people. Hence the uſe of hieroglyphics, or myſtic figures, to veil their morality, politics, &c. from profane eyes. (Spon.) This author, it may be obſerved, and many others, do not keep to the preciſe character of a hieroglyphic, but apply it to profane as well as divine things.

Hieroglyphics are a kind of real characters, which do not only denote, but in ſome meaſure expreſs the things. Thus, according to Clemens Alexandrinus, Strom. v. a lion is the hieroglyphic of ſtrength and fortitude; a bullock, of agriculture; a horſe, of liberty; a ſphinx, of ſubtility, &c.

Such is the opinion that has generally been embraced both by ancient and modern writers, of the origin and uſe of hieroglyphics; it has been almoſt uniformly maintained that they were invented by the Egyptian prieſts, in order to conceal their wiſdom from the knowledge of the vulgar. But the late biſhop Warburton hath, with much ingenuity and learning, endeavoured to ſhew, that this account is erroneous.

According to this writer, the firſt kind of hieroglyphics were mere pictures; becauſe the moſt natural way of communicating our conceptions by marks or figures was by tracing out the images of things; and this is actually verified in the caſe of the Mexicans, whoſe only method of writing their laws and hiſtory was by this picture-writing. But the hieroglyphics invented by the Egyptians, were an improvement on this rude and inconvenient eſſay towards writing; for they contrived to make them both pictures and characters; in order to effect this improvement, they were obliged to proceed gradually, by firſt making the principal circumſtance of the ſubject ſtand for the whole, as in the hieroglyphics of Horapollo, which repreſent a battle of two armies in array by two hands, one holding a ſhield, and the other a bow; then putting the inſtrument of the thing, whether real, or metaphorical, for the thing itſelf, as an eye and ſceptre to repreſent a monarch, a ſhip and pilot the governor of the univerſe, &c. and finally, by making one thing ſtand for or repreſent another, where their obſervations of nature or traditional ſuperſtitions led them to diſcover or imagine any reſemblance; thus, the univerſe was deſigned by a ſerpent in a circle, whoſe variegated ſpots denoted the ſtars; and a man who had nobly ſurmounted his misfortune was repreſented by the ſkin of the hyæna, becauſe this was ſuppoſed to furniſh an invulnerable defence in battle.

The Chineſe writing, he obſerves, was the next kind of improvement in the uſe of hieroglyphics; the Egyptians joined characteriſtic marks to images, the Chineſe threw out the images, and retained only the contracted marks, and from theſe marks proceeded letters. The general concurrence of different people in this method of recording their thoughts, can never be ſuppoſed to be the effect of imitation, ſiniſter views, or chance; but muſt be conſidered as the uniform voice of nature, ſpeaking to the rude conceptions of mankind; for not only the Chineſe of the Eaſt, the Mexicans of the Weſt, and the Egyptians of the South, but the Scythians, likewiſe, of the North, and the intermediate inhabitants of the earth, *viz.* the Indians, Phœnicians, Ethiopians, &c. uſed the ſame way of writing by picture and hieroglyphic.

The biſhop farther ſhews, that the ſeveral ſpecies of hieroglyphic writing took their riſe from nature and neceſſity, and not from choice and artifice, by tracing at large the origin and progreſs of the art of ſpeech. He proceeds to ſhew how, in proceſs of time, the Egyptian hieroglyphics came to be employed for the vehicle of myſtery. They uſed their hieroglyphics two ways; the one more ſimple, by putting the part for the whole, which was the *curiologic* hieroglyphic; and the other more artificial, by putting one thing, of reſembling qualities, for another, called the *tropical* hieroglyphic; thus the moon was ſometimes repreſented by a half circle, and ſometimes by a cynocephalus. They employed their proper hieroglyphics to record openly and plainly, their laws, policies, public morals, and hiſtory, and all kinds of civil matters; this is evident from their obeliſks, which were full of hieroglyphic characters deſigned to record ſingular events, memorable actions, and new inventions; and alſo from the celebrated inſcription of the temple of Minerva at Sais, where an infant, an old man, a hawk, a fiſh, and a river-horſe, expreſſed this moral ſentence; All you who come into the world and go out of it know this, that the gods hate impudence. However, the tropical hieroglyphics, which were employed to divulge, gradually produced ſymbols which were deſigned to ſecrete or conceal; thus Egypt was ſometimes expreſſed by the crocodile, ſometimes by a burning cenſer with a heart upon it; where the ſimplicity of the firſt repreſentation and the abſtruſeneſs of the latter ſhew, that the one was a tropical hieroglyphic for communication, and the other a tropical ſymbol invented for ſecrecy.

Enigmatic ſymbols were afterwards formed by the aſſemblage of different things, or of their properties that were leſs known; and though they might have been intelligible at firſt, yet, when the art of writing was invented, hieroglyphics were more generally diſuſed, the people forgot the ſignification of them, and the prieſts, retaining and cultivating the knowledge of them, becauſe they were the repoſitories of their learning and hiſtory, at length applied them to the purpoſe of preſerving the ſecrets of their religion.

Symbols were the true original of animal worſhip in Egypt, as ſir John Marſham conjectured, Can. Cron. p. 58. becauſe in theſe hieroglyphics was recorded the hiſtory of their greater deities, their kings, and lawgivers; repreſented by animals and other creatures; the ſymbol of each god was well known and familiar to his worſhippers, by means of the popular paintings and engravings on their temples, and other ſacred monuments; ſo that the ſymbol preſenting the idea of the god, and that idea exciting ſentiments of religion, it was natural for them in their addreſſes to any particular god, to turn to his repreſentative mark or ſymbol; eſpecially when we conſider farther, that the Egyptian prieſts feigned a divine original for hieroglyphic characters, in order to increaſe the veneration of the people for them. Theſe would of courſe bring on a relative devotion to theſe ſymbolic figures, which, when it came to be paid to the living animal, would ſoon terminate in an ultimate worſhip.

Another conſequence of the ſacredneſs of the hieroglyphic characters was, that it diſpoſed the more ſuperſtitious to engrave them on gems, and wear them as amulets or charms. This magical abuſe ſeems not to have been much earlier than the eſtabliſhed worſhip of the god Serapis, which happened under the Ptolemys, and was firſt brought to the general knowledge of the world by certain Chriſtian heretics and natives of Egypt, who had mixed a number of Pagan ſuperſtitions with their Chriſtianity. Theſe gems, called abraxas, are frequently to be met with in the cabinets of the curious, and are engraven with all kinds of hieroglyphic characters. To theſe abraxas ſucceed the taliſmans. Warburton's Divine Legation of Moſes demonſtrated, vol. ii. paſſim.

HIEROGRAMMATEI, ‘Ιερογραμματεις, among the *Ancient Egyptians*, were the prieſts appointed to explain myſteries of religion, and to direct the performance of the ceremonies thereof; and for this purpoſe they had a kind of ſacred alphabetical character, different from the political one, and which the writer, cited in the laſt article, conſiders as one of the four kinds of Egyptian writing. This, as well as the epiſtolic, uſed in civil matters, was formed by the letters of an alphabet; and, from its being uſed only in religious matters, was called hierogrammatic. The other two ſpecies of writing were the hieroglyphic and ſymbolic.

The hierogrammatei invented and wrote hieroglyphics and hieroglyphical books, and occaſionally explained them, together with other matters relating to the doctrines of religion. If we may believe Suidas, they were all prophets; at leaſt, he relates, that a hierogrammateus foretold to an ancient king of Egypt, that there would be an Iſraelite of great wiſdom, virtue, and renown, who ſhould humble Egypt.

The hierogrammatei were always near the king, to aſſiſt him with their informations and councils: the better to fit them for this, they made uſe of the ſkill and knowledge they had acquired in the ſtars and the motions of the heavenly lights, and even of the writings of their predeceſſors, wherein their functions and duties were delivered. They were exempted from all civil employments, were reputed the firſt perſons in dignity next the king, and bore a kind of ſceptre in form of a plough-ſhare.

After Egypt became a province of the Roman empire, the hierogrammatei ſunk into neglect.

HIEROLOGY, denotes a diſcourſe on ſacred things. Among the Jews and Greeks, this term was uſed for the nuptial benediction.

HIEROMANTIA, ‘Ιερομαντεια, in *Antiquity*, a general name for all kinds of divination, made from the various things offered in ſacrifice to the gods. They firſt made conjectures from the external parts and motions of the victim; then from its entrails, from the flame in which it was conſumed, from the cakes and flour, from the wine and water, &c. Vide Pott. Archæol. Græc. lib. ii. cap. 14. tom. i. p. 314.

HIEROMENIA, ‘Ιερομενια, in *Ancient Chronology*, a name given to the month in which the Nemean games were celebrated. It was the ſame with the Athenian month Bœdromion, and anſwered to the latter end of our Auguſt and beginning of September.

HIEROMNEMON, ‘Ιερομνεμων, among the *Ancient Greeks*, ſignified a delegate choſen by lot, and ſent to the great council of the Amphictyons, where he was to take care of what concerned religion. The hieromnemones were reckoned more honourable than the other members of that aſſembly, the general meetings of which were always ſummoned by them, and their names were prefixed to the decrees made by that council.

Hieromnemon, compoſed of ἱερος, *ſacred,* and μνεμων, *one who advertiſes* or *puts in mind of,* an officer in the ancient Greek church, whoſe principal function was to ſtand behind the patriarch at the ſacraments, ceremonies, &c. and ſhew him the prayers, pſalms, &c. which he was to rehearſe.

He alſo clothed the patriarch in his pontifical robes, and aſſigned the places of all thoſe who had a right to be around him when ſeated on his throne, as the maſter of the ceremonies now does to the pope.

The hieromnemon was commonly a deacon: when he was in prieſt's orders, as it ſometimes happened, he was excuſed from dreſſing the patriarch in his pontifical habits. Whether he were deacon or prieſt, he had always under him an officer named *caſtricius.* He had alſo the keeping of the book entitled "Contacion," or book of ordination; and that called the Enthronianiſmus, which was a ſort of ritual.

Hieromnemon, in the *Writings of the Ancients,* was alſo the name of a ſtone ſaid to have been uſed in divination, and called by others crotylos and amphicome. There is no deſcription left us of it by the ancients, from which we may gueſs what ſtone it was, or from whence it was brought.

HIERONESOS, in *Ancient Geography,* an iſland of the Mediterranean, between Sicily and Africa. Pliny.

HIERONYMITES, compounded of ἱερος, *holy,* and ονομα, *name,* or *Hermits of St. Jerom.* See Jeronymites.

HIEROPHANTES, or Hierophanta, from ἱερος, *holy,* and φαινω, *I appear,* in *Antiquity,* a prieſt among the Athenians.

The hierophantes was properly the chief perſon that officiated in the Eleuſinia, that great ſolemnity ſacred to Ceres.

This office was firſt executed by Eumolpus, and continued in his family for twelve hundred years, though, when any perſon was appointed to this dignity, he was required always to live in celibacy.

St. Jerom ſays, that the hierophantes extinguiſhed the fire of luſt, by drinking cicuta, or the juice of hemlock, or even by making themſelves eunuchs. Apollodorus obſerves, that the hierophantes inſtructed perſons initiated into their religion in the myſteries and duties thereof, and that it was hence he derived his name: for the ſame reaſon he was called *prophetes,* the prophet. He had officers under him to do the ſame thing, or to aſſiſt him therein, who were alſo called *prophetes* and *exegetæ,* i. e. *explainers of divine things.*

To the hierophantes it belonged to dreſs and adorn the ſtatues of the gods, and to bear them in proceſſions and ſolemn ceremonies.

There were alſo women employed in the ceremonies of the Eleuſinia, and named Hierophantida.

HIEROPHYLAX, of ἱερος, *ſacred,* and φυλαξ, *keeper,* of φυλαττω, *I keep,* an officer in the Greek church. His function is that of guardian or keeper of the holy things, utenſils, veſtments, &c. anſwering to our *ſacriſta* or *ſexton.*

HIEROSCOPY, Hieroscopia, formed of ἱερος, *ſacred,* and σκοπεω, *I view* or *conſider,* a kind of divination performed by conſidering the victim, and obſerving every thing that occurs during the courſe of the ſacrifice.

HIERSAC, in *Geography,* a town of France, in the department of the Charente, and chief place of a canton, in the diſtrict of Angoulême. The place contains 593, and the canton 11,113 inhabitants, on a territory of 205 kiliometres, in 14 communes.

HIERTING, or Ietting, a ſea-port of Denmark, ſituated at the mouth of the Warde, with one of the beſt harbours in N. Jutland; 22 miles N.W. of Ripen. N. lat. 55° 29′. E. long. 8° 22′.

HIERTLANDA, a town of Sweden, in the province of Smaland; 30 miles N. of Wexio.

HIETANIEMI, a town of Sweden, in Weſt Bothnia; 24 miles N. of Tornea.

HIGANQUET, a town on the E. coaſt of the iſland of Mindanao. N. lat. 9° 26′. E. long. 125° 51′.

HIGDEN, Ralph, in *Biography,* one of the Engliſh chroniclers, was a monk of St. Werburg's, in Cheſter, where he died in the year 1377. His hiſtorical work was entitled "Polychronicon," originally written in Latin, but tranſlated into Engliſh by John de Treviſa, and printed by Caxton. It is in ſeven books, and extends from the creation to the year 1357. This author is valuable as having preſerved ſeveral documents relative to the times of the ancient Britons and Saxons, from chronicles now loſt. The beſt edition is that of 1642, fol.

HIGH, Altus, a term of relation applied to a body, conſidered, according to its third dimenſion, or its elevation above the horizon, or even above the ground.

High is alſo uſed to denote a perſon in power, dignity, &c.

High *Chancellor, Lord.* See Chancellor.

High *Church.* See Church.

High-*Bearing Cock.* See Cock.

High *Commiſſion Court.* See Commission.

High *Conſtable of England.* See Constable.

High *Court of Parliament.* See Parliament.

High *and Dry* is a phraſe, among *Seamen,* denoting the ſituation of a ſhip when ſhe has run a-ground, ſo as to be ſeen dry upon the ſtrand.

High *Dutch* is the German tongue in its greateſt purity, as ſpoken in Miſnia, &c. See Teutonic, &c.

High, in *Muſic,* is ſometimes uſed in the ſame ſenſe with *local,* in oppoſition to *low;* and ſometimes in the ſame ſenſe with *acute,* in oppoſition to *grave.*

High *Operation,* in *Surgery,* is a method of extracting the ſtone; thus called, becauſe the ſtone is taken out at the upper part of the bladder.

For the method of performing the high operation, ſee Lithotomy.

The high operation is ſaid to have been firſt practiſed by Roſſetus: others ſay by Franco, a ſurgeon of Lauſanne. It was retrieved by Mr. Douglas, and practiſed with good ſucceſs by Mr. Cheſelden and others.

High-*Peak* of Derbyſhire, in *Geography,* has too often been mentioned as denoting ſome particular precipice, or frightfully rugged diſtrict, inſtead of being only one of the hundreds of the county, and including a great portion of well cultivated and populous tracts. What further ſhews this miſtake, as Mr. Farey obſerves in his "Report on Derbyſhire," is, that the Low Peak hundred, or wapentake of Wirkſworth, includes all the high and rugged lands on the weſt border of Derbyſhire, from Aſhbourn, almoſt to Whaley bridge, including Axe-edge, and others of its higheſt hills.

High *Places.* See Grove.

High *Point,* in *Geography,* a cape on the N. coaſt of the iſland of Barbadoes. N. lat. 13° 22′. W. long. 58° 30′.

High *Prieſt.* See Pontifex.

High *Relievo.* See Relievo.

High *Sea,* or ocean, is that far from land. See Sea.

High *Steward, Lord.* See Steward.

High *Taper,* in *Botany.* See Mullein.

High *Town,* in *Geography,* a town of America, in the ſtate of Georgia; 112 miles W. of Tugeloo.

HIGH *Tor*, at Matlock, is the name of a very high and perpendicular rock of lime-ſtone alternating with toad-ſtone, amygdaloid, or baſalt, cloſe on the E. ſide of the Derwent river, about ⅓d of a mile S.W. of Matlock church : a ſection of the ſtrata in this remarkable cliff may be found in the Philoſophical Magazine, vol. xxxi. plate 2.

HIGH *Treaſon*. See TREASON.

HIGH *Treaſurer, Lord*. See TREASURER.

HIGH *Water*, is that ſtate of the tides when they ceaſe to flow up, or the greateſt height of the flood-tide. See TIDE.

HIGH-*waved Cockle*, in *Natural Hiſtory*, is the name of a ſpecies of foſſil-ſhells, found in great numbers in the Bath free-ſtone, on King's Down, near Bath, along with other ſhells, called pundibs, and two other kinds. Mr. Walcott, in his petrifactions found near Bath, figure 30, repreſents this ſhell, and deſcribes it as having many ribs from the hinge to the hedges ; beak-pointed ; margin with a high wave : and ſays that it is common on the ploughed fields of ſome ſtone-brack ſoils.

HIGH-*Way*, *Via Regia*, a free paſſage for the king's ſubjects ; on which account it is called the king's high-way though the freehold of the ſoil belongs to the lord of the manor, or the owner of the land. (2 Inſt. 705.) Thoſe ways that lead from one town to another, and ſuch as are drift or cart-ways, and are for all travellers in great roads, or that communicate with them, are high-ways only ; and their reparation is under the care of ſurveyors. A nuiſance in a high-way is a common nuiſance, and puniſhable by indictment ; but a way to a pariſh-church, or to the common fields of a town, or to a private-houſe, or, perhaps, to a village which terminates there, and is for the benefit of the particular inhabitants of ſuch pariſh, houſe, or village only, may be called a private-way, but not a high-way, becauſe it belongeth not to all the king's ſubjects, but only to ſome particular perſons, each of whom, as it ſeems, may have an action on the caſe for a nuiſance therein. (1 Hawk. 201.) So if I have a private way without a gate, and a gate is hung up, an action lies upon the caſe, for I have not my way as I had before. (Litt. R. 267.) So if one grants me a way, and afterwards digs trenches in it to my hindrance, I may fill them up again. (Godb. 53.) All private ways are to be repaired by thoſe who uſe them.

A river that is common to all men, is alſo called a high-way. 1 Hawk. 201.

Where a high-way lies within a pariſh, the pariſh is bound to repair it, unleſs it appears that the ſame ought to be repaired by ſome particular perſon, either by reaſon of tenure or preſcription. At common law it is ſaid that all the country ought to make good the reparations of a high-way, where no particular perſons are bound to do it, becauſe the whole country have their eaſe and paſſage by that way.

If a high-way leading through a field is out of repair, travellers may juſtify going out of the track, though there be corn ſowed ; and in caſe a high-way is not ſufficient, any paſſenger may break down the incloſure, and go over the land adjoining, until a ſufficient way be made. All kinds of injuries to high-ways, that render them leſs commodious to travellers, are deemed nuiſances ; ſuch as laying logs of timber in them, erecting gates, or making hedges acroſs them, permitting boughs of trees to hang over them, &c. By ſtat. 13 Geo III. cap. 78. no tree or buſh is to be allowed to grow or ſtand within fifteen feet of the centre of the high-way, on forfeiture of 10*s*. by the owner. The poſſeſſors of land next adjoining ſhall cut, prune, or plaſh their hedges, and lop trees growing in or near ſuch hedges, or be liable to a complaint of the ſurveyor, after ten days notice ; and the juſtices at a ſpecial ſeſſions ſhall order ſuch hedges to be cut or plaſhed, and ſuch trees to be lopped ; and the poſſeſſor, who refuſes to comply within ten days after notice of ſuch order, ſhall forfeit 2*s*. for every twenty-four feet in length of ſuch hedge, and 2*s*. for every tree ; the ſurveyor ſhall order the ſame to be done, and the poſſeſſor, beſide the penalties, ſhall pay the charges of doing the ſame, to be levied by diſtreſs, by warrant of one juſtice. The occupiers of ſuch lands ſhall keep their ditches, drains, and water-courſes, in proper order, on forfeiture of 10*s*. after ten days notice given by the ſurveyor. No ſtone, timber, ſoil, or other matter, ſhall be laid in the high-way, ſo as to obſtruct or prejudice it, and remain there five days after notice by the ſurveyor, on forfeiture of 10*s*. and if ſuch ſtone, &c. ſhall be laid within fifteen feet of the centre of the high-way, the owner of the adjacent lands, after five days notice, may remove and diſpoſe of the ſame to his own uſe. Perſons making incroachments on the high-way by any fence, or breaking up the ſoil, within fifteen feet from its centre, ſhall forfeit 40*s*. to the informer, and the ſurveyor ſhall cauſe the damage to be repaired by the offender ; and one juſtice may levy the penalty and expence by diſtreſs. The ſurveyor is required to give written notice to thoſe who offend in theſe reſpects ; and if they do not comply within twenty days after ſuch notice, he ſhall proceed to remove nuiſances, &c. to cleanſe ditches, &c. and to cut hedges, &c. at the expence of the offender, who ſhall beſides forfeit for his neglect one penny for every foot in length. If the high-way is wilfully obſtructed by carriages or implements of huſbandry, the perſon offending ſhall forfeit 10*s*.

It is farther enacted by the ſame ſtatute, 13 Geo. III. cap. 78. that no driver of any cart, dray, or waggon, ſhall ride upon ſuch carriages, without having ſome perſon on foot to guide the ſame, excepting ſuch carriages as are conducted by perſons holding the reins of the horſe or horſes drawing them ; or damage or obſtruct the paſſage of any perſon or carriage in the ſtreet or high-way, or quit the high-way, or wilfully be at ſuch a diſtance from his carriage, ſo that he cannot have the government of the horſes, &c. drawing the ſame ; or refuſe or neglect to make way for loaded carriages ; or drive a carriage not having the owner's name, and refuſe to diſcover it, under the penalty of forfeiting any ſum not exceeding 10*s*. if the driver be not the owner of the carriage ; and if he be the owner, any ſum not exceeding 20*s*. on conviction by confeſſion, view of the juſtice, or oath of one witneſs, before one juſtice. Owners of carriages are alſo required to have their names and places of abode painted in large legible letters on ſome conſpicuous part ; and the owner of every ſtage waggon, or cart, ſhall, moreover, have the following words, *common-ſtage waggon*, or *cart*, as the caſe may be, under the penalty of a forfeiture not exceeding 5*l*. nor leſs than 20*s*. And no ale-houſes ſhall be kept by toll-collectors at any public bridge, under a penalty of 5*l*.

It is alſo enacted by the ſame ſtatute, that the juſtices ſhall iſſue their precept to the ſurveyor, requiring him to erect poſts or ſtones in places where ſeveral high-ways meet, with inſcriptions on them in large legible letters, containing the names of the towns or chief villages to which the ſeveral ways lead ; and alſo in places ſubject to floods, inſcribed with marks denoting the greateſt depth of the water : and if he ſhall neglect or refuſe for three months, he ſhall forfeit 20*s*. And if any perſons remove or deſtroy poſts, blocks, banks, &c. ſet up for the ſecurity of horſe and foot cauſeways, or the battlements of bridges, or deſtroy or even deface any mile-ſtone or direction poſt, they ſhall forfeit, on conviction on the oath of one witneſs, before one juſtice, or upon view of the juſtice, a ſum not exceeding 5*l.* nor leſs than 10*s.* and on default of payment be committed to the houſe of correction for any term not exceeding one month, nor leſs than ſeven days.

The ſame ſtatute farther enjoins, that no waggon, the fellies of whoſe wheels are nine inches broad, ſhall be drawn with more than eight horſes, nor carts of the ſame dimenſions with more than five horſes; and no waggon, the fellies of whoſe wheels are ſix inches broad, and rolling on each ſide a ſurface of nine inches, ſhall be drawn with more than ſeven horſes; and no waggon rolling a ſurface of ſix inches only, with more than ſix horſes: nor cart, the breadth of whoſe wheels is ſix inches, with more than four horſes; and no waggon, the fellies of whoſe wheels are of leſs breadth than ſix inches, ſhall be drawn with more than five horſes, nor cart of the ſame breadth with more than three horſes: the owner that offends againſt theſe regulations ſhall forfeit 5*l.* and the driver, not being the owner, 10*s.* for every horſe above the proper number, to the ſole uſe of the informer. But carriages moving upon wheels or rollers, of the breadth of ſixteen inches on each ſide with flat ſurfaces, ſhall be allowed to be drawn with any number of horſes. No regulations affecting the number of horſes, and wheels of carriages, ſhall extend to carriages uſed in carrying one ſtone or block of marble, cable rope, piece of metal, or piece of timber, or to ſuch ammunition and artillery as may be required for his majeſty's ſervice. For all the purpoſes of this act two oxen, or horned cattle, ſhall be conſidered as one horſe.

By the common law, no high-way can be changed without the king's licence firſt obtained, upon a writ of *ad quod damnum.* In aid of the common law, and to render the changing of high-ways leſs troubleſome and expenſive, power is given by 13 Geo. III. cap. 78. to the juſtices of the peace to widen, divert, and change high-ways, as they ſhall judge moſt convenient. And it is enacted that the ſurveyor ſhall make every public cart-way leading to any market town, twenty feet wide at the leaſt, and every public horſe-way or drift-way eight feet wide at the leaſt, wherever the ground between the fences ſhall admit of it; or on the view of two juſtices, it ſhall be widened or diverted at their pleaſure, provided that its breadth exceeds not thirty feet, and that no houſes or buildings are pulled down, or any garden, park, court, or yard, taken away; and the owners of the ground, which ſhall be laid into the high-way, or through which it ſhall paſs, ſhall be recompenſed for it, and every injury redreſſed. The expences of making, repairing, &c. high-ways, are defrayed by equal aſſeſſments, made by the warrant of a juſtice, at a ſpecial ſeſſions, on all occupiers of lands, tenements, woods, tithes, and hereditaments; provided that no ſuch aſſeſſment in one year ſhall exceed ſix-pence in the pound. In extraordinary caſes another aſſeſſment may be made, provided this and the preceding ſhall not in any one year exceed the rate of nine-pence in the pound.

By the ſame ſtatute the juſtices are enjoined to hold a ſpecial ſeſſions for the high-ways, in the week next after the Michaelmas general quarter-ſeſſions yearly; and notice ſhall be given to the conſtables of the reſpective pariſhes at leaſt ten days before it ſhall be held. Surveyors of the high ways are to be choſen yearly out of a liſt of proper perſons, nominated by the houſholders, aſſeſſed to any parochial or public rate, by the juſtices at their ſeſſions; and their number ſhall depend on the extent of the pariſh, &c. But no perſon is liable to be appointed to ſerve this office within three years from the time of his having ſerved it, without his own conſent. Thoſe who refuſe to ſerve, after having been nominated by the pariſh and juſtices, ſhall forfeit 5*l.* and if they were only nominated by the juſtices, they ſhall forfeit 50*s.* In this caſe, the juſtices may appoint a proper perſon to this office, with a ſalary not exceeding one eighth part of what ſhall have been raiſed by aſſeſſment of ſix-pence in the pound for the uſe of the high-ways in the diſtrict where the aſſeſſment hath been raiſed; and they ſhall alſo appoint one ſubſtantial inhabitant of ſuch pariſh, &c. for aſſiſtant to ſuch ſurveyor, till the next annual appointment, whoſe refuſal incurs a forfeiture of 50*s.* And if a ſecond perſon refuſe, he ſhall alſo forfeit 50*s.* and a third ſhall be appointed, with a ſalary. Special ſurveyors returned to the juſtices by two parts out of three of thoſe who have the choice, with a ſettled ſalary, may be appointed by them with the ſaid ſalary. In caſe of the death of a ſurveyor, two juſtices at a ſpecial ſeſſions may appoint another in his room.

It is the buſineſs of the ſurveyor to preſerve high-ways in proper repair, &c. For this purpoſe it is enacted by the ſtatute (34 Geo. III. c. 74.), that every perſon keeping a team, draught, or plough, *i. e.* who keeps a waggon, cart, wain, plough, or tumbrel, and three or more horſes or beaſts of draught, ſhall ſix days in the year furniſh one wain, cart, or carriage, and other neceſſaries, and two able men, on the day and place appointed by the ſurveyor. Thoſe who occupy lands of 50*l.* a year ſhall do the ſame; and in like manner for every 50*l.* a year reſpectively. Thoſe who occupy lands under 50*l.* ſhall pay to the ſurveyor, in lieu of the duty, for every 20*s.* annual value of their land, &c. one penny for every day's ſtatute duty, &c. and the ſame for every 20*s.* above the annual value of 50*l.* and leſs than 100*l.* Perſons keeping a team, but occupying land of the yearly value of 30*l.* ſhall be obliged to ſend only one labourer with ſuch team. Perſons not keeping a team, but keeping one or more cart or carts, and one or more horſes, ſhall ſend one labourer with each cart; and perſons keeping a wheel-carriage, but no team, nor occupying 50*l.* a year, in the pariſh, townſhip, or place where he reſides, ſhall pay to the ſurveyor 1*s.* in reſpect of every day's ſtatute duty, for every horſe which he ſhall uſe in ſuch carriage. Every inhabitant eighteen years of age, and upwards, but under ſixty, nor chargeable in any other way for 4*l.* a year, or upwards, and not being an apprentice or menial ſervant, or not having ſerved or compounded in any other place for that year, ſhall go in perſon, or find a labourer, on each of the aforeſaid days. Carriages ſhall be changed, at the diſcretion of the ſurveyor, for men, three being allowed for each team, or 4*s.* 6*d.* ſhall be paid in lieu of them. Perſons liable to perform ſtatute duty may compound at ſuch rates as the juſtices ſhall think fit, not exceeding 6*s.* nor leſs than 3*s.* for each team, for each day, or, in default of their adjudging the ſame, the ſum of 4*s.* 6*d.*; for every cart and one horſe 2*s.*, for every cart with two horſes 3*s.* in lieu of each day's duty. And every inhabitant liable to perform ſuch duty, and not chargeable in any other reſpect, may compound for 4*d.* each day. The ſurveyor ſhall give four days notice to thoſe whoſe attendance is required, and they ſhall bring with them their own tools, continue at work for eight hours in each of the appointed days; and defaulters in finding a team, &c. ſhall forfeit 10*s.* thoſe in ſending a cart with one horſe and man, 3*s.* for not ſending a cart with two horſes and one man, 5*s.* and for each labourer 1*s.* 6*d.* Surveyors for neglect of duty, where no particular penalty is impoſed, ſhall forfeit a ſum not exceeding 5*l.* nor leſs than 10*s.* at the diſcretion of the juſtices. All defects of repairs of high-ways ſhall be preſented in the county where they lie: and the indictment muſt ſhew, that they are high-ways; alſo the places from and to which they lead: where the nuiſance was done, and how far it extends; it muſt likewiſe ſtate the fact clearly. Juſtices may preſent on their own view. For the farther regulations relating to high-ways, the principal of which have been already recounted, the reader is referred to 13 Geo. III. cap. 78.

HIGH-*ways, turnpike.* See TURNPIKE.

HIGH-*way men*, are robbers on the high-way; for the apprehending and taking of whom, a reward of 40*l.* is given by the ſtatute of 4 W. c. 8. to be paid within a month after conviction by the ſheriff of the county; to which the ſtatute 8 Geo. II. cap. 16. ſuperadds 10*l.* to be paid by the hundred indemnified by ſuch taking.

HIGHAM FERRERS, in *Geography*, a borough, market-town, and pariſh in the hundred of the ſame name, in the county of Northampton, England, is a place of conſiderable note, and is ſituated on a rocky elevation, abounding with ſprings, about half a mile from the northern banks of the Nen. Northward of the church, is a ſpace called the Caſtle-yard, the ſcite of a caſtle, which is ſuppoſed to have been erected by one of the Ferrer's family. But it more probably owes its origin to Thomas, earl of Lancaſter, ſon of Edmund, the younger ſon of Henry III.; who obtained this lordſhip in the fiftieth year of that monarch's reign. This nobleman, in the fifth of Edward II., was at the head of the aſſociation, which, under the pretext of ſupporting public liberty, demanded and obtained the diſmiſſal of Piers de Gaveſton, the royal favourite. The Caſtle-yard is divided into two parts, by a deep foſs, running from eaſt to weſt. That on the ſouth ſide contains about two acres: the only remains are hollows, heaps of ruins, and foundations of walls. The northern diviſion, both in extent and ſtrength, appears to have been the moſt conſiderable work. It comprizes nearly four acres, having on the eaſt ſide a very large moat, about fifty feet wide, and five hundred long; and another on the ſouth ſide of ſimilar dimenſions. This, it is conjectured, was the ſcite of the caſtle; and the ſpace to the ſouth, the ſituation of the advanced and covering works. The church is a handſome ſtructure: at the weſt end of the nave, on a handſome embattled tower, is raiſed a finely proportioned hexagonal ſpire; the weſtern front of the tower diſplays ſome curious architectural features; at the baſe is a pointed arched door-way, with two openings for doors beneath flattened arches: the ſurrounding jambs, pediment, &c. are charged with ſculpture of figures, foliage, &c. On each ſide of the chancel are ten ſtalls; one ornamented with a carved head of archbiſhop Chichele; another with his arms; the reſt with various enigmatical devices. In the chancel is an inſcription to the memory of the archbiſhop's parents. This prelate founded a college here in the year 1422, for eight ſecular canons. The building, now in a ruinous ſtate, was ſome years ſince converted into an inn: a portion of the revenues forms the endowment of the preſent free-ſchool. He alſo founded and endowed the Alms, or Bead-houſe, for twelve poor men and one woman.

Higham is a borough by preſcriptive right, and was incorporated in the reign of Philip and Mary. The corporation compriſes a mayor, ſeven aldermen, thirteen capital burgeſſes, and other inferior officers. The aldermen are choſen out of the burgeſſes; and the mayor annually elected from the body of aldermen. The mayor has a right of holding a court every three weeks, for determining actions for debt, in any ſum under forty pounds. The borough, by virtue of the ſame charter, returns one member to parliament; the elective franchiſe being veſted in all the inhabitants not receiving alms. The town is ſmall, conſiſting of two ſtreets, a lane, and what is here called the market-ſtead, in which ſtands a croſs, bearing a cube at the top, and on the four ſides are carved in ſtone different figures, emblematic of the crucifixion. By the returns under the population act, the number of houſes is 125; of inhabitants, 726. From its formerly having had three weekly markets, it was probably then much more populous. Thoſe kept on Mondays and Thurſdays have long been diſuſed, and the one held on Saturday is much decayed; though here are ſtill ſeven well accuſtomed fairs. The diſtance from London is 64 miles. Higham is particularly noted as the birth place of Henry Chichele, who was archbiſhop of Canterbury in the reigns of Henry V. and VI.; of whoſe love of learning and liberal encouragement for its diffuſion, the noble inſtitutions he founded and endowed are ſtrong and laſting monuments. Bridges's Hiſtory of Northamptonſhire, 2 vols. fol.

HIGHGATE, a populous hamlet, principally in the pariſh of Hornſey, and hundred of Oſſulſton, Middleſex, England, occupies, as its name partly implies, a high ſituation. It is about four miles north of London, and its buildings are irregularly diſperſed over a large extent of ground, along the ridge, and down the ſloping declivities of a hill. This place is ſaid to derive its name from a gate-houſe, or gate, that was formerly ſtanding at the top of the hill, and belonged to the biſhops of London, who exacted toll from all perſons with carriages, horſes, cattle, &c. that paſſed through it. Before this toll-bar was raiſed and road formed, the road from London to Barnett and northwards, was through Hornſey-park to Colney-Hatch, &c., but this being very "miry and deep in winter," as Norden ſtates, it was agreed between the biſhop of London and the landholders in this part of the country, that a new road ſhould be formed "through the park, at Highgate Hill," by the former, and that he and his ſucceſſors ſhould be authoriſed to collect toll from all paſſengers. At the time Norden wrote, this toll was farmed for 40*l.* annually; and in 1794 it was rented at 150*l.* a year. The gate-houſe was taken down in 1769, when the road "was opened at the joint expence of the Iſlington and Whetſtone truſt," as expreſſed on a board attached to a tavern built on the ſcite of the old toll houſe. Tolls are ſtill demanded for cattle, loaded carriages, and horſes for ſale. Near the gate-houſe is the parochial chapel, one aiſle of which was erected in 1565, and the other at a later period. It contains two or three monuments with buſts, &c., and in it ſome perſons of eminence have been interred. Among whom the following names occur: William Platt, eſq., who died in 1637; Lewis Atterbury, LL.D. obiit 1731; ſir Francis Pemberton, died 1697. Connected with the chapel is a free-ſchool houſe, which owes its erection to ſir Roger Cholmeley, knight, chief juſtice of the Queen's Bench in 1562, who alſo bequeathed a legacy to defray the education of poor boys of Highgate, and to ſupport a maſter, &c. The ſchool-houſe occupies the ſcite of an ancient hermitage. Highgate is noted, among the lower claſſes of the community, for a ſilly, burleſque, nugatory oath, which the inhabitants of ſome of the public-houſes occaſionally adminiſter to their viſitors. A pair of large horns is placed on the head of the perſon, and he is required to ſwear "that he will not eat brown bread when he can get white; will not drink ſmall beer when he can get ſtrong; will not kiſs the maid when he can kiſs the miſtreſs," &c. This abſurdity was probably invented by a cunning publican, to attract cuſtomers, and his ſcheme at firſt gave conſiderable publicity to the houſe and village, but is now ſeldom employed. Highgate is a great thoroughfare to the northern parts of England and Scotland. Hence a vaſt number of coaches, waggons, &c. paſs through it daily. The hill, from Holloway to the chapel, is long and ſteep. To avoid this ſteep aſcent different ſchemes have been propoſed at different periods, but hitherto all that has been effected to obviate the evil, or leſſen its force, is a removal of ſome feet of earth from the ſummit of the hill, and placing it at the bottom. In the year 1808 a new and novel ſcheme was propoſed by Mr. Robert Varie, an engineer, to form an arched ſubterraneous tunnel, for a public road, through Highgate-hill, and this plan is now proſecuting with avidity.

Highgate, a townſhip of America, being the north-weſternmoſt except Alburgh, in Vermont, Franklin county, containing 324 inhabitants.

HIGHLAND Creek, a river of America, in Kentucky, which runs into the Ohio, N. lat. 37° 32'. W. long. 88° 22'.

Highland *Point*, a cape on the N. E. coaſt of New Zealand, at the entrance of Lowland bay. S. lat. 37° 48'. W. long. 182° 16'.

Highlands, a mountainous tract of country in America, on the banks of Hudſon's river, in the ſtate of New York, between 40 and 60 miles N. of New York city. The paſſage on the river, through theſe highlands, for the diſtance of about 18 miles, is very grand and romantic. In theſe highlands are ſituated the important fortreſſes of Weſt Point, Fort Montgomery, and Stony Point. Theſe mountains abound with iron ore.

Highlands, a natural diviſion of Scotland, formed by the Grampian mountains, and including the northern and mountainous provinces, and applied to this part of the country in contra-diſtinction to the "Lowlands," which comprehend the ſouthern diſtricts. The appellation of Highlands is more ſtrictly confined to Argyleſhire, the coaſt of Perthſhire, and of Inverneſs, and the entire counties of Roſs, Sutherland, and Caithneſs, extending alſo to the Hebrides or Weſtern iſles. The whole of this diſtrict is wild, rugged, and mountainous, ſeparated by vales, from which the direct rays of the ſun are for ſome months intercepted by the elevated mountain, and into which the rivers flowing from them are precipitated. The three principal rivers, formed by numerous ſtreams and torrents iſſuing from the hills, are the Tay, the Spey, and the Forth. Before the commencement of the laſt century, little or no communication ſubſiſted between the Highlands and Lowlands, as they were unconnected by regular roads and bridges, and the entries from the one to the other, were, for the greater part of the year, impaſſable. In order to facilitate an intercourſe between theſe different parts of the country, general Wade, under a commiſſion from George I., travelled, in 1724, to the moſt difficult and dangerous paſſes of the mountains, and projected the bold undertaking of forming ſpacious roads in theſe rugged diſtricts. In 1726 he began the work, and by means of five hundred ſoldiers, employed under proper officers, in the ſummer ſeaſon, he completed it in 1737. Theſe roads were two hundred and fifty miles in length, and from twenty to twenty-five yards broad, guarded from the injuries of the rains and torrents, to which they were ſubject, by aqueducts and ſide-drains. The huge ſtones raiſed out of the ground by means of engines, are ſet up by the road ſide, to ſerve as guides in deep ſnows; and at each interval of five meaſured miles, pillars are erected, on which the number of miles is inſcribed. The roads enter the mountains at three different parts of the low country; one at Crieff, 24 miles N. of Stirling; another at Dunkeld, 12 miles N. of Perth; and the laſt goes along the ſide of Loch-Lomond, in Dunbartonſhire, by Luſs. Since the period in which Gen. Wade finiſhed his operations, the military roads have been farther extended, and a ready communication has been opened with every part of the country. Before the period to which we have now referred, the Highlands of Scotland were in a ſtate ſomewhat ſimilar to that of England before the Norman conqueſt. The inhabitants, who were a branch of the ancient Celtæ, probably the firſt inhabitants of Britain, and who have ſince been called Caledonians, were divided into tribes, called clans. Thoſe of the inferior order were vaſſals of particular chiefs, to whom they were attached, and on whom they relied for that ſafety which the laws could not afford them. On the other hand, the ſecurity and conſequence of a chieftain depended on the number and fidelity of his ſervants and retainers; who, on account of their relation to him, aſſumed a dignity, and acquired in their manners a degree of politeneſs, to which other uncivilized nations are ſtrangers. The rents of farms which theſe vaſſals occupied were inconſiderable, and were chiefly paid by military ſervice: ſo that the value of a proprietor's land was eſtimated, not by the money it produced, but by the men whom it could ſend into the field; and that the number of dependants might be increaſed, the farms or allotments of land were ſmall, and barely ſufficient for a ſcanty ſubſiſtence to the tenants. As an inconſiderable proportion of the country was cultivated, and as no intercourſe ſubſiſted between the inhabitants and any other nation, little time was employed in agriculture and commerce. The greateſt part of it was conſumed in indolence or amuſement, unleſs when their ſuperior ſummoned them to avenge on ſome neighbouring tribe an inſult or injury. No more grain was raiſed, nor was any more raiment manufactured by any family than that which barely ſufficed itſelf. Villages and hamlets, ſituated in vallies for ſhelter, were rudely conſtructed of turf and ſtone. In ſpring the natives ploughed or dug ſome adjacent patches of ſoil, in which barley or oats were ſown; in ſummer they prepared and collected turf and peat for fuel; in autumn they gathered in their ſcanty crops of grain and hay; and the reſidue of the year was devoted to paſtime or predatory excurſions. In winter evenings, around a common fire, the youth of both ſexes generally aſſembled for the ſong, the tale, and the dance. A taſte for muſic was prevalent among them. Their vocal ſtrains were plaintive and melancholy; their inſtrumental airs were either lively for the dance, or martial for the battle. In the time of Oſſian, of ancient celebrity, the harp was the chief inſtrument of muſic; its ſimplicity ſuited the mildneſs of their manners, and its wild notes were well adapted to the poetical effuſions of the bards. In a later period, when the quarrels of their chieftains embroiled them in a ſtate of almoſt continual warfare, the harp yielded to the bagpipe, an inſtrument of the moſt warlike kind, which ſtill continues to ſupply the moſt favourite muſic. The greater part of the Highland muſic, eſpecially the moſt ancient, as ſuited to the harp, is of the ſoft, tender, and elegiac caſt, chiefly expreſſive of the paſſions of love or grief; many of the latter pieces are ſprightly and cheerful, adapted to the regions of fancy and of feſtivity. Other pieces are of a martial nature, every note of which is expreſſive of rage or fury. They have alſo a mixed ſpecies of muſic, intended to commemorate ſome great battle or conteſt, when the elegiac, the martial, the mournful, and the joyful are united; but of all theſe the favourite of the Highlanders is that ſpecies called "Strathſpey reels," uſed in their dances. Every family of note retained an hiſtorian to narrate its heroic deeds and feats of valour, or a bard, who ſung the praiſes of the chieftain and his clan. Some fragments of their poetry

try have been handed down from remote ages, and recently moulded into heroic poems, of which we have a ſpecimen in the poems of Oſſian. Since the extinction of the order and office of bards, the Gallic poems and tales are in a great meaſure loſt or adulterated. The language of the Highlanders is ſtill the Gaelic (ſee Gaelic); and the genius and character of its poetry are well known; being tender, ſimple, beautiful, and ſublime. Strangers, who have ventured to penetrate into the faſtneſſes of the Highlanders, have been received and treated in the moſt hoſpitable manner; but, as for themſelves, they ſeldom wandered, except for the purpoſes of devaſtation or plunder. The dreſs of the country was the laſt remains of the Roman habit in Europe, well ſuited to the nature of the country and the neceſſities of war. It conſiſted of a light woollen jacket, or tartan, wove in ſquares of various colours, in which red, green, blue and black are moſt prevalent. The feil-bag, or kilt, is a ſhort petticoat of the ſame ſtuff, reaching to the knees; and the hoſe, or ſhort ſtockings, are woven in diamonds of red and white, tied under the knee with garters, often beautifully ornamented: the Highlanders have generally a pouch made of the ſkin of a badger, fox, or other animal, hanging before, in which they keep their tobacco and money, and this part of their dreſs is generally adorned with ſilver buttons and taſſels; their plaid is alſo of tartan, conſiſting of twelve or thirteen yards of cloth, wrapped round them in a graceful manner, faſtened round the middle by a belt, falling to the knees behind, and confined by a broach or ſilver pin to the top of the left ſhoulder: this is often their only cover, both within doors, and when obliged to repoſe in the fields. The truis or trews, which are a ſort of tartan pantaloons, are only worn by the gentry, inſtead of the kilt. Indeed, ſir John Sinclair contends, that the trews were the moſt ancient dreſs of the Highlanders, and that the kilt is of comparatively modern introduction. The Highlanders generally affected to have their dreſs of the colour of the heath on which they repoſed, probably from a principle of ſecurity in time of war, or that they might not be diſcovered while they lay in the heaths, waiting for their game. Their ancient arms were the broadſword and target, Lochaber axes, (now only uſed by the town-guard of Edinburgh,) and a dirk (ſhort dagger), to which, before the act for diſarming the Highlanders, in 1748, the piſtol ſtuck into the girdle had been added. Always armed with a dirk and piſtol, they were ready to reſiſt an aſſault, or revenge a provocation, as ſoon as it was given. This circumſtance contributed to render them polite and guarded in their behaviour to one another. When embodied by their chieftain, they were armed with a broadſword, a dagger, a target, a muſket, and two piſtols. In cloſe engagement, and in broken ranks, they were irreſiſtible. The only foe they dreaded was cavalry. As ſoon as the battle was over, moſt of the troops diſperſed, and returned home to diſpoſe of their plunder, and to provide for their families. Their religion was deeply tinctured with ſuperſtition. They believed in ghoſts and apparitions; by appearances in the heavens they predicted future events; they practiſed charms and incantations for the cure of various diſeaſes; and to ſome individuals they thought the divinity had communicated a portion of his preſcience.

The ſtate of Society in the Highlands has been greatly changed and ameliorated ſince the rebellions in 1715 and 1745. The Roman dreſs and the uſe of arms were prohibited by government; roads, as we have already obſerved, conſtructed at a vaſt expence, opened an eaſy communication with the low country; and the courts of barons were ſuppreſſed by the juriſdiction act. The heads of clans have now ceaſed to be petty monarchs; and the ſervices of their vaſſals are no longer requiſite for their defence or aggrandiſement. Diveſted of their legal authority, they now endeavour to preſerve their influence by wealth. With this view their attention is directed to the improvement of their eſtates. Their ancient mode of living is alſo entirely altered; and the Highland gentleman, in every reſpect, differs little from a proprietor of the like fortune in the ſouthern country. A ſpirit of induſtry has been excited among the tenants, while, in many places, arts and manufactures are encouraged; and the lower claſſes are, in conſequence of the eſtabliſhment of ſchools, provided with the means of education.

“The Highlanders (ſee Encycl. Brit. art. *Highlanders*); are of a quick and penetrating genius, ſtrongly tinctured with a curioſity or thirſt of knowledge, which diſpoſes them to learn any thing very readily. They are active and induſtrious, where oppreſſion does not diſcourage them by ſecluding even the hope of thriving. They are remarkably bold and adventurous, which qualifies them for being excellent ſeamen and ſoldiers. They are generally of a middle ſize, rather above it than otherwiſe: their eyes are briſk and lively, their features diſtinctly marked, and their perſons tight and well made. Their countenance is open and ingenuous, and their temper frank and communicative.”

HIGHLANDERS, in *Rural Economy*, a term frequently applied to the highland, and ſome other ſorts of Scotch cattle.

HIGHMORE, Joseph, in *Biography*, one among the moſt ſucceſsful portrait-painters in England from the time of ſir Godfrey Kneller (under whom he is ſaid to have ſtudied, and who particularly noticed him, by diſtinguiſhing him as the “Young Lawyer”), till the days of Hudſon, and his incomparable pupil Reynolds. He was the third ſon of Mr. Edward Highmore, a coal-merchant in Thames-ſtreet, and nephew of Mr. Highmore, ſerjeant-painter to king William, with whom Mr. (afterwards ſir John) Thornhill ſerved his apprenticeſhip. He was born in the pariſh of St. James, Garlickhithe, June 13th 1692, and was firſt intended for the law, and articled as clerk to an attorney in 1707; but he left it for painting, to which his inclination had always attached him, and was much employed. His leiſure hours had been uniformly devoted to the art of deſigning, and to the ſtudy of geometry, perſpective, architecture, and anatomy; and he made great proficiency in theſe ſeveral departments of ſcience, though he had no other inſtructors than books. Afterwards, indeed, he had an opportunity of attending the anatomical lectures of Mr. Cheſelden, and he entered himſelf at the Painter's Academy, in Great Queen-ſtreet, where he drew for 10 years. It was in the year 1715, on the expiration of his clerkſhip, that he commenced the practice of painting as a profeſſion, and ſettled in the city. In this year Dr. Brook Taylor publiſhed his “Linear Perſpective,” whoſe theory our author adopted, and upon which he grounded his ſubſequent practice; and it has been allowed that few, if any, of the profeſſion were ſo well acquainted with that excellent, though in ſome reſpects intricate, ſyſtem. As his reputation and buſineſs increaſed, he removed from the city to Lincoln's-Inn-Fields, in March 1723-4, where he had an opportunity of introducing himſelf to the nobility, by engaging with Mr. Pine, the engraver, to make drawings for his prints of the knights of the Bath. In the ſummer of 1732 he viſited the continent; and at Antwerp he had peculiar pleaſure in contemplating the works of Rubens, his favourite maſter. In 1734 he made a ſimilar excurſion to Paris, where he had the ſatisfaction of being ſhewn, by cardinal de Polignac, his famous group of antique ſtatues, the court of Lycomedes, then juſt brought from Rome. In 1750 he had the misfortune to loſe his excellent wife, daughter and heireſs of Mr. Anthony Hiller, of Effingham, in Surrey, whom he had married in 1716. On the firſt inſtitution of the Academy of Painting, Sculpture, &c. in 1753, he was elected one of the profeſſors, an honour which, on account of his numerous avocations, he was under a neceſſity of declining. His principal works were the portraits of the knights of the Bath, on the revival of that order in 1725. In 1754 he publiſhed "A critical Examination of thoſe two Paintings (by Rubens) on the ceiling of the banqueting-houſe at Whitehall, in which architecture is introduced ſo far as relates to perſpective; together with the diſcuſſion of a queſtion which has been the ſubject of debate among painters, *viz.* "Whether parallel perſpective be at all times juſt?" Another literary work gained him more applauſe, *viz.* "The Practice of Perſpective, on the Principles of Dr. Brook Taylor," &c. written many years before, but not publiſhed till 1763. In 1765 he publiſhed, without his name, "Obſervations on a Pamphlet, entitled Chriſtianity not founded on Argument." He alſo publiſhed, with his initials, J. H. two ſmall volumes of "Eſſays, Moral, Religious, and Miſcellaneous, with a Tranſlation, in Proſe, of Mr. Brown's Latin Poem on the Immortality of the Soul." He alſo communicated to the public, through the medium of the Gentleman's Magazine, for 1769, "A natural and obvious Manner of conſtructing Sun-dials, deduced from the Situation and Motion of the Earth with reſpect to the Sun;" and in that for 1778, his remarks on colouring ſuggeſted, by way of a note on the "Epiſtle to an eminent Painter." Of his numerous portraits, during an extenſive practice of 46 years, ſeveral of which have been engraved, our limits will not allow us to give a minute detail. Some of the moſt capital of his performances in the hiſtorical branch were "Hagar and Iſhmael," a preſent to the Foundling hoſpital; "The good Samaritan;" "The finding of Moſes;" "The Harlowe Family," as deſcribed in Clariſſa; "Clariſſa;" "The Clementina" of Grandiſon; and the "Queen-mother of Edward IV. with her younger Son, &c. in Weſtminſter Abbey." In 1761 he retired from buſineſs, and in 1762 removed to the houſe of the Rev. Mr. Duncombe, who had married his daughter, at Canterbury, where he paſſed the remainder of his life, without ever reviſiting the metropolis. His mind, however, retained its powers of activity, and he was always uſefully as well as agreeably employed. A ſtrong conſtitution, habitual temperance, and conſtant attention to his health in youth, as well as age, prolonged his life, and preſerved his faculties to his 88th year; and he may be ſaid to have fallen aſleep on March 3, 1780. He was interred in the ſouth iſle of Canterbury cathedral, leaving one ſon, Anthony, educated in his own profeſſion, and a daughter, married to Mr. Duncombe. His talents and character will be reſpected by all who have a taſte for the arts and for principles of religious virtue, exemplified by a correſponding practice. One of his grandſons, Anthony Highmore, eſq. is now an eminent ſolicitor in London, and traces the footſteps of his anceſtor by his general conduct.

HIGHMORE, NATHANIEL, a phyſician and anatomiſt, was born at Fordingbridge, in Hampſhire, on the 6th of February 1613. He went to Oxford, where he was elected a ſcholar of Trinity College in 1632, and took his degree of M.D. in 1642. He ſettled at Sherborne, in Dorſetſhire, where he obtained a conſiderable ſhare of reputation in the practice of his profeſſion. He died on the 21ſt of March 1684, at the age of 71, and was buried at Candlepurſe in that county, of which place his father had been rector. Dr. Highmore, though with limited opportunities of diſſection, purſued the ſtudy of anatomy with zeal, and his name has remained attached to ſome diſcoveries not ſtrictly his; as that of the *antrum maxillare*, of which he obtained a view from an extracted tooth, which ſuggeſted the operation of piercing into it from the jaw, practiſed by Cowper. Caſſerius had mentioned the cavity under the name of *antrum genæ*. His principal work is, "Corporis humani Diſquiſitio Anatomica," printed at the Hague in 1651, in folio. The deſcriptions in this work are too brief, and the reaſonings unneceſſarily copious; and the figures chiefly copied from Veſalius. His other writings are, "Exercitationes duæ, quarum prior de paſſione hyſtericâ, altera de affectione hypochondriaca," Oxon. 1660. Theſe diſſertations abound with phyſiological remarks and hypotheſes, ſome of which are ingenious, but were attacked by Dr. Willis. In conſequence of this, Highmore printed, in 1670, "De hyſterica et hypochondriaca paſſione, Reſponſio Epiſtolaris ad Williſium." He likewiſe publiſhed "A Hiſtory of Generation," 8vo. 1651, which has ſome good figures of the embryo in the egg, during the ſtate of incubation. Gen. Biog. Eloy. Dict. Hiſt.

HIGHNESS, a quality, or title of honour, given to princes.

The kings of England and Spain had formerly no other title but that of highneſs; the firſt, till the time of Henry VIII. and the ſecond, till that of Charles V. See KING.

The petty princes of Italy began firſt to be complimented with the title of highneſs in the year 1630. And the duke of Orleans aſſumed the title of royal highneſs, in the year 1631, to diſtinguiſh himſelf from the other princes of France.

The duke of Savoy, afterward king of Sardinia, bore the title of royal highneſs, on account of his pretenſions to the kingdom of Cyprus. It is ſaid that the duke only took the title of royal highneſs, to put himſelf above the duke of Florence, who was called *great duke*; but the great duke has ſince aſſumed the title of royal highneſs, to put himſelf on a level with the duke of Savoy.

The prince of Condé firſt took the title of moſt ſerene highneſs, leaving that of ſimple highneſs to the natural princes.

At preſent, all the ſons of crowned heads are ſtyled royal highneſs, as the electors of Germany are called electoral highneſs.

HIGHWORTH, in *Geography*, a market town and pariſh in a hundred of the ſame name, and county of Wilts, England, is ſituated on a hill, whence its name appears to have been derived. It was formerly called a borough, but at preſent has no other privileges than the right of electing a mayor and aldermen, who poſſeſs ſome nominal powers. The pariſh of Highworth conſiſts of about 2000 acres of land, and compriſes ſeveral chapelries and hamlets. The principal of theſe is Seven-hampton, a chapelry annexed to this vicarage. In this the Warneford family long had a ſeat; and built for themſelves a private oratory, or a monumental chapel, on the ſouth ſide of Highworth church, wherein there are ſome pieces of ancient armour. In the ſame church is a mural tablet to the memory of ſir John Croft, bart. of Dunſtan Park, Berkſhire, who died in 1797. Againſt one of the pillars is a table, containing a long liſt of charitable donations to the poor. The petty ſeſſions, for the diviſion of Highworth, are held at this town, and a fixed pillory is preſerved in the market place. Here are a ſmall weekly market on Wedneſdays, and three annual fairs. About three miles W. of the town, in the tything of Broad-Blunſden, is an ancient encampment, on an eminence called Caſtle Hill, near which a Roman road from Spinæ to Corinium, paſſed. Two miles eaſtward of Highworth is Coleſhill-houſe, hill-houſe, the ſeat of lord Folkſtone. The houſe was built from the deſigns of Inigo Jones. Highworth contained 254 houſes in the year 1801, and 1493 inhabitants. Britton's Beauties of Wiltſhire.

HIGLER is a name frequently mentioned in our ſtatutes for a perſon who carries from door to door, and ſells by retail ſmall articles of proviſions, &c. They are laid under various reſtraints by the ſtatute laws. See Hawkers.

HIGUERA, in *Geography*, a town of Spain, in Eſtremadura; 12 miles north of Xeres de los Caballeros.—Alſo, a town of Mexico, in the province of Cinaloa; 28 miles E. of Cinaloa.

Higuera, *Cape*, a cape of Spain, on the coaſt of Biſcay. N. lat. 43° 22′. W. long. 1° 55′.

HIGUEY, or Yguey, *Alta Grecia*, a city in the S.E. part of the Spaniſh diviſion of St. Domingo, the moſt eaſterly of all the ſettlements in the iſland, celebrated formerly for its fertility, and for the quantity of ſugar which it produced. It has now only about 500 inhabitants, and is diſtant about 40 leagues E. of St. Domingo.

HIHA, a town of Abyſſinia, 40 miles E. of Axum.

HIJAR, or Ixar, a town of Spain, in Aragon; 25 miles S.E. of Saragoſſa.

HIIS Testibus, *q. d. theſe witneſſes*, in *Law*, a phraſe anciently added in the end of a deed, written in the ſame hand with the deed; upon which the witneſſes were called, the deed read, and then their names entered. See Witness.

The clauſe of *hiis teſtibus*, in ſubjects deeds, continued till, and in, the reign of Henry VIII. but it is now omitted. Coke on Littleton.

HIKE, in *Rural Economy*, a term implying to ſtrike with the horn, in the manner cattle often do.

HILARIA, in *Antiquity*, feaſts celebrated every year, by the Romans, on the eighth of the calends of April, or the 25th of March, in honour of Cybele, the mother of the gods: as is obſerved by Macrobius, lib. i. cap. 10. and Lampridius, in his life of Alexander Severus.

The hilaria were ſolemnized with great pomp and rejoicing. Every perſon dreſſed himſelf as he pleaſed, and took the marks or badges of whatever dignity or quality he had a fancy for. The ſtatue of the goddeſs was carried in proceſſion through the ſtreets of the city, accompanied by multitudes in the moſt ſplendid attire. The day before the feſtival was ſpent in tears and mourning. Cybele repreſented the earth, which, at this time of the year, begins to feel the kindly warmth of the ſpring; ſo that this ſudden tranſition from ſorrow to joy was an emblem of the viciſſitude of the ſeaſons, which ſucceeded one another.

The Romans took this feaſt originally from the Greeks, who called it αναϐασις, *q. d. aſcenſus*; the eve of that day they ſpent in tears and lamentations, and thence denominated it καταϐασις, *deſcenſus*.

Afterwards the Greeks took the name ἱλαρια, from the Romans; as appears from Photius, in his extract of the life of the philoſopher Iſidore.

Caſaubon maintains, that beſide this particular ſignification, the word hilaria was alſo a general name for any joyful or feſtival day, whether public, or private and domeſtic. But Salmaſius does not allow of this.

Triſtan, tom. i. p. 482, diſtinguiſhes between hilaria and hilariæ. The former, according to him, were public rejoicings; and the latter, prayers made in conſequence thereof; or even of any private feaſt or rejoicing, as a marriage, &c. The public laſted ſeveral days, during which all mourning and funeral ceremonies were ſuſpended.

HILARION, in *Biography*, the founder of the monaſtic life in Paleſtine, was born at Gaza, in 291, of a Pagan family, but quitted the errors of his fathers and embraced Chriſtianity. He diſtributed all his property among the poor, and withdrew into a deſert, where he paſſed his time in ſolitude and devotion, and acquired a high character for piety and devotion. The number of his diſciples ſoon became very numerous, whom he diſtributed into different eſtabliſhments throughout Paleſtine and Syria, over which he exerciſed a moſt vigilant ſuperintendance. He died in the year 371, at the iſland of Cyprus.

HILARIUSE, Joseph, an eminent antiquary and medalliſt, was born at Enzesfield, in Lower Auſtria, in 1737. He was educated among the Jeſuits, and afterwards became an eminent teacher of grammar and rhetoric at Vienna, of which college he was appointed præfectus rei nummariæ. In the year 1770 he renounced the vows of his order, and in a ſhort time after was appointed profeſſor and director of the Imperial cabinet of ancient coins. He was likewiſe dean of philoſophy and the fine arts. He died in 1798, leaving behind him a high character for extenſive knowledge, irreproachable morals, and great wit.

HILARODI, Ἱλαρῳδοι, compounded of ἱλαρος, *joyful*, and ωδη, *ſong*, in the *Ancient Muſic* and *Poetry*, a ſort of poets among the Greeks, who went about ſinging little merry diverting poems or ſongs; though ſomewhat graver than the Ionic pieces

The hilarodi appeared dreſſed in white, and were crowned with gold. At firſt they wore ſhoes; but afterwards they aſſumed the crepida, which was only a ſoal, tied over the foot with ſtraps.

They did not ſing alone, but had always a little boy or girl to attend them, playing on ſome inſtrument.

From the ſtreets they were at length introduced into the tragedy, as the magodi were into comedy.

The hilarodi were afterwards called Simodi, from a poet named Simus, who excelled in this kind of poetry.

HILARODIA, a poem, or compoſition in verſe, made or ſung by a kind of rhapſodiſts, called hilarodi.

HILARO-TRAGŒDIA, a dramatic performance, partly tragic or ſerious, and partly comic or merry.

Scaliger holds, the hilaro-tragœdia and hilarodia to be one and the ſame thing. Others rather take the hilaro-tragœdia to have been pretty nearly what we call a tragi-comedy. Others, again, will have it to have been a pure tragedy, only terminating with a happy cataſtrophe, which brings the hero out of a wretched into a fortunate ſtate. But the firſt opinion ſeems the moſt probable, and the beſt warranted.

Suidas mentions one Rhinthon, a comic poet of Tarentum, as the inventor of this kind of poem: whence it was alſo called *Rhinthonica fabula*.

HILARY, in *Biography*, was biſhop of Poictiers in Aquitania, and flouriſhed about the year 354. He is placed by Jerom among his illuſtrious men, from whom we learn that, after his converſion to Chriſtianity from the Pagan religion, he became a zealous champion for what was then deemed the orthodox faith againſt the Arians, labouring to confute them by his writings, and condemning their opinions by the councils which he cauſed to be aſſembled at Poictiers. His twelve books on the Trinity, his treatiſe concerning ſynods addreſſed to the biſhop of the Gauls, and his Commentaries upon the Pſalms, the Goſpel of St. Matthew, the Book of Job, and the Canticles, are mentioned by Jerom as his principal works. Of theſe the laſt and beſt edition is that of the Benedictines at Paris, in 1693. Hilary died at Poictiers, in the reign of Valentinian and Valens, about the year 366. In his Prologue to the Commentaries on the Pſalms, Hilary gives a catalogue of the books of the Old Teſtament;

he appears to have received the Epiſtle to the Hebrews, though it was not univerſally received by the Latin Chriſtians, and he often quotes the book of the Revelation, and aſcribes it to John the apoſtle.

HILARY, deacon of Rome, was born in Sardinia, and appointed to his office about the year 354. He is mentioned by Jerom in his account of eccleſiaſtical writers, who repreſents him as a zealous Homoüſian, and afterwards a rigid Luciferian; and he pleaſantly calls him another Deucalion, as if he would bring again an univerſal deluge on the world, becauſe he was for rebaptiſing Arians, and other heretics, when they came over to the church. Differing from other Chriſtians in this particular, he ſeparated from the church, and wrote treatiſes in favour of his opinion. Cave aſcribes to Hilary the "Commentary upon Thirteen of St. Paul's Epiſtles," uſually joined with St. Ambroſe's works, which he ſuppoſes to have been written before the year 384; and this learned writer conſiders him alſo as the author of "Quæſtiones in Vetus et Novum Teſtamentum," written about 370, and uſually joined with St. Auguſtine's works. Several other writers concur with Cave in aſcribing the firſt work to Hilary, but differ with regard to the latter; and indeed both works are much interpolated. Hilary, conſidered as the author of the Commentaries, &c. quotes moſt books of the Old and New Teſtament. Lardner's Works, vol. iv.

HILARY, a ſaint in the Roman calendar, born at Arles in 401, of noble and very opulent parents, was diſtinguiſhed while very young by his proficiency in knowledge and the brilliancy of his talents. Having been perſuaded by his relation Honoratus, to devote himſelf to the religious life, he ſold his patrimonial eſtate, diſtributed the money ariſing therefrom among the poor, and entered into a monaſtery, where he ſubjected himſelf to the auſterities of the cloiſter, and applied with diligence to theological ſtudies. He was promoted to the ſee of Arles in the year 429, which forced him from his cloiſter into the more active ſcenes of life. Having entered upon the epiſcopal duties of his ſee, he diſcharged them with uncommon zeal and aſſiduity, ſetting before his flock an illuſtrious example of the virtues which he recommended to their practice. He was an eloquent and impreſſive preacher, and freely reproved the vices of the great, without being moved by a dread of their diſpleaſure. He preſided in a council at Orleans in 441, and died in 449, at the early age of 49. His works are (1) "Homilies;" (2) "The Life of St. Honoratus;" (3) "An heroical Poem on the early part of the Book of Geneſis;" and "A ſhort Letter to Eucherius biſhop of Lyons," which may be found in the ſeventh volume of the Biblioth. Patrum. Moreri.

HILARY, or HILARIUS, pope, was a native of Sardinia, and while he was only a deacon in the church, he was ſent, with the character of pope Leo's legate, à latere, to aſſiſt at the general council ſummoned to meet at Epheſus, in the year 449, for the purpoſe of deciding on the queſtions at iſſue between Eutyches and Flavianus, patriarch of Conſtantinople. In that council he embraced the intereſts of Flavianus, and proteſted with great firmneſs and intrepidity againſt the ſentence of his depoſition. His conduct on this occaſion led him into difficulties, and withdrawing unexpectedly from Epheſus he travelled by night, and in roads not uſually frequented, till he thought he had perfectly eſcaped the power of Dioſcorus, who had preſided at the council. After this he was raiſed to the archdeaconry of the Roman church, and from this ſtation he was elevated, in the year 461, to the papal dignity. No ſooner was he ordained, than he devoted his principal care to the extenſion of the power and authority of the Roman ſee. In the year 462 he held a council at Rome, at which he enacted ſuch decreees as ſuited his own views, having met with no oppoſition from the biſhops who were aſſembled at this time. So ſubmiſſive were the prelates to the edicts of Hilarius, that he had an opportunity of extending his own authority every day, and making them entirely dependent upon him, by favouring the pretenſions ſometimes of one and ſometimes of another. In the year 465, an opportunity offered of attempting to extend the papal authority over the churches of Spain, and he ſent a ſub-deacon into that country to ſee that his pleaſure ſhould be carried into effect. In their letters to the pope, the Spaniſh prelates had been induced to expreſs the greateſt reſpect for the apoſtolic ſee, and to acknowledge the biſhop of Rome for the ſucceſſor of St. Peter, "whoſe primacy ought to be loved and feared by all." Hilary, in the year 467, violently oppoſed a deſign of the new emperor Anthemius, to grant leave to the ſeveral ſects of Chriſtians to aſſemble publicly by themſelves, to own openly the doctrines which they held, and to ſerve God in the manner which they believed moſt agreeable to him. This noble deſign was ſuggeſted to the emperor by one of his favourites, who was friendly to the rights of conſcience; but the pope, to whoſe authority ſuch a meaſure muſt ultimately prove fatal, obliged the emperor to relinquiſh his deſign, and to take an oath that he would ſuffer no ſchiſmatical aſſemblies to be held at Rome. Hilary died in the courſe of the ſame year, having preſided at the head of the church nearly ſix years. Twelve of his letters may be found in the fourth volume of the "Collect. Concil." Moreri.

HILARY, or *Helier*, St. in *Geography*, the principal town in the iſland of Jerſey, conſiſts of ſeveral ſtreets. It is protected from the north winds by high grounds, and is open to the ſea on the ſouth-weſt. Between the town and the hills is a tract of fine meadows, watered by a rivulet which deſcends from the hills, and paſſing in different channels through the town, is a pleaſant and beneficial appendage to the place. Near the centre of the town is a large quadrangular area, ſurrounded by reſpectable houſes, among which is the court-houſe, or ſeat of juſtice, called La Cohue Royale. St. Hilary is moſtly occupied by merchants, ſhopkeepers, artificers, and dealers in liquor. For the accommodation of perſons attending the market, which is kept every Saturday, here are different buildings and places adapted to their reſpective purſuits. For the dealers in corn there is a building, ſupported by pillars, and ſhambles for the butchers. The parochial church is large and commodious, and the ſervice is alternately performed in French and Engliſh. Among the monuments it contains, is one to the memory of major Pearſon, who was killed in defending the town in Jan. 6, 1781, when a party of French, under baron de Rullicourt, had invaded the iſland. The garriſon and the lieutenant-governor had capitulated, but the major, with a few ſoldiers, rallied, and, though the former loſt his life, he was the cauſe of ſaving the iſland; for the French commander was killed and his ſoldiers taken priſoners. The harbour is protected by a ſtrong caſtle or fort, the reſidence of the governor, or lieutenant-governor of the iſland. It occupies the whole of a ſmall iſland, at the diſtance of about half a mile from the town, and is acceſſible by a cauſeway at low-water. On the top of a high rocky hill, near the town, was diſcovered, in the year 1785, a maſs of ſtones ranged in a circular form, ſome perpendicular, and others lying horizontally on the former. It was called a Druidical temple, and was completely covered with earth at the time of diſcovery. General Conway, then governor, had the ſtones removed to Park Place, in Berkſhire, where they were again erected and diſpoſed in their original form. The circle is 66 feet in circumference, and conſiſts of forty-five ſtones, ſome of which are ſeven feet in height. (See JERSEY.) Gough's Camden, and Fall's Account of Jerſey.

HILARY *Term*, in *Law*. See TERM.

HILAUI, or UABE, in *Geography*, a town of Peru, in the dioceſe of La Paz; 25 S.W. of Chicuito.

HILAY, a ſmall iſland in the Pacific ocean, near the coaſt of Peru; S. lat. 16° 50′.

HILBERG, a town of Norway, in the dioceſe of Drontheim; 44 miles W. of Romſdal.

HILBURGHAUSEN, a town of Germany, and capital of a principality, belonging to a branch of the houſe of Saxony, called Saxe-Hilburghauſen, ſeparated from Coburg in the year 1672; the town is ſeated on the Werra, and is the uſual reſidence of the duke; 32 miles E. of Erfurt. N. lat. 50° 19′. E. long. 10° 55′.

HILCONAUR, a town of Hindooſtan, in Bednore; 10 miles N.N.E. of Simogu.

HILDANUS, in *Biography*. See WILLIAM FABRICIUS.

HILDEGARDE, a female ſaint in the Roman calendar, was born in the county of Spanheim, in the Palatinate, in the year 1098. She was at an early period devoted to a religious life, and in proceſs of time was choſen abbeſs of St. Rupert's Mount, near Bingen, on the Rhine. Here ſhe acquired a character for a high degree of ſanctity, and aſſumed the pretenſions and powers of a propheteſs, divinely inſtructed, in dreams and viſions, to announce to mankind the will of God. Her claims were well adapted to the dark and ſuperſtitious age in which ſhe lived, and occaſioned an immenſe reſort to her of credulous perſons of all ranks, who conſulted her as an oracle, and reſpected her deciſions as the commands of the moſt high God. Several of the popes, to further their own objects, pretended to credit her miraculous powers, and were among the number of her correſpondents, as were the archbiſhops of Mentz, Cologne, Treves, and other prelates on the continent. To all their letters ſhe returned anſwers in a myſtical and prophetical ſtyle. She died in the year 1180, leaving behind her many works which were at the time in high eſtimation; of theſe a part of the following are now to be met with in the Biblioth. Patrum: "Scivias, ſeu Viſionum ſive Revelationum, lib. iii. 1513, fol.;" "Vita S. Roberti Confeſſoris Bingiorum Ducis;" "Epiſtolæ, xxxviii.;" "Quæſtiones Variæ in Scrip. Sac.;" and "Expoſitio Regulæ S. Benedicti." Moreri.

HILDESHEIM, in *Geography*, lately an eccleſiaſtical ſtate of Germany and a princely biſhopric, bounded on the N. by the duchy of Luneburg, on the E. by the duchy of Wolfenbuttle, and the principality of Halberſtadt, on the S. by the principality of Calenberg, and on the W. by Calenberg, and extending from E. to W. about 40 miles, and 32 from N. to S. The ſoil of the greateſt part of this ſtate is fit for tillage, and produces corn, flax, hops, and legumes in abundance; but its breed of cattle, horſes, ſheep, and ſwine is merely ſufficient for the conſumption of the inhabitants. The ſouth part is hilly, and is for the moſt part covered with oak, beech, aſh, and birch, and where it is deſtitute of wood, it has mines of iron. This ſtate contains 12 towns, the chief of which are Hildeſheim and Paina, and 248 villages: its principal rivers are the Leine, Innerſee, and Oeker. The biſhopric was founded by Charlemagne in 822. The inhabitants are partly Lutherans and partly Roman Catholics. In 1803 this biſhopric was ſeculariſed, and given among the indemnities to the king of Pruſſia, but in 1 07, after the peace of Tilſit, it was transferred to the new kingdom of Weſtphalia.

HILDESHEIM, formerly one of the Hanſe-towns, a city of Weſtphalia, to whoſe ſovereign it was ſurrendered in 1807, ſituated near the Innerſee, is an old-faſhioned, large, irregular town, divided into the New and Old towns, which were united in 1583. The magiſtrate, and moſt of the inhabitants, are Lutherans; the reſt are Roman Catholics, who are in poſſeſſion of the cathedral; but the Proteſtants have eight churches; 26 miles W.S.W. of Brunſwick. N. lat. 52° 12′. E. long. 10°.

HILDESLEY, MARK, in *Biography*, an Engliſh prelate, was born at Markſton, in Kent, in 1698, and educated at the Charter Houſe, from whence he was ſent to Cambridge, where he was choſen fellow, in the year 1723. Being admitted into holy orders, he was appointed one of the preachers at Whitehall, and was afterwards made chaplain to lords Bolingbroke and Cobham. In 1731 he obtained the living of Hitchin in Herefordſhire, and ſhortly after he was inducted to the living of Holwell in Bedfordſhire, where he diſtinguiſhed himſelf as a diligent pariſh prieſt. On the death of Dr. Wilſon, biſhop of Sodor and Man, he was appointed his ſucceſſor, but before his conſecration he was created doctor of divinity by archbiſhop Herring. During the period of ſeventeen years, in which Dr. Hildeſley preſided over the dioceſe of Man, he took every method in his power to promote the intereſts of the people over whom he was placed. He procured an entire tranſlation of the Old and New Teſtament to be made into the Manks language. This work had been begun by his predeceſſor biſhop Wilſon, who, at his own expence, had printed the goſpel of St. Matthew, and had prepared for the preſs the other evangeliſts, and the Acts of the Apoſtles. Dr. Hildeſley was enabled to indulge his own liberal ſpirit in this deſign, as well by the aſſiſtance which he received from many perſons of rank and eminence, as by an income which he derived from the maſterſhip of Sherburn hoſpital, preſented to him by the biſhop of Durham, and which he held with the biſhopric till his death. The worthy prelate had this work ſo much at heart, that he frequently ſaid, with the feelings of an humble but anxious mind, "he only wiſhed to ſee it finiſhed, and that then he ſhould be happy, die when he would." On the 28th of November 1772, he received the laſt part of the tranſlation, when in the preſence of an affectionate and congratulating family, he ſung with pious emphaſis, "Nunc Domine Dimittis!" On the next day he officiated in his own chapel, and preached with unuſual energy on the uncertainty of human life, and on the following day he was attacked by a ſtroke of apoplexy, which ſoon deprived him of his intellectual powers, and proved fatal to him in a very few days, when he was in the ſeventy-fourth year of his age. Gen. Biog.

HILELA, or HALEF, in *Geography*, a town of Africa, in the country of Sugulmeſſa.

HILL, JOSEPH, in *Biography*, was born at Bromley, in Yorkſhire, in 1625, and received his college education at St. John's, Cambridge, after which he became fellow of Magdalen college, from whence, on account of his nonconformity, he was ejected in the year 1662. He died paſtor of a congregation at Rotterdam in 1707. He publiſhed an enlarged edition of Schrevelius's Greek Lexicon, and was author of "Diſſertations on the Antiquity of Temples and Churches."

HILL, AARON, an Engliſh poet, was born in London in 1685, and was left almoſt wholly unprovided before he had attained the age of fourteen, by the death of his father. He had naturally an adventurous ſpirit, and at the age of fifteen took a voyage to Conſtantinople, where his relation, lord Paget, was ambaſſador from the Engliſh nation. He was received with ſurpriſe, but treated with great kindneſs, and a tutor provided for him, under whoſe care he travelled through Paleſtine, Egypt, and various parts of the Eaſt. In 1703 he returned to his own country with lord Paget, who would have provided for him, but the death of his lordſhip deprived him of all hopes from that ſource. Some time afterwards he travelled for three years with ſir W. Wentworth on the tour of Europe. In 1709 he appeared before the public as an author, by "A Hiſtory of the Ottoman Empire," partly from materials which he collected in that country: in the ſame year he publiſhed a poem in favour of the earl of Peterborough, which introduced him to the favour of that nobleman, and to the notice of the heads of the Tory party. He now became manager of the Drury Lane theatre, for which he wrote his Elfrid, or the Fair Inconſtant. Upon ſome difference with the duke of Kent, who was lord chamberlain, Hill threw up his theatrical management, which he had conducted entirely to the ſatisfaction of the public. He was a man of warm feelings, and a good deal given to projects. He obtained a patent for extracting oil out of beech maſt, and a company of ſubſcribers was formed for the purpoſe of carrying the undertaking into effect. The trial was fairly made, but experience ſhewed the folly of the ſcheme, and after three years it was abandoned. He became maſter of the Opera houſe, and wrote for it the opera of Rinaldo, the firſt which Handel compoſed in England. About the year 1718, he publiſhed a poem, entitled the Northern Star, or a panegyric on Peter the Great, for which the empreſs Catherine ſent him a gold medal. He died in February 1750, in his ſixty-eighth year, and was interred in the cloiſters of Weſtminſter Abbey. His character has been given by one of his biographers in a few words; "he was a great ſchemer as well as a poet; but as in the former character he never acquired riches, ſo in the latter he never roſe above mediocrity." His works were publiſhed in four volumes 8vo. after his death. He was a man of active and extenſive benevolence: he was kind and affectionate in all the relations of ſociety, and few men have been more beloved. Of his various plays, two of them, *viz.* Zara and Merope, are ſtill occaſionally brought forward with applauſe; but a dramatic writer and poet cannot claim a high rank, whoſe beſt pieces are tranſlations.

Hill, in *Geology*, a leſs eminence or elevation on the ſurface of the earth, with reſpect to height and extent, than a *mountain*; which ſee.

To find the height of a hill, ſee the latter part of the article Levelling.

On the *ſtructure* of hills it may be proper to obſerve, that the far greater part of the hills on the ſurface of the earth are occaſioned by the *Excavation* of an adjacent valley, (ſee that article,) and ſuch hills have the edges of the ſtrata compoſing them only viſible towards or in the ſlopes of ſuch vallies; another claſs of hills, and which frequently form ridges of conſiderable length, is occaſioned by the out-crop, baſſet, or *Ending* of rocks and other thick and hard ſtrata, (ſee that article), and ſuch hills only exhibit the edges of their ſtrata on one ſide, which is more commonly their W. or N.W. ſide than any other, and which Mr. A. Aikin calls their eſcarpement, facing of which there uſually is a plane or comparatively flat country: to the hills of this claſs are to be referred the edges of denudated tracts, like thoſe of chalk which ſurround the wealds of Suſſex, Kent, and Surrey, the grit-ſtone which ſurrounds the valley of Aſhover, or the central lime-hill of brick in Debyſhire, the red marle which ſurrounds the Aſhby-de-la-Zouch coal-field in Derbyſhire and Leiceſterſhire, the firſt grit rock which, like a lengthened horſe-ſhoe, ſurrounds three ſides of the great mineral lime-ſtone tract of Derbyſhire and Staffordſhire, &c.; it being extremely rare, that faults or vertical derangements, or what M. De Luc calls angular motions of the ſtrata, has occaſioned hills or cliffs. A third claſs of hills has recently been denominated *Hummocks* by Dr. W. Richardſon, (ſee that article,) and theſe are compoſed of piles of ſtrata left in the area of a ſurrounding denudation, or abruption, juſt as labourers leave dead-men or buoys in removing tracts of ground, in order for their maſters to ſee and thereby meaſure the quantity of earth which has been removed: theſe curious hills are not peculiar to the iſolated knowles of low tracts, but after the hummocks of ſtrata which have been removed for miles all around, form the higheſt points in the diſtrict. In the liſt of hills with the top ſtratum of each, which Mr. Farey has given in his Report on Derbyſhire, (ſee alſo Phil. Mag. vol. xxxvii. p. 161.) a great number of hummocks are noticed: in this claſs of hills the top ſtratum, at leaſt, has its edges on all ſides expoſed, as otherwiſe it would belong to one of the former claſſes, though frequently more edges of ſtrata are to be ſeen on one ſide than on the other, particularly if the ſtrata in the hummock have a conſiderable dip or inclination, and ſuch are called by Mr. Jameſon ſhield-formed ſtrata. (Geognoſy, vol. iii. p. 64.) Gravel or other alluvial matters are often heaped upon hills, ſo as to form caps or hummocks thereon; and ſometimes, though very rarely, hills may be found compoſed wholly of heaps or hummocks of gravel or alluvia. It remains to mention only one other claſs of hills, which are compoſed of unſtratified maſſes, like thoſe of Charnwood foreſt in Leiceſterſhire, and numerous other anomalous maſſes or nodules in the red-earth or marle of England, the limeſtone-ſhale and others of the Britiſh ſeries of ſtrata, and of other parts of the world. On the height of Britiſh hills, we muſt refer to the ample liſts given in Mr. Jameſon's Geognoſy, vol. iii. pages 313 to 320; and for the ſtrata which are found on the top of each of about 700 hills in Derbyſhire and the adjoining counties, to Farey's Derbyſhire Report, vol. i. p. 16.

Hill, in *Geography*, a town of America, in Virginia, on the Rappahannock; 17 miles N.N.W. of Urbanna.

Hill's *Bay*, a bay in Cheſapeak bay. N. lat. 37° 32′. W. long. 76° 20′.

Hill *Creek*, a river of America, which runs into the Ohio, N. lat. 38° 57′. W. long. 84° 45′.—Alſo, a river of Maryland, which runs into the Potowmack, N. lat. 39° 40′. W. long. 78° 23′.

Hill *and Trough*, in *Mining*, are uſed to denote ſtrata which alternately riſe and fall in parallel lines, ſimilar to the ſurface of ridges and furrows in ſome ploughed fields, hence called rigg and fur, or ridge and furrow, by the colliers, where the floor of their coals aſſume this ſhape, which ſometimes, though rarely, is the caſe. The floor of the fuller's-earth mine, at Hogſtyend, in Wavendon, Bucks, near Woburn, lies in ridge and furrow. The cauſe of theſe and other deviations from planes in the ſtrata, undiſturbed by faults, is deſerving of great attention from geological obſervers.

HILLARY, in *Geography*, a town of Sweden, in the province of Smaland; 42 miles S.W. of Wexio.

HILLEBECK, a town of Norway, in the dioceſe of Aggerhuus; 13 miles S.W. of Chriſtiania.

HILLEBRUN, a town of Sweden, in the province of Geſtricia; eight miles N. of Geffle.

HILLEGURRY, a town of Hindooſtan, in Bednore; 40 miles S.E. of Simogu.

HILLEL, called *Pollio* by Joſephus, in *Biography*, was one of the moſt eminent men that ever exiſted among the Jewiſh doctors, for birth, learning, authority, and poſterity. As to his birth, he was by his mother of the ſeed of David;

with regard to his learning in the Jewiſh law and traditions, the Jewiſh writers, by an unanimous ſuffrage, aſſign him the firſt rank among all the ancient doctors of their nation: as to authority, he occupied the higheſt ſtation of honour among his people during a ſucceſſion of 40 years: for ſo long he filled the chair of preſident of the Sanhedrim at Jeruſalem, with ſingular reputation and honour, rivalling in wiſdom and juſtice his remote predeceſſor Simon the Juſt: and with reſpect to his poſterity, he was ſucceeded in his high office, as well as in his learning and general celebrity, by his lineal deſcendants to the tenth generation. His immediate ſucceſſor was his ſon Simeon, who is ſuppoſed to have been the ſame who took Chriſt in his arms, on his being firſt preſented in the temple, and ſung over him "Nunc dimittis," (Luke, ii.) After Simeon ſucceeded Gamaliel his ſon, who preſided in the Sanhedrim, when Peter and the apoſtles were called before that council (Acts, v. 34.), and was the ſame at whoſe feet Paul was bred up in the ſect and learning of the Phariſees (Acts, xxii. 3.) He was ſucceeded by his ſon Simeon, who periſhed in the deſtruction of Jeruſalem. At a further diſtance in this line of deſcent was R. Judah Hakkadoſh, who is ſaid to have compoſed the Miſhna, and whoſe name on that account has been held in high veneration among the Jewiſh people. In the progreſſion of this deſcent was Hillel the ſecond, who was the compiler of the preſent calendar of the Jews. Hillel, as we have ſaid, was deſcended on the ſide of his mother from the family of David, but by his father he was of the tribe of Benjamin. He was born in Babylon, and at the age of 40 years he came to Jeruſalem, where he devoted himſelf to the ſtudy of the law, and attained to ſuch eminence, that after 40 years he became preſident of the Sanhedrim, being then 80 years old, and continued in that office for 40 years, ſo that according to this account he lived 120 years. He was the founder of a famous ſchool at Jeruſalem, in which he educated above a thouſand ſcholars in the knowledge of the law. Among his diſciples, Shammai was the moſt celebrated, and came neareſt to his maſter in learning of all the Miſhnical doctors: and accordingly he was appointed vice-preſident of the Sanhedrim. When Herod took poſſeſſion of Jeruſalem, in the firſt year of his reign, (A.D. 27.) he put to death all the counſellors of the great Sanhedrim, except Pollio and Sameas, *i. e.* Hillel and Shammai. When the latter became vice-preſident of the former, he did not always concur in opinion with his maſter. There were many points in which they differed; and this difference produced diviſions and quarrels between their ſcholars, ſo that two parties ſubſiſted among the Phariſees of that period; and the contention proceeded ſo far, that ſeveral were ſlain on both ſides. At length, however, the ſchool of Hillel prevailed againſt that of Shammai; the determination, as it is ſaid, having been given for the former by a "Bath Kol," that is, by a voice pretended to have come from heaven, and by this fiction all diſturbances among them were appeaſed. Hillel was of a mild and peaceable temper, but Shammai was of an angry and violent ſpirit; and hence proceeded moſt of the diſputes and conflicts that occurred between the ſchools of theſe two great doctors, of which Shammai being at length weary, conſented to terminate them by the fiction we have now mentioned. Prid. Conn. vol. iv.

HILLER, Matthew, a learned German divine of the Lutheran perſuaſion, was born at Stuttgard in the year 1646. He finiſhed his ſtudies at Tubingen, where he took the degree of M. A. in 1669. He obtained ſome church preferment, and was profeſſor of logic and metaphyſics at Tubingen, and in 1692 he was appointed to the Hebrew profeſſorſhip. After this he was created profeſſor in ordinary of the Greek and oriental languages. He died in 1725, at the age of 79 years. He was author of "Sciagraphia Grammaticæ Hebrææ," and various other works.

Hiller, an ingenious and popular compoſer of comic operas at Leipſic, in the German language, the airs in which were in general favour among the lovers of ſimplicity and unlearned muſic, 30 years ago.

This worthy profeſſor is a candid critic and biographer, and has been the careful editor of innumerable curious ancient and modern muſical productions.

HILLEROD, in *Geography*, a town of Denmark, in the iſland of Zealand; burnt down in 1733, and rebuilt in the following year; 14 miles N.N.W. of Copenhagen.

HILLIA, in *Botany*, is a genus named by Jacquin, in honour of the celebrated ſir John Hill, M. D. the author of various books on the ſubject of natural hiſtory.—Jacq Amer. 96. t. 66. Linn. Gen. 175. Schreb. 233. Willd. Sp. Pl. v. 2. 239. Swartz. Obſ. Bot. 134. Mart. Mill. Dict. v. 2. Juſſ. 202. Lamarck. Illuſtr. t. 257.—Claſs and order, *Hexandria Monogynia*. Nat. Ord. *Rubiaceæ*, Juſſ.

Gen. Ch. *Cal.* Perianth ſuperior, of ſix oblong, acute, erect leaves. *Cor.* of one petal; tube cylindrical, ſix-furrowed, very long; limb in ſix oblong, flat, deep ſegments. *Stam.* Filaments ſix, very ſhort; anthers oblong, erect, within the throat of the corolla. *Piſt.* Germen inferior, oblong, imperfectly hexagonal; ſtyle thread-ſhaped, the length of the tube; ſtigma capitate. *Peric.* Capſule oblong, compreſſed, of two cells. *Seeds* numerous, very ſmall, pappoſe, affixed to the linear receptacle.

Eſſ. Ch. Calyx ſuperior, of ſix leaves. Corolla ſix-cleft, very long. Berry inferior, with two cells and many ſeeds.

Obſ. Six little leaves ſtand under the germen, (within the two larger bracteas,) which Swartz conſiders as an inferior calyx, but this appears to us ſo paradoxical that we prefer calling them bracteas.

1. *H. longiflora.* Swartz. Prod. 58. Curt. Bot. Mag. t. 721. Andr. Bot. Repoſ. t. 145. (H. paraſitica; Linn. Sp. Pl. 1662.)—"Corolla of ſix lanceolate, revolute ſegments. Leaves ovate, acute." A native of moiſt ſhrubby places on the mountains of Jamaica, flowering in the ſummer. The plant is not ſtrictly paraſitical, though its roots creep amongſt the moſſy trunks and branches of old trees. Indeed the name *paraſitica* has been ſuppoſed to have been beſtowed on this plant in alluſion to the literary character of the author, after whom the genus is named. It is a *ſhrub* about a fathom high, branching and ſmooth, with a ſhining, cinereous *bark*. *Leaves* oppoſite, ſpreading, entire, ſcarcely nervoſe, without veins; ſtanding on round, ſmooth, footſtalks. *Flowers* terminal, ſeſſile, ſolitary, very long, white, and extremely fragrant; outer bracteas two, very large, tube of the corolla three or four inches long; anthers white. Stigma bifid, dark green.

2. *H. tetrandra.* Swartz. Prod. 58. Ind. Occ. v. 1. 630.—"Corolla of four ovate ſegments. Stamens four. Leaves obovate." Habitat the ſame as that of the laſt ſpecies. It flowers in Auguſt.—A *ſhrub*, three or four feet high. *Roots* creeping, and throwing out long fibres. *Stem* looſely branched, ſmooth. *Leaves* oppoſite, wedge-ſhaped at the baſe, ſomewhat fleſhy, of a bright green. *Flowers* terminal and axillary, ſeſſile, ſolitary, yellowiſh-white.

Theſe are the only two ſpecies known to us, and indeed the latter is adopted entirely on the authority of Swartz.

HILLIARD, Nicholas, in *Biography*, a portrait-painter, who ſtudied and imitated the works of Hans Holbein. He was the ſon of Nicholas Hilliard, a tradeſman at Exeter, and was born in that city in 1547. He had the honour of painting the two rival queens, Elizabeth and Mary, queen of Scotland. He never obtained the ſolidity and truth of Holbein in his works; his colour is weaker, and his drawing not ſo free nor true; yet he wrought with great neatneſs, enriched his pictures with pearls and jewels, touched with great delicacy and ſpirit; and the hair and beards of his portraits are painted in fine lines, and not, like Holbein's, ſoft and broad. He was very much employed by the nobility and gentry, and was admired and highly prized in his time. Enjoying his reputation to the age of 72, he died in 1619.

HILLIGENHAVEN, in *Geography*, a town of the duchy of Holſtein, ſituated on the Baltic; 37 miles N. of Lubeck.

HILLOCK, a name often applied to a ſmall ſort of hill, as well as to little riſings occaſionally met with in ſward lands, that are cauſed by ants and other animals. See Mount.

Hillock-*ore*, in *Mining*, is a bad ſort of ſmitham ore, which is dreſſed from the refuſe vein-ſtuff on the mine-hillocks in Derbyſhire, and is ſometimes called pippin ore.

Hillocks, are the conical heaps of rubbiſh drawn from the lead-mines, and which uſually ſurround the tops of the ſhafts; the following mines in Derbyſhire have prodigious large hillocks of feaigh, or white vein-ſtuff, *viz.* Bondoghole, in Middleton, by Wirkſworth; Gang, in Cromford; Gregory, in Overton; Hill-top, in Middleton, by Weſt Hucklow-edge, in Great Hucklow; Moſs-rake, in Bradwell; Samuel, on Middleton moor, near Wirkſworth, &c.; ſee Mr. Farey's liſt of mines, in his Report on Derbyſhire, vol. i. The refuſe of mines, or hillock-ſtuff, poiſons fowls kept on or near it, by the ſmall particles of lead-ore which they pick up along with their food.

HILLOCKY, a term ſignifying full of ant-hills.

HILLS, *Lake of the*, in *Geography*, a lake of North America, N. lat. 58° 36′, into which the Elk river diſcharges itſelf. See Athabasca and Chepewyan.

HILLSBOROUGH, a market and poſt-town in the county of Down, province of Ulſter, Ireland. It is a well built and thriving town, the property of the marquis of Downſhire, who has a houſe in it. There is a magnificent church, built by the late earl of Hillſborough, grand-father of the preſent marquis, to whoſe exertions the town was much indebted for its flouriſhing ſtate. It was formerly a borough which returned two members to parliament; but, like many others, loſt its privilege on the Union. The magiſtrates are a ſovereign and deputy ſovereign, and the marquis of Downſhire, who takes from it his title of earl, is hereditary conſtable of the fort. Hillſborough is 69½ miles N. by E. from Dublin, and 20 miles S.W. from Belfaſt. N. lat. 54° 26′. W. long. 6°.

Hillsborough, an iſland on the Labrador coaſt, on a bay at the head of which is Nain. N. lat. 57° 20′. W. long. 61° 20′.—Alſo, a county of America, in New Hampſhire, bounded N. by Grafton county, S. by the ſtate of Maſſachuſetts, W. by Cheſhire, and E. by Rockingham county; and containing 43,899 inhabitants, whoſe chief employment is agriculture. The chief towns are Amherſt and Hopkinton.—Alſo, a poſt-town in the before-named county, ſituated on the northern head branches of Contocook river, about eighteen or twenty miles W. of Concord; incorporated in 1772, and containing 1311 inhabitants.—Alſo, a townſhip in Somerſet county, New Jerſey, which contained, in 1790, 2201 inhabitants; 15 miles W. of Brunſwick.—Alſo, one of the middle diſtricts of North Carolina, bounded N. by the ſtate of Virginia, S. by Fayetteville diſtrict, E. by Halifax, and W. by Saliſbury, and comprehending the counties of Granville, Perſon, Caſwell, Orange, Wake, Chatham, and Randolph. It contains 80,012 inhabitants, of whom 22,198 are ſlaves. The chief town is Hillſborough.—Alſo, the town laſt-mentioned, capital of the diſtrict of its name, ſituated in Orange county, on the N. ſide of Eno river, in an elevated, fertile, and healthy country, and containing about 80 houſes, a court-houſe, a gaol, and an academy; 180 miles W.N.W. of Newbern, and 452 S.W. by S. of Philadelphia.—Alſo, a poſt-town in Loudon county, Virginia; 33 miles from Waſhington.—Alſo, a river of Eaſt Florida, which runs into the gulf of Florida, N. lat. 27° 36′. W. long. 81° 30′.—Alſo, another river of Eaſt Florida, which runs into the gulf of Mexico, N. lat. 28° 10′. W. long. 82° 30′.

Hillsborough *Bay*, a bay on the N. coaſt of the iſland of Dominica, formed at the mouth of a river of the ſame name. N. lat. 15° 42′. W. long. 62° 22′.—Alſo, a bay on the S. coaſt of the iſland of St. John, in the gulf of St. Lawrence. N. lat. 46° 10′. W. long. 62° 40′.

Hillsborough, *Cape*, a cape on the N.E. coaſt of New Holland. S. lat. 20° 56′. E. long. 148° 44′.

HILLSDALE, a poſt-town in Columbia county, New York, containing 4702 inhabitants; 15 miles E. of Hudſon city.

HILLTOWN, or Hilton, a ſmall town near the centre of Cheſter county, Pennſylvania; 28 miles W. of Philadelphia.—Alſo, a townſhip of Bucks county, in the ſame ſtate, having 1154 inhabitants.

HILLY Land, in *Agriculture*, that deſcription of ground which is much raiſed into hills. This ſort of land requires much care and attention in its cultivation, eſpecially in the ploughing, ſowing, and working of the more elevated parts. See Husbandry, Ploughing, and Tillage.

HILO, in *Geography*, a river of Chineſe Tartary, which runs into the ſea of Japan, N. lat. 42° 54′. E. long. 134° 31′.

HILONGOS, a town on the W. coaſt of the iſland of Leyta. N. lat. 10° 25′. E. long. 124° 40′.

HILPOLTSTEIN, a town of Germany, in the territory of Nuremberg; 17 miles N.N.E. of Nuremberg.—Alſo, a town of Bavaria, in the principality of Neuburg; 27 miles N. of Neuburg.

HILSAH, a town of Hindooſtan, in Bahar; 17 miles W. of Bahar. N. lat. 25° 18′. E. long. 85° 28′.

HILSBACH, a town of Germany, in the palatinate of the Rhine; 20 miles E. of Spire.

HILTERS, a town of Germany, in the biſhopric of Fulda; 14 miles E. of Fulda.

HILTON, John, in *Biography*, an Engliſh muſician and publiſher of muſic during the reigns of queen Elizabeth, James, and Charles I.; who, though he furniſhed a madrigal in the "Triumphs of Oriana," 1601, is found active as a compoſer and editor fifty years after.

He was a bachelor in muſic of the univerſity of Cambridge, organiſt of St Margaret's Weſtminſter, and alſo clerk of that pariſh. Though he began to flouriſh in the latter end of queen Elizabeth's reign, his genius for compoſition did not much expand, at leaſt publicly, during the next reign; though early in that of Charles I. he publiſhed "Fa Las" for three voices, and in 1652, an excellent collection of catches, rounds, and canons, for three and four voices, under the quaint title of "Catch that catch can;" among which there are many by himſelf, that were deſervedly admired by his cotemporaries, and which ſtill afford great pleaſure to the lovers of this ſpecies of humorous and convivial effuſions. He died during the Protectorſhip, and was buried in the cloiſter of Weſtminſter Abbey. He is ſaid to have had an anthem ſung in that church, before his body was brought out for interment; but as not only the cathedral ſervice was ſuppreſſed during this period, but the liturgy itſelf and every ſpecies of choral muſic, the fact ſeems unlikely and ill-founded.

Hilton *Head*, in *Geography*, an iſland of S. Carolina; W. and S.W. of which lie Pinckney's, Balls, Dawfuſkie's, and ſome ſmaller iſlands; and between theſe and Hilton Head are Calibogie river and ſound, which form the outlet of May and New rivers.

Hilton's *Point*, lies in Piſcataqua river, New Hampſhire, and is the ſpot where the united ſtreams of Newichawannock and Cochecho rivers meet the weſtern branch, and form the Piſcataqua. The courſe of the river, from thence to the ſea being about ſeven miles, is ſo rapid, that the water never freezes.

HILUM, in *Botany*, the *Scar* or *Eye*, is that particular part of the ſeed attached to the ſeed-veſſel, through which nouriſhment paſſes for the ſupport of the internal parts. It is extremely viſible in the bean, and as all the veſſels belonging to the ſeed are found to meet in this point, and to divaricate from it, they muſt be intimately connected with the inner ſurface of the *hilum*. This point is often ſtrongly contraſted in colour with the reſt of the ſeed, as is the caſe in *Cardioſpermum*, *Dolichos*, &c. "In deſcribing the form or various external portions of any ſeed, the *hilum* is always to be conſidered as the baſe. When the ſeed is quite ripe, the communication through this channel is interrupted: it ſeparates from the parent plant without injury, a ſcar being formed on each. Yet the *hilum* is ſo far capable of reſuming its former nature, that the juices of the earth are imbibed through it previous to germination."

HIMANGO, in *Geography*, a town of Sweden, in the government of Waſa; 25 miles N.E. of Gamla Karleby.

HIMANTIA, in *Botany*, from ἱμας, ἱμαντος, *a ſtrap or thong of leather*. Perſoon. Syn. 703.—*Cryptogamia Fungi*. Nat. Ord. *Fungi*.

Eſſ. Ch. Creeping, villous, branched and fibrous.

1. H. *domeſtica*.—Very large, browniſh, inclining to violet, ſoft, cohering into a membranous ſubſtance.

This pernicious fungus is found occaſionally in houſes, inſinuating itſelf, ſometimes to the extent of an ell, amongſt wrought wood, which it deſtroys.

2. H. *ſulphurea*.—Pale ſulphur-coloured, cottony, formed of roundiſh, entangled, branched fibres.—On the trunks of Fir-trees.

3. H. *candida*.—Paraſitic on leaves, tender, white; dilated like a feather at the top.—This is the *Byſſus candida* of Hudſon, p. 607; B. tenerrima villoſa et elegantiſſimè ramuloſa; Dill. Muſc. 7. t. 1. f. 15, A; frequent among decayed leaves, as thoſe of hawthorn, in moſſy dells in winter. It much reſembles Mr. Dillwyn's *Conferva nivea*, Syn. n. 59. t C. Perſoon mentions a larger and more unconnected variety, found on dry branches

4. H. *lateritia*. (Clavaria filiformis; Bulliard. t. 448, f. 1.)—Wavy, ſomewhat branched, unconnected, red-brown; its ſummits ſwelling, whitiſh.—Found in France, on half-rotten leaves. It is deſcribed by Bulliard as ſometimes brown, ſometimes greyiſh-brown, but moſtly of a brick colour.

5. H. *umbrina*.—Fibrous, tender, villous, dark brown.—Found rarely on dry fir wood. Diſtinct from *Rhizomorpha corticalis*.

6. H. *farinacea*.—Red brown, dry, with a whitiſh powder; its fibres depreſſed.—Found on wood and branches of trees. Ludwig.

HEMANTOPUS, *Long-legged Plover*, in *Ornithology*. See Charadrius *Himantopus*.

HIMANTOSIS, in *Surgery*, a relaxation and lengthening of the uvula, which hangs down like a thong of leather, ἱμας, from which the word is deduced, having this latter ſignification.

HIMAS, the ſame as *Himantoſis*.

HIMAUS, or Imaus, in *Geography*. See Himmaleh.

HIMERA, in *Ancient Geography*, a town of Sicily, W. of Cephalenis, at the mouth of a river of the ſame name, now called *Salſo*. It is ſaid to have been founded by a colony of Zanclians, about the year of Rome 104. It was deſtroyed by the Carthaginians under Hannibal, who took the place by aſſault, razed it to its foundation, and treated the inhabitants with great cruelty, in the year of Rome 350. Near this city were baths, called "Himeriæ Thermæ."—Alſo, a town of Libya.

HIMIELA, La, in *Geography*, a town of Spain, in the province of Jaen; 12 miles E. of Ubeda.

HIMMALEH, anciently called *Emodus*, *Himaus*, or *Imaus*, a range of mountains in Aſia, extending from the Ganges, above Sirinagur, to Caſhmere, and ſeparating Caſhmere and the dependencies of Hindooſtan from Great Thibet, and Caſhgar from Little Thibet. Himmaleh is a Sanſcrit word, which ſignifies "ſnowy;" and the ancient appellations were probably derived from this term, to which Pliny ſeems to refer, when he ſays, "Imäus, incolarum lingua nivoſum ſignificante." This ridge of mountains appears to incline, in its northern courſe, towards the continuation of Hindoo-Kho, and even to join it. Here then, we are to imagine, an extenſive tract, of a triangular form, whoſe baſe of 200 miles or more, is a line drawn from Caſhmere to the eaſtern confines of Anderab; and whoſe ſides are the continuation of Himmaleh on the E., and that of Hindoo-Kho on the W. This ſpace contains, amongſt other countries, thoſe of Little Thibet (or Balti-ſtan), and Sakita; the *Byltæ* and *Sacæ* of Ptolemy; as alſo Kuttore, which anſwers to the *Comedi* of the ſame geographer; it alſo contains the ſources of the Indus. From the deſcriptions of *Little Thibet* and *Kuttore* (which ſee) we may conclude, that this whole ſpace is mountainous, and that its general level is far elevated above the countries on either ſide of it. We have no particular information, ſays major Rennell, reſpecting the poſition of the range of mountains which forms the baſe, or ſouthern ſide of the triangle; but circumſtances lead us to conclude, that the higheſt of theſe mountains are far removed from the northern frontier of the provinces, ſubject to, or commonly regarded as a part of Hindooſtan; and that the mountains which properly conſtitute the boundary of Hindooſtan, towards Kuttore (or Caferiſtan), commence in the parallel of Caſhmere, or about 34½ degrees; and extending weſtward from that celebrated country, ſeparate Puckholi, Sewad, and Bijore on the ſouth, from Caferiſtan on the north; and advancing from thence to a junction with mount Hindoo-Kho, in the line between Cabul and Anderab, ſeparate Lumghan, which appears to have been the ancient frontier of Cabul, from thoſe diſtricts, which, after the time of Baber, were added to, and have ſince become a part of the province of Cabul; according to its defined limits in the Ayin-Acbaree. On the north of this range, the whole country may be regarded as mountainous; on the ſouth the mountainous tract is confined chiefly to Sewad, Bijore, Teerah, and a part of Puckholi. (Rennell's Mem.) By Col. Crawford's obſervations, a peak of Himmaleh, ſeen from Patna, exceeds 20,000 feet above Nipal, which is probably 5000 feet above the ſea.

HIMMUTNAGUR, a town of Bengal; 25 miles N.E. of Purneah.

HIMS, a town of Arabia, in the province of Lachſa, near the Perſian gulf; 50 miles N. of Lachſa.

HIMTABADS, a town of Bengal; 25 miles W. of Dinagepour.

HIM-TCHAN, a town of China, of the third rank, in Pe-tche-li; 50 miles S.W. of Pao-ting.

HIN, a Hebrew meaſure, containing the ſixth part of an epha; or one wine gallon and two pints.

Hin, in *Geography*, a city of China, of the ſecond rank, in Chen-ſi. N. lat. 38° 27′. E. long. 112° 22′.

HINA, a town of Mexico, in the province of Yucatan; 12 miles N. of Campeachy.

HINAGIE Islands, three or four iſlands in the Indian ſea, near the coaſt of Africa. S. lat. 6° 50′.

HINATOAN, a town on the E. coaſt of the iſland of Mindanao. N. lat. 8° 12′. E. long. 126° 18′.

HINCHA, or St. Jean de Goava, a town in the iſland of Hiſpaniola. N. lat. 19° 14′. W. long. 72° 42′.

HIN-CHANG, a town of China, of the third rank, in Kiang-nan; 25 miles W.N.W. of Cheou.

HINCHINBROKE, Cape, a cape ſo called by capt. Cook, on the W. coaſt of North America, at the entrance into Prince William's ſound; within which is an anchoring place, in eight fathoms water, with a clayey bottom, at about a quarter of a mile from the ſhore. N. lat. 60° 15′. E. long. 213°.

HINCHINBROOK Island, one of the New Hebrides in the Southern Pacific ocean, a little to the north of Sandwich iſland; about ſix miles in circumference.—Alſo, an iſland in the S.E. part of Prince William's ſound, near the W. coaſt of North America. Its form is triangular; it has a large bay on its N. coaſt, and is above 48 miles in circumference. N. lat. 60° 24′. E. long. 213° 50′ to 114° 24′.

HINCKLEY, a market town and pariſh in the hundred of Sparkenhoe, Leiceſterſhire, England, is ſituated near the borders of Warwickſhire. Soon after the conqueſt it was created a barony, and held by Hugh de Grenteſmaiſnel, who erected a ſtately caſtle and a pariſh church within this domain. "The ruines of the caſtle," ſays Leland, "now longying to the king, ſumtyme to the earl of Leyrceſter, be a five miles from Leyrceſter, and in the borders of Leyrceſter foreſt, and the boundes of Hinckeley be ſpatious and famous there." Even the earth-works of the caſtle are now nearly levelled. The ditch and town-wall may however be traced in many places, and alſo the veſtiges of what are called two Roman works: a mount near the river, and the ruins of a bath adjoining the church. A priory was founded here, according to Tanner, by Robert Blanchmaines, and according to Dugdale, by Boſſu, the father of Robert; but Mr. Nichols controverts both thoſe claims, and aſcribes it to Hugh de Grenteſmaiſnel, who gave the priory, with the appropriation of the pariſh church, to the abbey of Lira in Normandy. This priory, like all foreign cells, was often ſeized by the crown during the wars with France, and was wholly ſuppreſſed by Henry V. The pariſh of Hinckley is of very great extent, and includes Stoke-Golding, Dadlington, Wyken, and The Hyde, which, though diſtinct villages, (the latter being in the county of Warwick,) are conſidered as hamlets of Hinckley. The town, under its original lords, certainly enjoyed the privileges of a borough; but being connected with the houſe of Lancaſter, and taking a decided part on that ſide in the civil conteſt; thoſe privileges, whatever their extent might be, became forfeited to the conquering monarch of the houſe of York. The town is now divided into the borough, and the bond without. The limits of the former were anciently thoſe of the town; which has been extended by the ſucceſſive addition of four ſtreets. The civil government is veſted in the mayor, conſtables, and headboroughs. The aſſizes for the county were formerly held here; and here were a gaol and a gallows. The pariſh church of Hinckley is an ancient edifice; the body of it is probably to be aſcribed to the thirteenth century; the weſt door reſembles thoſe of the time of Edward I. or II.; the window immediately over it is ſuppoſed to be an improvement made about the reign of Edward IV.; at which period, the building of the ſteeple, which is 40 yards high, may, with probability, be dated. To the church of Hinckley four chapels were formerly annexed, that of Stoke, (now a pariſh church,) that of Dadlington, and thoſe of Wyken and Hyde, which have been long ſince demoliſhed. The ancient chapel of Stoke was taken down at the beginning of the fourteenth century, by ſir Robert de Champaine, by whom the preſent church was then founded. The chapel of Dadlington bears evident marks of antiquity. Beſides theſe places of worſhip on the eſtabliſhment, there are in Hinckley five meeting-houſes for Preſbyterians, Independents, Quakers, Baptiſts, and Methodiſts; and a chapel for Roman Catholics. The trade of the town has been greatly augmented by the introduction of the ſtocking manufacture. The firſt frame was brought here before the year 1640, by William Iliffe, and is ſaid to have coſt him ſixty pounds; which muſt have been a very conſiderable ſum at that time, as the price of a good frame is not more at preſent than fifteen guineas. With this ſingle frame, which, with the help of an apprentice, he kept conſtantly working night and day, he gained a comfortable ſubſiſtence for his family. The manufacture is now ſo extenſive, that a larger quantity of hoſe is ſuppoſed to be made here than in any other town in England. Nottingham has more frames; but many of thoſe being employed in the fineſt ſorts of ſilk and cotton, the number of ſtockings there made is leſs than at Hinckley, where the frames are generally employed on ſtrong ſerviceable hoſe, of a lower price, in cotton, thread, and worſted. The number of frames in the town and adjacent villages is computed at upwards of 1200, which furniſh employment for nearly 3000 perſons. Hinckley is 100 miles diſtant from London; has a reſpectable market on Mondays, and ſeven annual fairs. The population of the town and its dependencies, which has been progreſſively increaſing, was returned to parliament in the year 1801 as 5686, inhabiting 1059 houſes. At a ſhort diſtance from the town is a ſpring, called The Holy Well, originally dedicated to the Virgin Mary, and once known by the name of Our Lady's Well. Nichols's Hiſtory, &c. of Leiceſterſhire.

In 1808, a new organ, which is a beautiful ornamental piece of mechaniſm, was ſet up in Hinckley church, by Mr. G. P. England of Tottenham-court road. It was erected by a liberal ſubſcription, and coſt 500 guineas. It has 21 ſtops, and contains 1370 pipes.

HIND, a female ſtag of the third year. See Hunting.

Hind-*calf*, a female hart of the firſt year. She fawns in April and May. Her fleſh is ſofter than that of a hart, but not ſo ſavoury, and is dreſt after the ſame manner. If it be roaſted it ought to be larded, dipped in a marinade

rinade or pickle, and moiſtened while it is roaſting. See Hunting.

Hind *Hand*, in the *Manege*. See Hand.

HINDAK, in *Geography*, a town of Aſiatic Turkey, in Natolia; 25 miles S W. of Boli.

HINDELOOPEN, a ſea-port town of Holland, in the department of Frieſland, ſituated on the Zuyder-ſee. It has no walls, and its harbour is ſmall. It is governed by five burgo-maſters, and ſix eſchevins. The inhabitants are chiefly employed in fiſhing, and building ſmall veſſels; 21 miles S.W. of Leuwarden. N. lat. 51° 58'. E. long. 5° 23'.

HINDENI Homines, formed from the Saxon *hindene*, a *ſociety* or *company*, anciently ſignified a ſociety, or claſs of men.

In the time of our Saxon anceſtors, all men were ranked into three claſſes, or *hindenes*; the *loweſt*, the *middle*, and the *higheſt*; and they were valued according to the claſs they were in; that in caſe an injury were done by any one, ſatisfaction might be made according to the value or worth of the man it was done to.

The *loweſt* were thoſe who were worth ten pounds, or two hundred ſhillings; called *viri ducentini*, or *twyhyndemen*, and their wives, *twyhyndas*.

The *middle* were valued at ſix hundred ſhillings; and were called *ſixhyndemen*, and their wives *ſixhyndas*.

The *higheſt* were valued at twelve hundred ſhillings; and were called *twelvehyndemen*, and their wives the *twelvehyndas*.

HINDENNY, or Endri, in *Geography*, a river of Hindooſtan, which paſſes by Adoni, and between Biſnagur and the Kiſtnah, falls into the Toombuddra.

HINDERAA, a town of Norway, in the dioceſe of Chriſtianſand; 20 miles N. of Stavanger.

HINDERABI, or Andarvia, an iſland in the Perſian gulf, about three or four miles long, and one broad, ſeparated from the coaſt of Perſia by a channel half a league acroſs, with depth of water from ſeven to 15 fathoms, and a muddy bottom. N. lat. 26° 44'. E. long. 54°.

HINDERSOE, a ſmall iſland in the N. part of the gulf of Bothnia. N. lat. 65° 38'. E. long. 22 24'.

HINDIA, a circar of Hindooſtan, in Candeiſh, bounded N. by Bopal, E. by Kerleh, S. by the Taptee river, and W. by Bejapour. Its chief towns are Hindia, Hurdah, Huſſingabad, and Barawnay.—Alſo, the capital of the forementioned circar, ſituated on the Nerbudda; ſix miles E.S.E. of Indore. N. lat. 22° 35'. E. long. 77° 10'.

HINDMUND, or Heermund, a large inland river of Perſia, in the province of Segiſtan, which riſes from two widely ſeparated ſources, one in the mountains of Gaur, a part of the Hindoo-Kho, and the other far to the ſouth from the mountains of Gabelabad. Theſe ſtreams join not far to the E. of Boſt, whence the river purſues a weſterly courſe, and, according to the account of Otter, very ſoon divides into many branches, which are loſt in the central deſarts of Perſia. Our geographers, on the contrary, ſuppoſe that the Hindmund paſſes by Zarang into the ſea of Zerch. Pinkerton.

HINDOE, an iſland in the North ſea, near the coaſt of Norway, about 150 miles in circumference. N. lat. 68° 36'.

HINDON, a market-town and borough in the county of Wilts, England, is noted in the annals of parliamentary hiſtory, and borough intrigues, for the conteſted elections that have occurred here. It is deemed an open borough, and the right of election veſted in the bailiff and all the inhabitants paying ſcot and lot; the number of which amounts to about 210. A notorious ſcene of bribery and corruption, reſpecting this borough, was developed before a committee of the houſe of commons in 1775, when it was determined, that out of four candidates, neither of them was duly elected a burgeſs, and that the ſpeaker ſhould not iſſue his warranc for a new writ. The committee were alſo of opinion that it would be expedient to dis-franchiſe the ſaid borough. A bill was brought into parliament for this purpoſe, but was thrown out on account of ſome items of informality. A new bill was afterwards prepared, and read twice during the ſeſſions of 1775, but being ſtrongly oppoſed by counſellors, petitioners, &c. it was not paſſed that year. A third bill was brought in early in the following ſeſſions, which was alſo relinquiſhed, in conſequence of the haraſſing oppoſition made to it. A new writ was then iſſued, and two members again returned for the borough. It is conſidered to be the property, and under the influence of the Beckford family, of Fonthill. A particular account of the preceding caſe, and proceedings, is given in the Hiſtory of Boroughs, vol iii. The firſt time it returned members to parliament was in the 27th year of Henry VI. Hindon conſiſts principally of one long ſtreet, built on the declivity of a gentle hill; and is ſurrounded by part of the Downs. Here are a ſmall weekly market held every Thurſday, and two annual fairs. About two miles S. of the town is Fonthill-Abbey, the ſeat of William Beckford, eſq. The building is ſingular, and its ſituation, ſecluſion, and hiſtory, are alſo replete with ſingularities. On the apex of a lofty hill, nearly the whole of which is covered with plantations, is a large building, aſſuming the exterior forms and character of a cathedral church. A lofty arched porch, an octagonal tower, with turrets, pinnacles, and gables, are ſeen riſing above the trees, and together conſtitute a maſs which may be ſeen at the diſtance of ſeveral miles in almoſt every direction. The interior of this manſion is however more an object of curioſity, and more calculated to excite admiration than the exterior. All the rooms are fitted up in a ſtyle imitative of the elaborate carvings, tabernacle work, &c. of the moſt decorated church architecture; to heighten the effect of which, paintings, gilding, ſculpture, and the moſt coſtly articles in upholſtery, &c. are all brought together. The richeſt treaſures of the fine arts, and literature, are alſo enſhrined within the walls; yet theſe curioſities and rarities are ſecluded from public view, and the whole plantations and houſe are environed by a high wall, ſurmounted by a cheveaux de friſe of iron.

HINDOO-KHO, or *Indian Caucaſus* of Alexander, part of a long ridge of mountains in Aſia, which forms the N.W. boundary of Cabul, and ſeparates it from Balk and Badakſhan. This ridge takes a N.E. direction, between Bamian and Anderab, after which it paſſes between the E. and N.E., until it appears again at the ſources of the Jihon, (or Oxus,) at about 100 miles to the E. of the city of Badakſhan; and from thence paſſing on to the N., it gives riſe alſo to the Sihon (on Jaxartes.) (See Himmaleh.) The city of Cabul is ſituated near the foot of this mountain. (See Cabul.) Between the mountains of Hindoo-Kho and thoſe of Candahar, the country takes the form of an extenſive valley, from Cabul to the borders of Koraſan. The river Heermund or Hirmend iſſues from the north of theſe mountains, and the waters of Cabul from the eaſt. Hindoo-Kho is continued weſtward, under the name of *Gaur* (which ſee), and in poſition anſwers to *Paropamiſus*.

HINDOOS, the inhabitants of that part of India, denominated

minated Hindooſtan, who profeſs the religion of the Bramins. (See BRACHMANS.) They are called *Gentoos*. For an account of them, ſee that article. See alſo the next article.

HINDOOSTAN, a country of Aſia, which, by the people of modern Europe, has been underſtood to mean the tract ſituated between the rivers Ganges and Indus on the E. and W.; the Thibetian and Tartarian mountains on the N; and the ſea on the S But ſtrictly ſpeaking, the extent of Hindooſtan is much more circumſcribed; and the name ought to be applied only to that part of the above tract, which lies to the N. of the parallels of 21 or 22°. The Nerbuddah river is, indeed, the reputed ſouthern boundary of Hindooſtan, as far as it goes; and the ſouthern frontiers of Bengal and Bahar compoſe the remainder of it. The countries on the S. of this line, according to the Indian geographers, go under the general name of DECCAN; and compriſe nearly one-half of the tract generally known by the name of the Mogul empire. But as the term Hindooſtan has been applied in a lax ſenſe to this whole region, it may be neceſſary to diſtinguiſh the northern part of it, by the name of Hindooſtan *Proper*. This tract has indeed the Indus, and the mountains of Thibet and Tartary, for its weſtern and northern boundaries; but the Ganges was improperly applied as an eaſtern boundary, as it interſects in its courſe ſome of the richeſt provinces of the empire; while the Burrampooter, which is much nearer the mark as an eaſtern boundary, was utterly unknown. In this circumſcribed ſtate, the extent of Hindooſtan *proper* is about equal to France, Germany, Bohemia, Hungary, Switzerland, Italy, and the Low Countries, collectively; and the Deccan and Peninſula are about equal to the Britiſh iſlands, Spain, and Turkey, in Europe. See DECCAN.

The learned Mr. Wilkins aſſured major Rennell, that no ſuch words as “Hindoo,” or “Hindooſtan,” are to be found in the Sanſcrit dictionary. The people among whom the Sanſcrit language was vernacular, ſtyled their country “Bharata.” The Hindoos, however, call their country “Medhyama;” and they pretend that it was the portion of “Bharat;” one of the nine brothers, whoſe father had the dominion of the whole earth. (See Aſiatic Reſearches, vol. i. p. 419.) It is then probable, that the word “Hind” furniſhed that of India to the Greeks; and the termination *Stan*, ſignifying country in the Perſic, is of more modern date. It has happened, on this as well as ſimilar occaſions, that the name “India” has been applied not only to the country originally deſigned by it, but to others adjacent to and beyond it; for the countries between Hindooſtan and China came to be called the *further* India, or India *extra Gangem;* whereas Hind, or India, properly belonged only to the country of the people called Hindoos; or thoſe of India *intra Gangem*. The name is as ancient as the earlieſt profane hiſtory extant; and this circumſtance ſerves, as well as others, to prove the high antiquity of the Perſian language. For other appellations of the Hindoos and Hindooſtan, ſee GENTOOS.

HINDOOSTAN, *Hiſtory of*. Hindooſtan, under one appellation or another, has laid claim to very high antiquity; but the earlier period of its hiſtory is involved in great obſcurity and uncertainty. If we may credit the relations of ſome hiſtorians, the enterpriſing ambition of Seſoſtris, ſuppoſed king of Egypt about 1485 years B. C, induced him to fit out a fleet of 400 ſhips in the Arabian gulf, which conquered all the countries ſtretching along the Erythrean ſea to India. At the ſame time, his army, led by himſelf, marched through Aſia, and ſubjected to his dominion every part of it as far as to the banks of the Ganges; and croſſing that river, advanced to the eaſtern ocean. (Diod. Sic. lib. i.) Strabo, however, rejects the accounts of the Indian expedition of Seſoſtris; and he not only aſſerts, in the moſt explicit terms, that this monarch never entered India (lib. xv.), but he ranks what has been related concerning his operations in that country with the fabulous exploits of Bacchus and Hercules. Arrian alſo concurs in the ſame ſentiments with reſpect to the exploits of Seſoſtris in India. (Hiſt. Ind. c. 5. Arrian, Exped. Alex.) And as Herodotus ſeems to have derived his information concerning India, not from the Egyptians, but from the Perſians, it is probable that in his time there was little intercourſe between Egypt and India. Dr. Robertſon, in his “Hiſtorical Diſquiſition concerning India,” has ſuggeſted a variety of conſiderations which evince the improbability of any ſuch expedition as that of Seſoſtris into India. It is much more probable, that the Phœnicians, having wreſted from the Idumæans ſome commodious harbours towards the bottom of the Arabian gulf, held from theſe a regular intercourſe with India on the one hand, and with the eaſtern and ſouthern coaſts of Africa on the other. But as the diſtance from the Arabian gulf to Tyre was conſiderable, and the conveyance of goods by land tedious and expenſive, they took poſſeſſion of Rhinocolura, the neareſt port in the Mediterranean to the Arabic gulf; and thus they were forwarded, partly by land and partly by ſea, to Tyre. It is probable that Solomon's profitable traffic included that of India. As his kingdom extended from the Euphrates to the Red ſea, and to the borders of the Red ſea, (1 Kings, iv. 24.) it opened to him two of the great avenues to the eaſt, by the way of the Red ſea, and the Perſian gulf. Volney ſuggeſts, that the object which Solomon had in view, when he took poſſeſſion of Palmyra, was to uſe it as an emporium of the Eaſt India trade, by the way of the Perſian gulf, and the courſe of the Euphrates. This was about 1000 years before our era. Solomon's trade, however, was merely temporary.

The firſt and moſt authentic accounts of Hindooſtan are thoſe which are given us by Herodotus, who lived 113 years before the expedition of Alexander the Great. From him (l. iv. c. 42. 44.) we learn, that Darius, the ſon of Hyſtaſpes, explored regions of Aſia formerly little known. Having ſubjected to his dominion many of the countries which ſtretched S.E. from the Caſpian ſea towards the river Oxus, his curioſity was excited to acquire a more extenſive and accurate knowledge of India, on which they bordered. For this purpoſe he appointed Scylax of Caryandra to take the command of a ſquadron fitted out at Caſpatyrus, in the country of Pactya (the modern Pehkely), towards the upper part of the navigable courſe of the river Indus, and to fall down its ſtream until he ſhould reach the ocean. After employing two years and ſix months in this expedition, he gave ſuch an account of the populouſneſs, fertility, and high cultivation of that region of India, through which his courſe lay, as rendered Darius impatient to become maſter of a country ſo valuable. This he ſoon accompliſhed; and though his conqueſts in India do not ſeem to have extended beyond the diſtrict watered by the Indus, he levied a tribute which amounted to near a third part of the whole revenue of the Perſian monarchy. But neither the voyage of Scylax, nor the conqueſts of Darius, diffuſed any general knowledge of India. About 160 years after the reign of Darius Hyſtaſpes, Alexander the Great undertook his expedition into India. Accordingly he ſet out from Bactria, and croſſed that ridge of mountains, which, under various denominations, forms the “Stony Girdle” (to adopt the phraſe of oriental geographers)

geographers) that encircles Aſia, and conſtitutes the northern barrier of India; and thus he diſcovered the route which was taken by the ſubſequent invaders of this country, Tamerlane and Nadir Shah. After paſſing the mountains, he encamped at Alexandria Paropamiſana, not far from the mountains denominated the Indian Caucaſus by his hiſtorians, and now known by the name of *Hindoo Kho* (which ſee); and having ſubdued or conciliated the natives ſeated on the N.W. bank of the Indus, he croſſed the river at Taxila, now Attock. He then marched forward in the direct road towards the Ganges, and the opulent provinces that lay towards the S.E., now comprehended under the general name of Hindooſtan. But being oppoſed on the banks of the Hydaſpes by Porus, a powerful monarch of the country, and by ſome other Indian princes, he was diverted from his route, and obliged to turn more towards the S.W., and to march through one of the richeſt and beſt peopled countries of India, now called the *Panjab*, (which ſee). It was his intention to have purſued his march to the Ganges, and the fertile regions through which that river flowed; but his troops, having already ſuffered much, unanimouſly refuſed to advance farther, and Alexander was obliged to iſſue orders for marching back to Perſia. This memorable tranſaction took place on the banks of the Hyphaſis, which was the utmoſt limit of Alexander's progreſs in India; ſo that he did not traverſe the whole extent of the Panjab. Upon his return to the Hydaſpes, he found that the officers, with whom he had entruſted the charge, had aſſembled a numerous fleet, which he deſtined to ſail down the Indus to the ocean, and from its mouth to proceed to the Perſian gulf, that a communication by ſea might be opened with India and the centre of his dominions. The conduct of this expedition was committed to Nearchus; and he was accompanied down the river by Alexander himſelf with a very great and magnificent armament. The diſtance to the ocean was no leſs than 1000 Britiſh miles, and the navigation occupied nine months. Of the extenſive region through which they paſſed, a conſiderable portion, particularly the Upper Delta, ſtretching from the capital of the ancient Malli, now Moultan, to Patala, the modern Tatta, is diſtinguiſhed for its fertility and population. Alexander, having accompliſhed this object, led his army back by land to Perſia; and Nearchus, after a coaſting voyage of ſeven months, conducted the fleet ſafely up the Perſian gulf into the Euphrates. With reſpect to the general ſtate of India we learn, that in the age of Alexander, though there was not eſtabliſhed in it any powerful empire, reſembling that which in modern times ſtretched its dominion from the Indus almoſt to Cape Comorin, it was even then formed into monarchies of conſiderable extent. From the memoirs of Alexander's expedition, preſerved by Arrian, we alſo derive the firſt authentic information concerning the climate, the ſoil, the productions, and the inhabitants of India; and it is remarkable that the deſcriptions given by Alexander's officers delineate what we now behold in India, at the diſtance of 2000 years. The ſtated change of ſeaſons, now known by the name of "Monſoons," the periodical rains, the ſwelling of the rivers, and the inundations occaſioned by them, and the appearance of the country during their continuance, are particularly mentioned and deſcribed. No leſs accurate are the accounts which they have given of the inhabitants, their delicate and ſlender form, their dark complexion, their black uncurled hair, their garments of cotton, their living entirely upon vegetable food, their diviſion into ſeparate tribes, or "caſts," the members of which never intermarry, the cuſtom of wives burning themſelves with their deceaſed huſbands, and many other particulars; in all which they perfectly reſemble the modern Hindoos. Alexander, however, explored only a ſmall portion of the vaſt continent of India. His operations did not extend beyond the modern province of Lahore, and the countries on the banks of the Indus, from Moultan to the ſea. In India, however, he founded two cities on the banks of the Hydaſpes, Nicæa and Bucephalia, and a third on the Aceſines, both navigable rivers, which, after uniting their ſtreams, fall into the Indus. By means of theſe cities he evidently intended to keep open a communication with India, not only by land but by ſea; and alſo by clearing the navigation of the Euphrates and Tigris, he propoſed that the valuable commodities of India ſhould be conveyed from the Perſian gulf into the interior parts of his Aſiatic dominions, while by the Arabian gulf they ſhould be carried to Alexandria and diſtributed to the reſt of the world. Seleucus, one of the ſucceſſors of Alexander, entertained high ideas of the advantages that might be derived from a commercial intercourſe with India, and with a view of ſecuring and extending them, he marched into the country, and advanced conſiderably beyond the utmoſt boundary of Alexander's progreſs. In order to obtain ſome knowledge of the country and the manner of its inhabitants, he ſelected Megaſthenes, who had accompanied Alexander in his expedition to India, and deputed him as ambaſſador to Palibothra, the famous capital of the Praſii, ſituated on the banks of the Ganges. Here he reſided ſeveral years, and was probably the firſt European who ever beheld that mighty river, far ſuperior to any of the ancient continent in magnitude, and no leſs diſtinguiſhed by the fertility of the countries through which it flows. By this journey and ſettlement of Megaſthenes, the Europeans gained an acquaintance with a large extent of country of which they had not hitherto any knowledge. From his writings the ancients ſeem to have derived almoſt all their knowledge of the interior ſtate of India, and the ample accounts of Diodorus Siculus, Strabo, and Arrian, appear manifeſtly to be a tranſcript of his words. But Megaſthenes, being fond of the marvellous, has unfortunately blended with the truths which he related many extravagant fictions, and diminiſhed our confidence in his other relations. The embaſſy of Megaſthenes to Sandracottus, and another of Daimuchus to his ſon and ſucceſſor Allitrochidas, are the laſt tranſactions of the Syrian monarchs with India, of which we have any account. Nor can we fix with accuracy the time, or deſcribe the manner in which their poſſeſſions in India were wreſted from them. It is probable that they were obliged to abandon the country ſoon after the death of Seleucus. When Bactria, originally ſubject to Seleucus, became an independent ſtate about 69 years after the death of Alexander, the link of the chain that connected India with Syria was broken. The Indian trade was about the ſame time transferred from Tyre to Alexandria in Egypt, where it flouriſhed under the auſpices of the Ptolemies, (ſee Berenice,) until Egypt became a Roman province, and was continued on a more extenſive ſcale by the Romans themſelves; nor did it forſake Alexandria until the re-diſcovery of the paſſage by the Cape of Good Hope. This traffic opened to the Egyptians and Romans a knowledge of the coaſts and products of India. It is extraordinary, however, conſidering how much the detail of the coaſts was known to Ptolemy, that the general form of his map ſhould ſo much deviate from the truth; for he makes the coaſts between the Indus and Ganges to project only in a ſlight curve; whereas, they are known to form the ſides of a triangle, whoſe perpendicular almoſt equals its baſe; Cape Comorin being the apex of it. Whoever, ſays major Rennell, compares the proportional dimenſions of India, found in Diodorus Siculus, Pliny and Arrian, will find them tolerably juſt; and will be inclined to think that the worſt ſet of ancient maps of India has travelled down to us; and that Ptolemy, in conſtructing his map of that part, did not expreſs the ideas of well-informed people of his own time on that ſubject. Pliny was about 60 years before Ptolemy, and Arrian about 20 years after Ptolemy; their accounts of the dimenſions of India were taken from Eratoſthenes and Megaſthenes. Diodorus ſays, that India is 32,000 ſtadia from N. to S., and 28,000 from E. to W.; that is, the breadth is ſeven-eighths of the length. Arrian gives the meaſures collected by Eratoſthenes and Megaſthenes; and ſays, that India is bounded on the W. by the Indus; on the N. by a continuation of Mount Taurus, called in different parts Paro-pamiſus, Emodus, and Himaus; and on the S. by the ocean, which alſo ſhuts up the eaſtern parts of it. Few authors, (ſays he,) have given us any account of the people that inhabit towards the mouths of the Ganges, where Palibothra is ſituated. The diſtance from the mountains, at the head of the Indus, to its mouth, according to Eratoſthenes, is 13,000 ſtadia; and from the ſaid mountains to the eaſtern ſea, the extent is ſomewhat leſs; but as a huge tract of land runs out 4000 ſtadia into the ſea, (meaning the peninſula,) it may be reckoned 16,000 ſtadia; the diſtance from Palibothra to the weſtern extremity of India, meaſured along the great road, is 10,000 ſtadia; and the whole length, (that is, from E. to W.) is 20,000 ſtadia. Arrian, likewiſe, gives the meaſures according to Megaſthenes, who reckoned India 22,300 ſtadia from N. to S., and 16,000 broad from E. to W.; making that the breadth which Eratoſthenes reckons the length. Megaſthenes's proportion is, on the whole, according to major Rennell, the trueſt; for India is about 28 degrees of a great circle in length from N. to S.; or from the Indian Caucaſus to Cape Comorin; and about 20° in breadth from the Indus to the mouth of the Ganges; and reckoning from the moſt diſtant mouth of each river, it will be 22° in breadth. Thus we ſee that Arrian had as juſt an idea of the proportional dimenſions of India, as we had 40 years ago; for it was then reckoned narrower than the truth by at leaſt two degrees. Pliny gives the meaſures along the coaſts between the mouth of the Ganges and Pattala, (or Tatta,) in the mouth of the Indus at 3320 miles, *i.e.* according to Rennell, Roman miles of 1000 paces. The true meaſure of theſe coaſts, rejecting the ſinuoſities, and attending only to the general form, is 40 degrees of a great circle. Allowing, with M. D'Anville, 75 Roman miles to a degree, the above number of miles will amount to 44° inſtead of 40°, the true meaſure; but reckoning the pace at four feet 10.02 inches Engliſh, there ought to be $78\frac{1}{2}$ Roman miles to a degree, and thus the 3320 Roman miles will be 42°, or within $\frac{1}{11}$ part of the truth. Pliny, therefore, it is evident, knew nearly the form of the peninſula; and Ptolemy was ignorant of its general form, although he knew ſo much concerning the particulars.

Arrian's geography of India relates chiefly to the northern parts, or thoſe ſeen by Alexander and Megaſthenes; and his catalogue of rivers contains only thoſe that diſcharge themſelves into the Ganges or Indus.

It is unqueſtionable, that the Hindoo or Braminical religion was univerſal over Hindooſtan and the Deccan, before the time of Alexander's conqueſt, according to the accounts given us by Herodotus and Arrian. But though there might be an univerſality of religion, there were many diſtinct languages; and hiſtory, both ancient and modern, aſſures us that India was divided into a number of kingdoms or ſtates, from the time of Herodotus down to that of Acbar. There appears, however, to have been, generally, independently of theſe diviſions, a large empire or kingdom, which occupied the principal part of that immenſe valley or plain, through which the Ganges takes its courſe; the capital of which has fluctuated between Delhi and Patna, as the limits of the empire have varied. This kingdom was that of the "Praſii," and "Gangaridæ;" in the times of Alexander and Megaſthenes; which appears, by the ſtrength of its armies and the number of elephants trained to war, to have been very powerful. This kingdom, as major Rennell ſuppoſes, could not have been leſs in dimenſions than France, extending weſtward to the Panjab country, and including at leaſt part of Bengal; and, as Arrian deſcribes it, its ſtate was rich. The inhabitants were good huſbandmen, and excellent ſoldiers; governed by nobility, and living peaceably; their rulers impoſing upon them nothing harſh or unjuſt.

Major Rennell obſerves, that there is no known hiſtory of Hindooſtan (reſting on the foundations of Hindoo materials, or records,) extant, before the period of the Mahomedan conqueſts; for either the Hindoos kept no regular hiſtories, or they were all deſtroyed, or ſecluded from common eyes by the Pundits. The travels of Coſmas in the ſixth century (ſee Cosmas), and of the two Mahomedan travellers in the ninth, afford few materials for hiſtory; and but little can be gleaned from Marco Paolo, a Venetian nobleman, who croſſed the peninſula, and went up the weſtern ſide of it to Guzerat, in the 13th century. It is chiefly to Perſians that we are indebted for that portion of Indian hiſtory which we poſſeſs. The celebrated Mahomed Feriſhta, early in the 17th century, compiled a hiſtory of Hindooſtan, from various materials, moſt of which, according to Col. Dow, who tranſlated this hiſtory, were collected from Perſian authors. But the tranſlator allows, that the moſt valuable part of this hiſtory is that poſterior to the firſt Mahomedan conqueſts, about the year 1000. The firſt Mahomedan conqueror, who made any eſtabliſhments in Hindooſtan, was Mahmood, emperor of *Ghizni*; which ſee. In the year 1000 he entered Hindooſtan; and although in 1008 all the Hindoo princes, from the weſt of the Ganges to the river Nerbuddah, united againſt him, for the common defence of their religion, which he wiſhed to extirpate, and which he actually attempted to annihilate by the ſavage deſtruction of their temples, they were defeated. After ſeveral ſucceſsful but deſolating expeditions, Mahmood died in 1028, poſſeſſed of the eaſtern, and by much the largeſt part of Perſia; as well as, nominally, of all the Indian provinces from the weſtern part of the Ganges to the peninſula of Guzerat, and from the Indus to the mountains of Agimere; but the Panjab was the only part of it that was ſubjected to regular government under the Mahomedans; as being in the vicinity of the Ghiznian empire. As for the Rajpoots of Agimere, they ſtill preſerved their independence, among their rugged mountains, and cloſe vallies; and not only then, but, in a great meaſure, down to the preſent time; being, in reſpect of Hindooſtan, what the country of Switzerland is to Europe; but much more extenſive and populous. From Mahmood to Aurungzebe the Indian conquerors were contented with the nominal ſubjection of thoſe hardy tribes; among whom, military enthuſiaſm, grafted on religious principles, is added to ſtrength and agility of body; and this race is diſſeminated over a territory equal to half the extent of France, as it exiſted before the late revolution. It goes under the general name of Rajpootana; and is the original country of the founder of the Mahratta ſtate; whoſe ruler, about half a century ago, aſpired at univerſal empire in Hindooſtan. (See Mahrattas.) Upon the death of Mahomed Gori, in 1205, the

Indian part of the Ghiznian empire, then divided, fell to Cuttub, who founded the Patan or Afghan dynaſty in Hindooſtan. The Afghans originally inhabited the mountainous tract lying between India and Perſia, or the ancient Paropamiſus. (For their hiſtory, ſee AFGHANS.) Before Cuttub's elevation to the throne, he had carried his arms under Mahomed Gori, into Agimere and Guzerat. Lahore was, originally, his capital; but with a view of fixing the imperial reſidence nearer to the centre of his conqueſts, he removed to Delhi. The emperor Altumſh, who ſucceeded to the Patan throne in 1210, completed the conqueſt of the greateſt part of Hindooſtan proper. He appears to have been the firſt Mahomedan that made a conqueſt of Bengal; and it was during this reign (1221) that Gengiz Cawn, among his extenſive conqueſts, accompliſhed that of the empire of Ghizni; but he left Hindooſtan undiſturbed. About A. D. 1243, the Moguls, or Munguls, ſucceſſors of Gengiz, who poſſeſſed, or rather over-run the countries on the N. W. of Hindooſtan, made ſeveral irruptions into it; but it was not till more than 150 years afterwards, that, under Timur, or Tamerlane, they penetrated into the centre of India. The provinces of Hindooſtan were held rather as tributary kingdoms, than as provinces of the ſame empire; and they ſeldom failed to revolt when a favourable opportunity offered. Of the ſtate of the internal government of Hindooſtan, a judgment may be formed by the puniſhment inflicted on the Mewatti, or the Banditti tribe, which inhabit the hilly tracts within 25 miles of Delhi. In 1265, 100,000 of theſe wretches were put to the ſword, and a line of forts was conſtructed along the foot of their hills.

"Rebellions, maſſacres, and barbarous conqueſts," ſays major Rennell, "make up the hiſtory of this fair country (which, to an ordinary obſerver, ſeems deſtined to be the paradiſe of the world); the immediate effect of the mad ambition of conquering more than can be governed by one man: for the whole empire being portioned out to rapacious governors, who domineering over the governed, until their ſpirits were ſufficiently debaſed, were at laſt able to perſuade them, that their common intereſt lay in taking up arms, to render theſe governors independent."—"It would appear as if the warm climates, and more eſpecially the open countries, ſituated within them, were deſtined to be the ſeats of deſpotiſm; for that the climate creating few wants, and the ſoil being productive without any great exertion; the inhabitants of it do not poſſeſs thoſe energies that, in a cooler climate, prompt mankind to inveſtigate their natural rights, and to aſſert them. This, however, is a point that I ſhall not venture to decide on; although I believe it is a fact not to be diſputed, that throughout the known parts of the world, deſpotiſm prevails moſt in the warm climates. The Patan, Mogul, and Tartarian conquerors in Hindooſtan and China, however hardy at firſt, have, in a courſe of ages, ſunk into the ſame ſtate of effeminacy with their ſubjects; and, in their turn, have, with them, received a new maſter. Let thoſe who are in the habit of complaining of the ſeverity of a northern climate, reflect, that whatever phyſical evils it may produce, it matures the great qualities of the mind; and renders its inhabitants pre-eminent among their ſpecies; while a flowery poet, or a more flowery hiſtorian, is the moſt eminent production of the tropical regions." (See CLIMATE.)

The Moguls, having gained acquiſitions in the provinces on the W. of the Indus, in conſequence of the neglect of the kings of Delhi, at length croſſed that river, and invaded the Panjab; and ſo formidable did they appear to Feroſe II., that ſome tribes of them were permitted to ſettle in that country. (A.D. 1292.) In 1293 this emperor projected, at the ſuggeſtion of Alla, governor of Gurrah, an attack upon the Deccan, a tract nearly equal in extent to what he actually poſſeſſed in Hindooſtan, and which extended from the ſhores of the Indus to the mouth of the Ganges, and from the northern mountains to Cattack, Sirong, and Agimere; the greateſt part of Malwa, with Guzerat and Sindi, being then independent. Alla, incited firſt by avarice, having ſucceeded in his object, depoſed and murdered the emperor, and took poſſeſſion of the throne in 1295, beginning his plan of conqueſt by the reduction of Guzerat; but while he was purſuing his conqueſts, the watchful and reſtleſs Moguls penetrated even to Delhi, and plundered its ſuburbs. Alla, having extended his victories and poſſeſſions, died in 1316. At this period all Hindooſtan proper was comprehended in the Patan empire (ſo called from the dynaſty in poſſeſſion of the throne), and the interior policy is ſaid to be ſo well regulated, that ſtrangers might travel through the empire in perfect ſecurity. Feroſe III., who ſucceeded in 1351, appeared more deſirous of improving the empire, after the defection of Bengal and the Deccan, &c. than of extending it by arms. Accordingly, canals and public works, for the improvement of agriculture and of the inland navigation, were his favourite objects during a reign of thirty-ſeven years. The Moguls made another irruption in 1357; and after the death of Feroſe, in 1388, rebellion and civil war, during a courſe of ſeveral years, prepared the empire for foreign ſubjection, and a minority in the perſon of Mahmood III., who ſucceeded in 1393, brought matters to a criſis. In this ſtate of things, Timur, who had already extended his empire over all the Weſtern Aſia and Tartary, turned his arms towards Hindooſtan in 1398. In the preceding year his grandſon Peer Mahomed had prepared the way by reducing the Panjab and Moultan; and before the cloſe of the year, he himſelf croſſed the Indus, and took poſſeſſion of Delhi without a battle. "This inhuman monſter," ſays Rennell, "who had credit enough with a poet of the (laſt) century, to be introduced on the ſtage, as a hero, poſſeſſing great and amiable qualities, obtained in Hindooſtan the title of "the deſtroying prince;" and was truly worthy of it, from the numerous maſſacres and exterminations executed under his immediate direction." He was rapid in his deſtructive movements; he ſpent little more than five months between the time of his croſſing and re-croſſing the Indus; and he appears to have paid more attention to ſeaſons than Alexander had done; as Timur choſe the fair ſeaſon for his expedition, whereas Alexander was in the field, in the Panjab, during a whole rainy ſeaſon. Timur, however, may be ſaid rather to over-run than to ſubject or conquer: for he did not diſturb the order of ſucceſſion in Hindooſtan, but left Mahmood on the throne, reſerving to himſelf the poſſeſſion of the Panjab country only; which his ſucceſſors did not long retain. During his life, which ended in 1405, he was prayed for in the moſques of Hindooſtan, and the coin was ſtruck in his name; but this might be more the effect of policy in the uſurpers of Mahmood's throne than the act of Timur. It does not appear that he carried much treaſure with him out of Hindooſtan. But Nadir Shah's acquiſition of the precious metals, at a later period, was great beyond all ideas of accumulation in Europe; and is only to be accounted for by the influx of thoſe metals from America, during that interval. The death of Mahmood happened in 1413; and with him ended the Patan dynaſty, founded by Cuttub in 1205. The throne was then filled by Chizer, a Seid, one of the race of the prophet Mahomed, whoſe poſterity occupied it until the year 1450, when Belloli, an Afghan of the tribe of Lodi, took poſſeſſion of it, on the abdication of Alla II., under whom all Hindooſtan fell into ſeparate governments. The ſon of Belloli recovered a conſiderable part of the empire, and in 1501 made Agra the royal reſidence. It was during this reign that the Portugueſe firſt accompliſhed the paſſage to India by the Cape of Good Hope. The empire fell again into utter confuſion under Ibrahim II. in 1526; and this paved the way for the conqueſt of Hindooſtan by Sultan Baber, a deſcendant of Tamerlane and of Gengiz Khan; who reigned over a kingdom compoſed generally of the provinces ſituated between the Indus and Samarcand. Diſpoſſeſſed of his dominions by the Uſbecs, he determined to try his fortune in Hindooſtan, whoſe diſtracted ſituation flattered his hopes of conqueſt. From Cabul, where he reſided, he undertook his firſt expedition acroſs the Indus, in 1518. In his fifth expedition (A.D. 1525) he defeated the emperor of Delhi, and put an end to the dynaſty of Lodi. Baber reigned only five years in Hindooſtan, during which time his chief employment was the reduction of the eaſtern provinces. His ſon Humaioon ſucceeded him in 1530; but though he was a prince of conſiderable abilities and great virtues, he was driven from his empire in 1541. During his expulſion, his ſon Acbar was born, whom we may reckon among the greateſt of the ſovereigns of Hindooſtan. The ſtate of this country was ſo unſettled, that no leſs than five ſovereigns appeared on its throne in the courſe of nine years. A ſtrong party in Hindooſtan invited Humaioon back; and he returned in 1554, but died in the following year. His good character facilitated the acceſſion of his ſon Acbar, who was about the age of fourteen years, in 1555, when his father died. For a general account of Acbar's character and reign, we ſhall refer to the biographical article AKBAR, and alſo to the hiſtory of Hindooſtan by Col. Dow. We ſhall here add ſome further particulars. As in the perſon of Baber, the line of Tamerlane firſt aſcended the throne of Hindooſtan, ſo in that of Acbar, the grandſon of Baber, it may be ſaid to have been eſtabliſhed. The conqueſt of their anceſtor, about a century and a half before, had no ſhare in effecting the preſent ſettlement. Baber was in reality the founder of the Mogul dynaſty; and from this event Hindooſtan came to be called the "Mogul" empire. The firſt years of Acbar's reign were employed in the reduction of the revolted provinces from Agimere to Bengal; and his conqueſts were ſecured by a proper choice of governors, by wiſe regulations, by an unlimited toleration of religion, and by a proper attention to the propenſities of the people; to all which a long and vigorous reign was peculiarly favourable. The Hindoos ſtill formed the bulk of the people; even in thoſe provinces, which, from their vicinity to the country of the conquerors, had been the moſt frequently over-run; and experience had taught the Mahomedan conquerors that the paſſive religion and temper of the Hindoos would, if left to themſelves, never diſturb the eſtabliſhed government. But the Deccan was a ſtumbling-block to the Mogul emperors, and therefore engaged the particular attention of Acbar. See DECCAN.

Acbar, who died in 1605, was ſucceeded by his ſon Selim, under the appellation of Jehanguire, who reigned about 22 years. It was in this reign, and in the year 1615, that ſir Thomas Roe was ſent as the firſt Engliſh ambaſſador to the emperor of Hindooſtan. The Portugueſe had by this time acquired conſiderable ſettlements in Bengal and Guzerat; but only thoſe in Guzerat, where they alſo poſſeſſed ſome extent of territory, attracted the notice of the court. Shah Jehan ſucceeded his father in 1628; and during this reign, *viz.* in 1633, the firſt ſerious quarrel happened between the Europeans (Portugueſe) and Moguls; and the Portugueſe were expelled from Hoogly, on the Ganges. In 1658 the civil wars commenced between the emperor and his ſons, as well as between the ſons themſelves; which terminated in the elevation of Aurungzebe, the third in deſcent, after he had depoſed his father, and murdered or expelled his brethren. For an account of his life and reign, ſee AURUNGZEBE. Aurungzebe was ſucceeded by his ſon Mauzum, who took the title of Bahader Shah, and reigned five years. Whilſt he was meditating the reduction of the Rajpoot princes of Agimere, who had formed a ſtrong confederacy, his attention was engaged by the Seiks, a new ſect of religioniſts, who appeared in arms in the Lahore province, and ravaged the whole country from thence to the banks of the Jumnah river. Theſe Seiks had ſilently eſtabliſhed themſelves along the foot of the eaſtern mountains during the reign of Shah Jehan. They differ from moſt religioniſts in that, like the Hindoos, they are perfectly tolerant in matters of faith, and require only a conformity in certain ſigns and ceremonies; but, unlike the Hindoos, they admit proſelytes. They are now become one of the moſt potent ſtates in Hindooſtan. Theſe were, after much trouble and delay, reduced by the emperor, who then took his reſidence at Lahore, where he died in 1712. A conteſt for the empire took place between his four ſons; and this ended in the eſtabliſhment of Jehaunder; but at the end of nine months he was dethroned by Ferokſere, great grandſon of Aurungzebe. It was in this reign that the Engliſh Eaſt India company obtained the famous "Firman," or grant, by which their goods of export and import were exempted from duties, or cuſtoms; and this was regarded as the company's "Commercial Charter in India," while they ſtood in need of protection from the princes of the country. In 1717 Ferokſere was depoſed, and blinded by the Seids, who aſſumed the diſpoſal of the empire and all its concerns. From this time affairs declined very rapidly; and the empire, which had acquired ſome degree of conſiſtency under the houſe of Timur, was now about to be diſmembered in a degree beyond what it had experienced, even before the era of the Mahomedan conqueſts. Mahomed Shah, grandſon of Bahader Shah, was placed on the throne by the Seids in 1718; but he contrived, by a rebellion and a battle, to get rid of the Seids. About this time, Nizam-al-Muluck, viceroy of the Deccan, was riſing into power, and meditating independency; and while he was formidable in the ſouth, the Mahrattas directed their attacks againſt the middle and northern provinces. Malwa, and the open parts of Agimere, were over-run by them; and their detachments inſulted even the capital of the empire. The weak Mahmood had, in the early part of his reign, endeavoured to conciliate them, by paying them a tribute, amounting to one-fourth of the net revenue of the invaded provinces; but this conceſſion only increaſed their inſolence, and terminated in their ſeizing on the provinces themſelves.

In 1738 the Nizam invited Nadir Shah, the uſurper of the Perſian throne, who was then engaged in the ſiege of Candahar, to invade Hindooſtan, hoping to profit by the confuſion which would thus be occaſioned. In the following year Nadir Shah entered Hindooſtan; but the ſtate of things being at this time uncertain, he offered to evacuate the empire for 50 lacks of rupees (half a million). But the intrigues of the Nizam and his party occaſioned the weak emperor to throw himſelf on the clemency of the invader, who entered Delhi, and demanded 30 millions ſterling, by way of ranſom. Tumults, maſſacres, and famine, were the reſult; 100,000 of the inhabitants were maſſacred, and 62 millions of plunder were ſaid to be collected. Nadir married his ſon to a grand-daughter of Aurungzebe, reſtored Mahomed Shah to his throne, and returned to Perſia, after obtaining the ceſſion of all the countries ſubject to Hindooſtan, lying on the W. of the Indus. The Nizam was thus left in poſſeſſion of the whole remaining power of the empire, which he ſacrificed to his own views in the Deccan, where he eſtabliſhed an independent kingdom for himſelf. The Mahratta invaſions of the Carnatic in 1740 and 1741, and the defeat and death of Doaſt Ally, nabob of Arcot, by their arms, called the Nizam home, who, on his arrival, ſettled the Carnatic, by placing Anwar O'dien, father of Mahomed Ally, in the nabobſhip of Arcot, which was then underſtood to comprehend nearly the preſent Carnatic. Bengal became independent of Delhi a little before this time (1738), under Aliverdy Cawn; and not long after it was invaded by a vaſt army of Mahrattas, both from Poonah and Berar, under the ſanction of the emperor's name, who, unable to ſatisfy their demands, ſent them to collect for themſelves the arrears of revenue ſince the defection of Aliverdy. About the ſame time, the Rohillas, a tribe from the mountains that lie between India and Perſia, erected an independent ſtate on the E. of the Ganges, and within 80 miles of Delhi. Theſe appeared very ſtrong ſymptoms of the total diſſolution of the empire. Nadir Shah died in 1747; and Abdalla, one of his generals, ſeized on the eaſtern part of Perſia, and on the bordering provinces of India, that had been ceded by Mahomed Shah to Nadir; and theſe he formed into a kingdom, known at preſent by that of Candahar, or the country of the "Abdalli," comprizing nearly the ancient empire of Ghizni. Mahomed Shah, who died this year, after a reign of 29 years, was ſucceeded by his ſon, Ahmed Shah. During his reign of ſix years, the entire diviſion of the empire took place; nothing remaining to the houſe of Timur except a ſmall territory round Delhi, together with the city itſelf (now no longer a capital), expoſed to repeated depredations, maſſacres, and famines, by the conteſts of invaders. The laſt army that might be reckoned "imperial," was defeated by the Rohillas in 1749, by which their independence was firmly eſtabliſhed in the eaſtern part of the province of Delhi. The Jates, or Jats, a Hindoo tribe under Soorage-Mull, eſtabliſhed themſelves, and founded a ſtate in the province of Agra. The Deccan and Bengal were uſurped by the Nizam and Aliverdy. Oude was ſeized on by Seifdar Jung, father to the late Sujah Dowlah, and grand-father to the ſubſequent reigning nabob of Oude, Azuph Dowlah; Allahabad by Mahomed Kooli; Malwa was divided between the Poonah Mahrattas, and ſeveral native princes, and Zemindars; Agimere reverted of courſe to its ancient lords, the Rajpoot princes; and the Mahrattas poſſeſſed, in addition to their ſhare of Malwa, the greateſt part of Guzerat, Berar, and Oriſſa, beſides their ancient domains in the Deccan. Abdalla, having eſtabliſhed his new kingdom very early in this reign, entered Lahore and Moultan (or the Panjab) with a view to the conqueſt of them. Thus the whole country of Hindooſtan proper was in commotion from one extreme to the other, and univerſal anarchy prevailed. Perhaps, in the annals of the world, it has ſeldom happened that the bonds of government were ſo ſuddenly diſſolved, over a portion of country containing at leaſt 60 millions of inhabitants. Upon the death of the Nizam in 1748, conteſts enſued for the throne of the Deccan, and occaſioned the interference of the French and Engliſh, as auxiliaries, in the wars that happened in conſequence of them, and that laſted till the year 1754. The reſult enabled the Engliſh to eſtabliſh their ſecurity and influence in the Carnatic; and the French, in addition to the ſolid advantage of getting poſſeſſion of the northern circars, valued at half a million ſterling, of annual revenue, gained the ſplendid but uncertain privilege of influencing the councils of the Nizam, by attending his perſon with their army. The Mogul was now become merely nominal, and the emperors were deprived in a great degree of their importance. Uſurpers, however, endeavoured to obtain the ſanction of their names, and the coin, throughout the whole tract, known by the name of the Mogul empire, is to this day ſtruck in the name of the nominal emperor. In 1753 the emperor Ahmed was depoſed by Gazi, after having reigned about ſix years.

In the preceding year the Mahrattas had been called in to aſſiſt in reducing the Jats, who were in poſſeſſion of Agra, and became troubleſome neighbours to the emperor; and in the preſent year the Berar Mahrattas eſtabliſhed themſelves in Oriſſa, by ceſſion from Aliverdy, nabob of Bengal, who was alſo compelled, for a ſhort time, to pay them a tribute for Bengal and Bahar, amounting to one-fourth of the clear revenue. This, together with the Mogul's former permiſſion to collect the arrears of revenue due to him, is the foundation of their claims on Bengal and Bahar; and which they have never relinquiſhed, although the times may have been unfavourable to their aſſerting them. Allumguire II. grandſon of Bahader Shah, was placed by Gazi on the nominal throne; but Abdalla, being at this time in poſſeſſion of Lahore, threatened Delhi, and in 1756 he laid the unfortunate city under heavy contributions. The emperor and his family were now reduced to the loweſt ſtate of royalty, alternately ſoliciting the aſſiſtance of Abdalla and of the Mahrattas, and as much in dread of their allies as of their enemies. In 1760 Allumguire was depoſed and murdered by Gazi. His ſon and ſucceſſor, Shah Aulum, made a fruitleſs attempt to reduce the Bengal provinces; but his expedition ended in 1761, by ſurrendering himſelf to the Britiſh, who had taken the field as allies to the nabob of Bengal. In 1759 and 1760 Hindooſtan was viſited, for the ſixth time, by Abdalla, and Delhi was again plundered and almoſt depopulated. The Mahrattas, in theſe times of confuſion and revolution, were gathering ſtrength; and, poſſeſſed of extenſive domains and vaſt armies, they projected the expulſion of Abdalla, and the reſtoration of the Hindoo government throughout the empire. Thus the principal powers of Hindooſtan were arranged into two parties, the Hindoos and Mahomedans; for the Jats joined the Mahrattas; and Sujah Dowlah, with the Rohillas, and other Mahomedan chiefs of leſs note, joined Abdalla; and a battle enſued in the plains of Carnawl and Panniput. There were ſaid to be 150,000 Mahomedans, and no leſs than 200,000 Mahrattas. Victory declared for Abdalla, after a very bloody and deſtructive battle; ſo that the Mahrattas were compelled to relinquiſh their pretenſions to univerſal empire in Hindooſtan; and from that period (1761) their power has been ſenſibly on the decline. (See MAHRATTAS.) Abdalla's influence at Delhi was now unlimited; and he determined to place Shah Aulum on the throne of his anceſtors. But he dreaded truſting himſelf in the hands of Abdalla, who ſet up Jewan Buckt, the ſon of Shah Aulum, for emperor, exacting an annual tribute; ſo that in reality Abdalla was emperor, and if he had been diſpoſed to eſtabliſh himſelf in Hindooſtan, he might probably have begun a new dynaſty of emperors in his own perſon. The territory of the young emperor, and of Nidjib Dowlah his guardian, was merely the northern part of the province of Delhi; and his father, Shah Aulum, the legal emperor, was without territory, and almoſt without friends. However, the expulſion of the nabob of Bengal, Coſſim Ally, by the Engliſh, in 1763, by drawing Sujah Dowlah into the quarrel, brought the wandering emperor again into notice; but he had more to hope from the ſucceſs of the Britiſh arms than thoſe of his patron, Sujah Dowlah; and the uninterrupted ſucceſs that attended them in 1763, 64, and 65, by the diſperſion of the armies of Coſſim Ally and of Sujah Dowlah, and by the entire conqueſt of Oude and Allahabad, left the emperor and Sujah Dowlah no hopes, but from the moderation of the victors. (See BENGAL.) The private diſtreſſes of Shah Aulum, the emperor or great mogul !, were ſo preſſing, during Mr. Haſtings's laſt journey to Oude (1784) that his ſon, Jewan Buckt, came to ſolicit aſſiſtance from the Engliſh. Since the peace of 1782, Madajee Sindia, a Mahratta chief, and the poſſeſſor of the principal part of Malwa, has taken the lead at Delhi; and has reduced ſeveral places ſituated within the diſtricts formerly poſſeſſed by the Jats, and it may be concluded, that Sindia has in view to extend his conqueſts on the ſide of Agimere, and to eſtabliſh for himſelf a conſiderable ſtate or kingdom. The provinces of Agra and Delhi, and their vicinity, are in a wretched ſtate. Having been the ſeat of continual war for near 50 years; the country is almoſt depopulated, and moſt of the lands, of courſe, lie waſte; and the wretched inhabitants dare not provide more than the bare means of ſubſiſtence for fear of pillage. Nothing but the natural fertility of the ſoil, and the mildneſs of the climate, could have kept up any degree of population, and rendered the ſovereignty of it, at this day, worth contending for. In the Mogul empire, many parts of it were 1000 miles diſtant from the ſeat of government; and accordingly its hiſtory is one continued leſſon to kings, not to graſp at too much dominion; and to mankind, to circumſcribe the undertakings of their rulers.

Among the new powers that aroſe on the downfal of the Mogul empire, we ought to mention the French and Engliſh. As for the Portugueſe, their power had paſt its meridian before this period; beſides, their views being commercial, they wiſely choſe inſular ſituations, ſuch as Goa, Bombay, Salſette, Diû, &c., and never appear to have poſſeſſed any very conſiderable extent of territory, although they kept on foot a large army of Europeans. The Dutch ſyſtem was nearly the ſame; and their proſperity, in a great meaſure, grew out of the misfortunes of the Portugueſe; who, having fallen under the dominion of Spain, became obnoxious as well to the jealouſy of rivalſhip, as to the revenge of the Hollanders. The French power was of ſhort duration, but brilliant while it laſted. It began during the government of M. Dupleix at Pondicherry in 1749, and ended in 1761 by the capture of this their principal ſettlement. (See CIRCAR.) The French appear to have been the firſt European power that trained the natives of India to regular diſcipline, as well as the firſt who ſet the example of acquiring territorial poſſeſſions, of any great extent, in India; in which they have been ſo ſucceſsfully followed by the Engliſh. Athough the Engliſh were firmly and peaceably eſtabliſhed in Bengal in 1765 (ſee BENGAL); yet within two years they were engaged in a very arduous conteſt in the peninſula, with Hyder Ally, the ſovereign of Myſore, leagued with the Nizam or Soubah of the Deccan. (See HYDER ALLY.) In 1767, when he had arrived at the height of his fortune, the war between him and the Engliſh broke out. Having bought off the Mahrattas, with a conſiderable ſum of money, and the reſtoration of ſome places he had taken from them, and detached the Nizam from the Engliſh, the war was proſecuted on both ſides with vigour. After ſome ſharp battles on the frontiers of the Carnatic and Myſore, a ſtrong detachment of the Britiſh army ſeized on Hyder's province of Coimbettore, a fertile diſtrict on the ſouth of Myſore, and commanding a ready way to Hyder's capital, Seringapatam. The war was continued with various ſucceſs during the years 1767, 1768, and part of 1769; when Hyder, with a ſtrong detachment of troops, chiefly horſe, eluding the Britiſh army, came within ſeven miles of Madras, and dictated a peace to the government of that place. This peace was diſreputable to the Britiſh councils only; ſince the hands of the commander in chief (general Joſeph Smith) were tied up, at the very moment, the moſt favourable for ſtriking a blow; and when Hyder, fearing the general's approach, could purchaſe his ſecurity no other way than by intimidating government into the meaſure of laying their commands on the general not to advance; by which meaſure he might poſſibly have cut Hyder and his detachment to pieces. The Nizam had, very early in the war, been detached from Hyder's alliance; chiefly by the ſtrong meaſure of ſending a detachment from Bengal into the heart of Golconda; which made him tremble for his capital, Hydrabad. The peace left matters much in the ſame ſtate as they were before the war; and whatever credit Hyder might have gained by its termination, was done away by the total defeat which he ſuffered in 1771 from the Mahratta army, within a few miles of his capital; into which he eſcaped with great difficulty, with a ſmall remnant of his army; afterwards defying the attacks of his numerous enemies, who had neither the ſkill nor the ordinary requiſites for a ſiege. His revenues and his army were improved by the few years of peace that followed. When the Mahrattas, in 1773, croſſed the Ganges to invade the Rohilla country, a brigade of the Britiſh army marched to the weſtern frontier of that country, and drove the Mahrattas acroſs the river. For this protection, the Rohilla chiefs had ſtipulated to pay Sujah Dowlah (the Britiſh army acting as his allies) 40 lacks of rupees; but when the ſervice was performed, the payment of the money was evaded. This breach of treaty led to the invaſion and conqueſt of the Rohilla country in the following year, 1774. A conſiderable tract of land in the Dooab was alſo conquered from the Jats and other adventurers, by which the boundary of Oude was advanced weſtward within 25 miles of Agra; north-weſtward, to the upper part of the navigable courſe of the Ganges; and ſouth-weſtward to the Jumnah river. In 1775, on the death of Sujah Dowlah, and the acceſſion of his ſon Azuph, a new treaty was made with the Britiſh government, by which the quantum of the ſubſidy for the uſe of the brigade was increaſed; and the province of Benares, which produced a clear revenue of 240,000*l.* per annum, was ceded to the company. The war with the Poonah Mahrattas occaſioned the march of a brigade acroſs the continent to the ſide of Bombay and Surat in 1778-9. This is ſaid to be the moſt brilliant epoch of the Britiſh military hiſtory in India. The brigade, which conſiſted of leſs than 7000 men, all native troops, commanded by European officers, marched from the banks of the Jumnah to the weſtern ſea, in ſpite of the Mahrattas, whoſe empire they traverſed almoſt the whole way. The French war breaking out at this time, and Hyder Ally expecting a communion of intereſts with the French, broke into the Carnatic, in the autumn of 1780, with 100,000 troops, foot and horſe, the beſt of their kind that had ever been diſciplined by a native of India. His ſucceſs in cutting to pieces colonel Baillie's detachment, and the conſequent retreat of the Carnatic army, occaſioned a deſpair of the Britiſh intereſts in that quarter, in the opinion of moſt people in Europe. Mr. Haſtings and ſir Eyre Coote thought otherwiſe; and there was ſent from Bengal, to the relief of the Carnatic, a brigade of about 7000 men, with ample ſupplies of money and proviſions. Until theſe troops and ſupplies arrived, the Britiſh poſſeſſed nothing more in the Carnatic than the ground occupied by their camps and fortreſſes. Under ſir Eyre Coote, Hyder was ſucceſsfully combated during two campaigns; at the end of which (October 1782) he found the poſſeſſion of his object, the Carnatic, at ſo great a diſtance, that he appeared to be ſincerely deſirous of peace. Hyder perceived the neceſſity of abandoning his ambitious projects; and he would actually have done ſo, in all probability, if he had not expected a more ſeaſonable and effectual co-operation on the part of the French, with whoſe aſſiſtance he hoped to effect our expulſion in a campaign or two. But he became more jealous of the French than of the Engliſh; and if the peace of Paris had left the Carnatic in his hands, inſtead of Mahomed Ally's, the French would have found the ill effect of his conduct reſpecting them; for he certainly never intended that they ſhould aſſume any character in it beſides that of merchants. With this diſpoſition of mind, Hyder died ſoon after, in 1783, and was ſucceeded by his ſon Tippoo, who made peace with the Engliſh in March 1784, at Mangalore. Tippoo was a prince of inferior abilities, and on a future occaſion he expiated his ill-arranged plans by his death, and the partition of his territories in 1799.

The eſtabliſhment of the Britiſh power in the Mogul empire has given a totally different aſpect to the political face of that country from that which it would have worn, if no ſuch power had ever exiſted. It is certain, that the Mahrattas, if they had been left to purſue their plans of conqueſt, would have acquired Corah and Allahabad in 1772, as well as the Rohilla country in 1773; and afterwards they might have over-run, at their leiſure, the province of Oude, and its dependencies. The Britiſh interference prevented this. On the other hand, Hyder might have kept poſſeſſion of the Carnatic. Some may be tempted to aſk, whether Hyder might not be as good a ſovereign as Mahomed Ally; or the Mahrattas, as Azuph Dowlah? Whatever may be the anſwers to theſe queſtions, ſays major Rennell, they have no reference to the Britiſh politics, which required that Hyder or Tippoo ſhould not poſſeſs the Carnatic, in addition to Myſore; and that the Mahrattas ſhould not poſſeſs Oude, or Rohilcund.

It has been ſuggeſted, that the Britiſh might have extended their poſſeſſions in Hindooſtan, *ad libitum*; lord Clive, however, thought, that the Bengal provinces and the circars, together with a moderate tract of land round Madras, and the iſland of Salſette, near Bombay, were fully equal to the meaſure of good policy, and to our powers of keeping poſſeſſion.

"The ſtate into which Hindooſtan has fallen," ſays Rennell, "ſince the downfal of the Mogul empire, is materially different from what it was before it was united under the Mahomedan conquerors. It was then parcelled out into ſeveral moderate kingdoms, which appear to have preſerved a degree of balance among themſelves; but now Hindooſtan and the Deccan may be ſaid to conſiſt of ſix (or, ſince the partition of Tippoo's territories, of five) principal ſtates, which hold, as tributaries, or feudatories, all the inferior ones; of which there are many. The reader will not be at a loſs to know, that the two Mahratta ſtates, the Nizam, Tippoo, the Seiks, and the Britiſh, are thoſe I mean; for whatever verbal diſtinctions may be made, a compulſive alliance is at leaſt a dependant, if not, in fact, a tributary ſituation." Rennell's Memoir, Ed. 3. 1793.

HINDOOSTAN, *Geography of*. This celebrated portion of Aſia, long known by the name of the empire of the Great Mogul, becauſe it was then ſubject to Mogul emperors, ſucceſſors of Timur, extends from cape Comorin on the ſouth, to the mountains which form the northern boundary of Caſhmire; that is, according to the moſt recent maps, from about the 8th to about the 35th degree of N. lat., being about 27 degrees, or nearly 1890 Britiſh miles. The northern boundary may be farther extended to the *Hindoo Koh*, and mountains running E. and W. on the N. of the province of Kuttore. In breadth this country extends from the river Araba, on the W. of the province of Sindi, to the mountains which ſeparate Bengal from Caſſay and the Birman dominions, that is, from about the 66th to the 92d degree of E. long., comprehending 26°, which, in the latitude of 25°, include 1600 Britiſh miles. On the N. the boundaries are the mountains already mentioned. On the W., towards Perſia, other ranges and deſerts form the frontier, till the river Araba terminates the ſouthern ſeparation. The other boundaries are ſupplied by the Indian ocean and bay of Bengal, where the eaſtern extremity is limited by the little river Naaf, and thoſe mountains which ſeparate the Britiſh poſſeſſions from Aracan, Caſſay, and Caſhar. The northern boundary generally conſiſts of the ſouthern ridges of the Thibetian Alps. On the N.E. of Bengal a ſimilar ridge divides Hindooſtan from the ſmall territory of Aſam, which ſeems an independent ſtate, never having formed a part of Hindooſtan, of dubious connection with Thibet, and hitherto unſubdued by the Birmans. According to the plan ſketched out and purſed by major Rennell, and judiciouſly adopted by Mr. Pinkerton, we may diſtribute the various regions of Hindooſtan into four general ſections: *viz.* the Gangetic, the Sindetic, the central, and the ſouthern.

Gangetic Hindooſtan, comprehending the countries on the Ganges, extends from the eaſtern boundaries of Bengal to the country of Sirhind, an interval of about 1000 Britiſh miles. Its greateſt breadth, from the ſources of the Chumbul, to the mountains of Sewalik, may be about 450 Britiſh miles; and the leaſt, on the W. of the province of Bengal, about 230. This ſection compriſes the provinces of Bengal, Bahar, Allahabad, Oude, and Agra; with part of Delhi and Agimere, and of Malwa in the ſouth. The Britiſh poſſeſſions in this part of Hindooſtan, including Bengal, Bahar, Benares, and ſome other diſtricts to the W., extend about 550 miles in length by 300 in breadth, forming a very powerful kingdom. The native population is computed at 10 or 11 millions of black ſubjects, excluſive of the Engliſh, whoſe number is not aſcertained. Sir William Jones, however, concluded from the actual enumeration of one province, that all the Britiſh poſſeſſions in Hindooſtan included no leſs than 30 millions of Hindoos; but major Rennell eſtimates the entire population in the time of Aurungzebe at 60 millions. The revenue of theſe Britiſh provinces is computed at 4,210,000*l.*; and deducting the expence of collection, military and civil charges, &c. being 2,510,000*l.*, the clear revenue will be 1,670,000*l.* (See BENGAL, and CALCUTTA, its chief city.) In the eaſtern part of the Britiſh poſſeſſions, the moſt conſiderable town is Dacca, which ſee. (See alſo MOORSHEDABAD and HOOGLY.) The capital of the province of Bahar is Patna; which ſee reſpectively. Benares (which ſee) is near the weſtern frontier of the Britiſh poſſeſſions. Beyond the Britiſh poſſeſſions towards the W. is Allahabad, in a province of the ſame name, ceded to the Engliſh in 1798; and to its S.W. are the diamond mines of Penna, in the ſmall province of Bundelcund, or Bundela, which ſee. The preſent capital of Oude is Lucknow; to the N.W., near the northern frontier, is Berilli; and about 50 miles W. from Lucknow is Canoge, which ſee. (See alſo AGRA and DELHI.) The fartheſt city in the ſouth of Gangetic Hindooſtan is Oujein; and the river Nerbudda may be conſidered as its moſt ſouthern limit. The ſurrounding ſtates on the E. and N. are the Roſhawn of Rennell or Aracan, Caſſay or Meckley, Aſam, Bootan, Nipal, Gorkah, Kamaoon, and Sirinagur, which ſee reſpectively.

Sindetic Hindooſtan, including the countries on the river Sindeh, or Indus, extends from the northern mountains of Caſhmire, and the Hindoo-Koh, in the north of Cabul, to the mouth of the Indus; being about 900 miles in length, and in medial breadth about 350. Beſides part of the provinces of Delhi and Agimere, it contains the extenſive province of Moultan, with Lahore, Caſhmire, Cabul, the frontier region of Candahar, and that of Sindi at the mouth of the Indus. The chief cities in this extenſive region are, Lahore, Caſhmire, Cabul, Ghizni, Candahar, Moultan, and Tatta; which ſee reſpectively.

Central Hindooſtan, comprehending the middle provinces, is chiefly bounded by Gangetic Hindooſtan on the N.; and on the W. by the ſandy deſart, and the ocean. Its ſouthern limit is the river Kiſtnah, with its tributary ſtream the Beemah; and on the E. it is waſhed by the bay of Bengal. The length from E. to W. *i. e.* from Jigat point to cape Palmiras is little leſs than 1200 miles, and the medial breadth is about 400. In this ſection are comprehended the province of Oriſſa, with part of Golconda, Berar, Dowlatabad, Candeiſh, and Guzerat, beſides other diſtricts of inferior name; and on the eaſtern ſhore are the Britiſh provinces of the Circars. The chief cities are Ahmedabad, taken by the Engliſh in 1780, and ceded to the Mahrattas in 1783, Cambay, Surat, Bombay, Burhampour, Ellickpour, Nagpour, Aurungabad, and Dowlatabad.

Southern Hindooſtan, called the Deccan, or South, and alſo Carnada or the Carnatic, is bounded by the river Kiſtnah, and its moſt northern ſubſidiary ſtreams flowing into the Beehmah, and may be conſidered as extending from the latitude of Bombay to the ſouthern point of cape Comorin, about 830 miles in length, and about 350 of medial breadth. (See DECCAN.) In this diviſion may alſo be included the iſland of Ceylon, the coaſts of which are now poſſeſſed by the Engliſh, who have ſupplanted the Dutch; while the native princes retain the extenſive inland parts. In addition to the diſtrict round Madras, the Britiſh power was extended in 1792 and 1799, over wide provinces in the ſouth and weſt of Myſore; and Seringapatam, the capital, is alſo in our poſſeſſion; ſo that our territories in this portion of Hindooſtan only yield in extent and conſequence to thoſe on the Ganges. The chief cities and towns in this diviſion are Seringapatam, the moſt important; Salem and Attore on the E.; Dindigul, Coimbetore, and Palicand, on the S.; and on the W. coaſt Paniany, Ferokabad, Calicut, now nearly deſerted, Tellicherry, and Mangalore; and on the N. Carwar, within 40 miles of the Portugueſe ſettlement of Goa, while on the S. we approach within a like diſtance of Cochin. In the Carnatic we have Madras, and not far from the weſtern frontier of our ſettlement at Madras is Arcot, eſteemed the capital of the Carnatic. To the ſouth of theſe Britiſh poſſeſſions are Tranquebar, a Daniſh ſettlement in the kingdom of Tanjore and Pondicherry, formerly the principal ſettlement of the French. On the weſtern coaſt, or that of Malabar, ſtands Cochin, which ſee. To the north of the Britiſh territories are Goa, Poona, Viſiapour, Hydrabad, Calberga, &c.

The three leading powers of Hindooſtan are the Britiſh, the Mahrattas, and the Nizam; to which may be added on the W., or Sindetic diviſion, the Seiks, and Zemaun Shah, or whatever prince holds the eaſtern diviſion of Perſia. The following table, extracted by Mr. Pinkerton, with a few alterations, from major Rennell's Memoir, will convey a ſatisfactory view of the ſtate of territory, and the ruling powers in Hindooſtan.

I. Britiſh Poſſeſſions.

1. Bengal and Bahar, with the Zemindary of Benares.
2. Northern Circars, including Guntoor.
3. Barra-Mahal, and Dindigul.
4. Jaghire in the Carnatic.
5. The Calicut, Palicaud, and Coorga countries.
6. Coimbetore, Canara, and other diſtricts acquired in 1799.

II. Britiſh Allies.

1. Azuph Dowlah, Oude.
2. Mahomed Ally, Carnatic.
3. Travancore, and Cochin.

III. Mahratta States.

Poona Mahrattas.	Tributaries.
1. Malwa.	1. Rajah of Jyenagur.
2. Candeiſh.	2. ———— Joodpour.
3. Part of Amednagur, or Dowlatabad.	3. ———— Oudipour.
4. Viſiapour.	4. ———— Narwah.
5. Part of Guzerat.	5. ———— Gohud.
6. ——— Agra.	6. Part of Bundelcund.
7. ——— Agimere.	7. Mahomed Hyat, Bopaltol.
8. Allahabad.	8. Futty Sing, Amedabad.
9. Sanore, Bancapour, Darwar, &c. ſituated in the Dooab, or country between the Kiſtnah and Toombuddra rivers.	9. Gurry Mundella, &c.
Berar Mahrattas.	**Tributary.**
1. Berar.	
2. Oriſſa.	Bambajec.

IV. Nizam Ali, Soubah of the Deccan.

1. Golconda.
2. Aurungabad.
3. Beder.
4. Part of Berar.
5. ——— Adoni, Rachore, and Canoul.
6. Cuddapali, Combam, and Gandicotta.
7. Part of Gooty, Adoni, and Canoul.
8. Part of the Dooab.
9. Other diſtricts acquired in 1799.

V. Seiks.

Lahore, Moultan, and the weſtern parts of Delhi.

As the other great power chiefly extends over Perſia, and may be regarded as foreign, it only remains to mention the ſmall ſtates.

1. Succeſſors of Zabeda Cawn. Schaurunpour.
2. Jats.
3. Pattan Rohillas, Furruckabad, Rohilcund.
4. Adjig Sing, Rewah, &c.
5. Bundelcund, or Bundela.
6. Little Ballogiſtan.

To which may now be added the Raja of Myſore.

Before the fall of Tippoo in 1799, the Britiſh poſſeſſions were ſuppoſed to contain 197,496 ſquare Britiſh miles, being about 60,000 more than are compriſed in the united kingdoms of Great Britain and Ireland; and the number of inhabitants was computed at 10 millions. The acquiſition in 1799 probably adds 15,000 ſquare miles, and the population ſubject to Great Britain is ſuppoſed to be 12 or 14,000,000. The net revenue exceeded 3 millions before the ceſſions by Tippoo in 1792, computed at 400,000*l.*; while thoſe in 1799 do not appear much to exceed half that ſum. For an account of the Mahrattas, Seiks, Jats, and Afghans, ſee theſe articles reſpectively.

The original population of this extenſive country may be generally conſidered as indigenous, yet it preſents conſiderable varieties; thoſe in the northern parts being fairer, and thoſe in the ſouthern almoſt or wholly black, but without the negro wool or features. The tinge, however, of the women and ſuperior claſſes is deep olive, with ſometimes a ſlight and agreeable mixture of the ruddy, and the Hindoo form and features may be ſaid to approach the Perſian or European ſtandard.

Of the mythology and religion of the Hindoos we have already given an account under the article Gentoos. (See alſo Brachmans and Cast.) The governments are as various as the ſeveral ſtates. Although the Bramins are the moſt dignified caſt, the ſovereignty has been abandoned to the military caſt, and the monarch was preſumed to be proprietor of all the lands, except thoſe belonging to the church. The "Ryots" held their poſſeſſions by leaſe at a fixed rate, and conſidered them as perpetual. The "Zemindars" were, as ſome conceive, only collectors of the royal rents from the Ryots, or farmers; but, as others imagine, they were learned gentlemen, who had an hereditary right to theſe rents, upon paying a ſettled proportion to the crown. The laws are blended intimately with their religion; and an account of them may be found in the code publiſhed by Mr. Halhed, and referred to under Gentoos.

The population of this extenſive part of Aſia conſiſts of Hindoos blended with Perſians, Greeks of Bactriana, ancient Scythians, Mahometans of various origins, Patans or Afghans from the mountains towards Perſia, Moguls, including Tartars and Mahometan tribes from the eaſt of the Caſpian, who, with the Arabs and Perſians, are generally called Moors; and it is ſuppoſed to amount to 60 millions, of which number the Britiſh poſſeſſions may probably contain a quarter. In the time of Aurungzebe the general revenues of Hindooſtan were computed at 32 millions ſterling, equal, allowing for the comparative price of the productions of the country, to 160 millions ſterling in modern England. The manners and cuſtoms of the Hindoos are very much incorporated with their religion, and are univerſally ſimilar, with ſome few exceptions in mountainous and other peculiar diſtricts. Their houſes and dreſſes are of the moſt ſimple kind, and to a Bramin nudity is no reproach. Their amuſements conſiſt of religious proceſſions, and though dancing girls are numerous, theatrical exhibitions are leſs common than in countries farther to the eaſt. The general ancient language of Hindooſtan is believed to have been the *Sanſcrit;* which ſee: but of this there are various dialects in different provinces. Of their literature we have had many confuſed and contradictory reports; but their moſt important books are the Vedas. (See Brachmans.) Dr. Robertſon alleges ſeveral conſiderations in proof of the ancient and high civilization of the Hindoos; but againſt his arguments to this purpoſe others have advanced many objections. (See Cast.) The arguments of M. Bailly and others for the antiquity of the Hindoo aſtronomy have been attacked with great force by Mr. Bentley, in a learned diſſertation publiſhed in the ſixth volume of the Aſiatic Reſearches, 1799: and the reſult appears to be, that the ſyſtem, ſo highly extolled and traced to remote antiquity, cannot be of a greater age than 731 years; or that it was compoſed about A. D. 1068.

The chief univerſity in the north is that of Benares; and in the Deccan, the academy of Triciur, on the Malabar coaſt, is alſo in great repute: and at Cangiburam, in Carnate, we are told, there is ſtill a celebrated Brahman ſchool, which, according to the teſtimony of Ptolemy, exiſted in the firſt century of the Chriſtian era, and its members, it is ſaid, are equal in celebrity to the Brahmans of Benares. The manufactures of Hindooſtan have been celebrated from a remote antiquity, particularly thoſe of muſlins and other cotton fabrics. Piece goods, as we call them, are mentioned by the authors of the Periplus, and other ancient writers, who commend both the manufacture and the beautiful colours of the dyes. In the time of Strabo, the Hindoos were famous for elegant works in metals and ivory. Hindooſtan, however, is not celebrated at this day for any manufacture, except thoſe of muſlins and calicoes; the other exports conſiſting of diamonds, raw ſilks, with a few wrought ſilks, ſpices, drugs, &c.

Painting and ſculpture are in their infancy; and yet the temples are majeſtic and ſolemn. Hindooſtan has, in all ages, been chiefly famed for its native products; its diamonds, and ſome other precious ſtones, its ſpices, aromatics, and drugs: rice alſo, ſugar, and many articles of luxury, are products of Hindooſtan.

The climate and ſeaſons are conſiderably diverſified by difference of latitude and local ſituation; nevertheleſs, through the wide regions of Hindooſtan there is ſome ſimilarity of climate. (See Bengal.) Although in Thibet the winter nearly correſponds with that of Switzerland, and other parts of Europe, in the whole extent of Hindooſtan, except in Caſhmire, there can hardly be ſaid to be a veſtige of winter, except the thick fogs of our November; and exceſſive rains, or exceſſive heats, form the chief varieties of the year. The aſpect of the country is very much diverſified; but there are no mountains of any very great height; the Gauts (which ſee) not being eſtimated at above 3000 feet. The vaſt extent of Hindooſtan conſiſts chiefly of large plains, fertilized by numerous rivers and ſtreams, and interſperſed with a few ranges of hills. The periodical rains and intenſe heats produce a luxuriance of vegetation, almoſt unknown to any other country in the globe; and the variety and richneſs of the vegetable creation delight the eye of every ſpectator. The ſoil in ſome places is ſo excellent, that it conſiſts of black vegetable mould to the depth of ſix feet. Rice is the chief grain, which is induſtriouſly watered on the dry ſandy lands of the coaſt of Coromandel. Maize and the ſugar-canes and cotton are alſo much cultivated. But the implements of huſbandry are in general ſo imperfect, that they owe to the fertility of the land what they want either in ſkill or diligence of agricultural operations.

The two principal rivers of Hindooſtan are the Ganges and Burrampooter, which ſee; the chief tributary ſtreams of the Ganges are the Gagra or Sarjoo, the Jumnah, which receives the Chumbul, Betwa, and ſeveral others, and the Soan. The Indus, or Sindeh, with its confluent ſtreams, is alſo a principal object. Its tributary ſtreams are very numerous; ſee Sindeh. The chief rivers of the central part of Hindooſtan are the Pudda, Nerbudda, and Taptee, on the W.; the Subanreeka, the Godaveri, &c. In the ſouthern part of Hindooſtan are the Kiſtnah, Pennar, Paliar, and Caveri. This country has few lakes; thoſe of Colair, Chilka, Pullicat are mentioned by Rennell. The mountains, diſcriminated by their modern names, are the Tipera, Garro, Himmaleh, Hindoo-Koh, Gauts, &c. Hindooſtan abounds with foreſts, ſome of which are near the mouths of the Ganges, &c. others in the rude unexplored regions on the W. of the Circars. On the eaſt of the Indus is a ſandy deſert, between 4 and 500 miles long, and from 60 to 150 miles broad; it is ſtyled that of Agimere, and was known to Herodotus. The botanical productions of this fertile country are too numerous and various to be recited. Its cattle are frequently of a large ſize, with a hunch on the ſhoulders; and its ſheep are covered with hair inſtead of wool, except in the moſt northern parts. Antelopes, camels, elephants, apes and monkies, dogs, wild boars, bears, wolves, foxes, jackals, hyænas, leopards, panthers, lynxes, and many other quadrupeds are found in this country. It would be endleſs to enumerate the birds, fiſhes, and inſects that abound in Hindooſtan. We ſhall conclude this article with mentioning ſome of its moſt celebrated mines. Thoſe of the diamond are near Viſiapour and Golconda, at Raolconda, in a diſtrict on the river Mahanada, S. of Sumboulpour, Gandicotta on the river Pennar, and Penna in the territory of Bundelcund, about 60 miles S. of the river Jumnah, which flows into the Ganges. (See DIAMOND.) Robertſon's India. Raynal's Indies, vol. i. Rennell's Memoir, paſſim. Pinkerton's Geography, vol. ii.

HINDOOSTANEE, the vernacular language of the Hindoos. It is alſo frequently denominated *Hindu*, *Oordoo*, and *Rekhtu*. It is compounded of Shanſcrit, Perſian, and Arabic. The firſt of theſe was the great original language of India, and to it may be traced ſuch terms in the provincial dialects as are of truly Indian original: and ſuch words as bear no relation to the Shanſcrit roots are either Perſian or Arabic.

The Perſian was carried into India by the Mogul conquerors, and being the language of the court, naturally gained a footing in the law and in the revenues. It has alſo for ſome centuries been the common medium of negotiation between the ſeveral ſtates of Hindooſtan; and from thence became an almoſt indiſpenſible qualification for thoſe who were engaged in the management of Indian affairs. The Perſian is ſtill uſed by all the Mogul officers of government, in their ſeveral departments of accounts and correſpondence. Thus the Hindooſtanee received a great influx of Perſian terms, and many peculiarities of the Perſian idiom. The original language of the Hindoos, from a ſimilar cauſe, became debaſed by a copious mixture with Arabic. When the Mahometan invaders firſt ſettled in India, from the neceſſity of having ſome medium of communication with the natives, whom they had conquered, they applied themſelves to the ſtudy of the Hindooſtanee dialect. The knowledge of the Shanſcrit was impracticable, from the invincible averſion of the Gentoos to teach to foreigners, and to conquerors, the uſe of their own tongue. The latter, therefore, had no reſource but to introduce, as far as they could, their own language. New adventurers, continually arriving, kept up a conſtant influx of exotic words, and the heterogeneous maſs gradually increaſed its ſtock, as conqueſt or policy extended the boundaries of its circulation. But theſe alterations affected words only. The grammatical principles of the original Hindooſtanee, and the ancient forms of conjugation and inflexion remained the ſame; and whilſt the primitive ſubſtantives were excluded, or exchanged, the verbs maintained both their inflexions and their regimen. The Shanſcrit, indeed, has a dual number, both to nouns and verbs, the Hindooſtanee to neither. Verbs in Shanſcrit have the ſame form for both the maſculine and feminine genders. The Hindooſtanee verbs are diſtinguiſhed by different terminations for the different ſexes, like thoſe of the Arabic. Theſe are the capital outlines of diſſimilarity between the Shanſcrit and the Hindooſtanee; but in the original appropriation of particular words to particular ſenſes, in the idiomatic turns of expreſſion, and complexion of ſpeech, we may obſerve the ſtrongeſt family likeneſs. The characters alſo, peculiar to the Hindooſtanee, are exactly the ſame with thoſe of the Shanſcrit, but of a ruder ſhape, yet ſtill exhibiting a more accurate reſemblance than is found in many of the Greek letters in inſcriptions of different eras.

From the above ſtatement it is obvious, that the primitive Hindooſtanee tongue has by no means preſerved its purity or its univerſality to the preſent age: for the modern inhabitants of India vary almoſt as much in language as in religion: and at preſent thoſe perſons are thought to ſpeak this compound idiom with the moſt elegance, who mix with rare Indian verbs the greateſt number of Perſian and Arabic nouns. Such of the Hindoos as have been connected with the Muſſulman courts, or admitted to any offices under that government, have generally complimented their maſters by a compliance with theſe literary innovations. But the Bramins, and all other well-educated Gentoos, whoſe ambition has not overpowered their principles, ſtill adhere with a certain conſcientious tenacity to their primeval tongue.

As the intercourſe and communication of the Muſſulmen with the natives of India was greater or leſs, according to certain circumſtances and ſituation, the Hindooſtanee naturally varied conſiderably with reſpect to the prevalence of one or other of the three great languages compoſing it. This circumſtance, ſays Mr. Bailey in his Collegiate *Theſis* on the importance of this language, will ſanction a diviſion of it into three diſtinct dialects, namely, the priſtine or country; the middle or familiar; and the learned or court dialect; each of which are reſpectively uſeful in different diſtricts. In the firſt or priſtine dialect, there is a ſmaller admixture of foreign words. Hence this is more nearly related to the original dialect of the country. In the ſecond, or familiar dialect, the number of foreign words bears nearly an equal proportion to the original ones. In the third, or court dialect, Arabic and Perſian words are by far the moſt numerous.

In recommending the ſtudy of this language, the abovementioned author affirms that to the merchant, the traveller, the civil and military officer, the philoſopher and phyſician, in ſhort, to every one who carries on concerns of any moment in India, the Hindooſtanee language is more generally neceſſary and advantageous than any other. For this reaſon it is of late become an object of indiſpenſible attainment to all thoſe young gentlemen who are deſtined to engage in Indian affairs. In the whole of the vaſt country of Hindooſtan, ſcarcely any Muſſulman will be found who does not underſtand and ſpeak the Hindooſtanee. Every Hindoo alſo, of any diſtinction, or who has the leaſt connection either with the Muſſulmen or the Britiſh government, is acquainted more or leſs with this language. It is moreover the general medium by which foreigners, ſuch as the Portugueſe, Dutch, Danes, French, Arabs, Turks, Americans, Perſians, Moguls, and Chineſe communicate their ideas to each other. In almoſt, too, all the armies of India this appears to be the language univerſally uſed: though many of the individuals compoſing them muſt be better acquainted with the dialects peculiar to their reſpective diſtricts. Finally, from Cape Comorin to Cabul, a country about 2000 miles in length, and 1400 in breadth within the Ganges, few perſons will be found in any large villages or towns, which have been conquered or much frequented by Muſſulmen, who are not ſufficiently converſant in the Hindooſtanee, and in many places beyond the Ganges this language is current and familiar.

The dialect called the *Moors*, is that mixed ſpecies of Hindooſtanee which owed its exiſtence to the Mahometan conqueſts. In this idiom ſeveral elegant poems and tales have been compoſed by learned Perſian and Mogul authors, and are ſtill extant in the libraries of the curious. Theſe are always written in the Perſian hand, which is by no means calculated for expreſſing the ſound either of the Hindooſtanee vowels or naſal conſonants. The Mahometans of the lower rank have a few books on religious ſubjects in this language and in the *Naagore* characters; which are alſo uſed by ſome of them in their petty accounts. Europeans, on their arrival in India, reduced to a neceſſary intercourſe with Mahometan ſervants or Sepoys, habitually acquire from them this idiom in that imperfect and confuſed ſtate, which is the conſequence of the menial condition of their inſtructors. Yet this curious ſyſtem of ſtudy hath produced more than one attempt to a grammar and vocabulary.

Theſe attempts are unworthy of notice; but the labours of Dr. Gilchriſt deſerve particular attention. His Engliſh and Hindooſtanee dictionary, which was intended to be followed by another part in Hindooſtanee and Engliſh, is a highly valued production, and his grammar, as containing a copious detail of the language with numerous ſpecimens of Indian poetry, is a performance not leſs valuable and uſeful to the oriental ſtudent, though it cannot boaſt the ſimplicity, the taſte, the philoſophical acuteneſs, and the extenſive acquaintance with the claſſical languages which diſtinguiſh the Perſian grammar of ſir W. Jones, or Mr. Halhed's grammar of the Bengaleſe. But Dr. Gilchriſt's chief merits conſiſt in the attempt which he has made to teach the Hindooſtanee language in European characters. To effect this purpoſe with ſucceſs, required great ſkill and diligence, as many European letters correſpond as little in ſound, as they do in form, to thoſe of Aſia. There are two general modes, (ſays ſir W. Jones, in his Diſſertation on the Orthography of Aſiatic Words,) of exhibiting Aſiatic words in our own letters; they are founded on principles nearly oppoſite, but each of them has its advantages, and each has been recommended by reſpectable authorities. The firſt profeſſes to regard chiefly the pronunciation of the words intended to be expreſſed, and this method, as far as it can be purſued, is unqueſtionably uſeful; but new ſounds are very inadequately preſented to a ſenſe not formed to receive them; and the reader muſt, in the end, be left to pronounce many letters and ſyllables precariouſly; beſides that, by this mode of orthography all grammatical analogy is deſtroyed, ſimple ſounds are repreſented by double characters, vowels of one denomination ſtand for thoſe of another; and poſſibly with all our labour we perpetuate a provincial or inelegant pronunciation. The ſecond ſyſtem of Aſiatic orthography conſiſts in ſcrupulouſly rendering letter for letter without any particular care to preſerve the pronunciation. The firſt of theſe methods had an advocate in major Davy, an elegant Perſian ſcholar, and a member of the Aſiatic ſociety; the ſecond found two able ſupporters in Mr. Halhed and Dr. Wilkins, to whom ſir W. Jones bears the honourable teſtimony of having done more towards promoting Indian literature, than Europe or India can ever ſufficiently acknowledge. The former juſtly remarks that the two greateſt defects in the orthography of any language, are the application of the ſame letter to ſeveral different ſounds, and of different letters to the ſame ſound, and theſe defects he truly pronounces to be ſo common in Engliſh that he was exceedingly embarraſſed in the choice of letters to expreſs the ſound of the Bengal vowels, and was at laſt by no means ſatisfied with his own ſelection; Dr. Gilchriſt has adopted neither of the above modes, but embraced a ſcheme which affords the advantages of both, without the inconveniences peculiar to either. His plan is to define the ſound of the European letters, and then to uſe them in every word as repreſentatives of the Hindooſtanee elements, without ever the ſlighteſt variation. The Indian letters ſeldom experience any change of pronunciation, and it was only neceſſary to adjuſt their ſound to our characters, in order to expreſs them with correſponding uniformity. By this plan he has paid due attention to the pronunciation of each word, and of its elements. His ſyſtem is peculiar to himſelf, and is likely to be rejected by thoſe who cannot pay to it the time and attention neceſſary to perceive its excellence, and to reap its advantages. The ſcholar who can make this ſacrifice, will readily acknowledge the uſefulneſs of Dr. Gilchriſt's ſyſtem, though he cannot fail to lament the pedantry and want of ſimplicity which disfigures his works.

HINDOWN, in *Geography*, a town of Hindooſtan, in the Subah of Agra; 25 miles N. of Kerowly. This has been a large city, and contains extenſive buildings, but, in conſequence of the depredations of the Mahrattas, is now thinly inhabited.

HINE, or Hind, in the *Saxon Language*, ſignifies a ſervant, or one of the family; but it is now taken in a more reſtrictive ſenſe, for a ſervant at huſbandry; and the maſter hine is he that overſees the reſt.

HING, in *Geography*, a town of China, of the ſecond rank, in the province of Kiang-nan. N. lat. 32° 35′. E. long. 305 26′.

HINGES, in *Building*, thoſe neceſſary iron ligaments, by means whereof doors, lids, folds of tables, &c. make their motion, whether of opening, ſhutting, or folding.

The ſpecies of hinges are many, *viz.* bed, box, butts, caſement; caſting, cheſt, coach, deſk, dove-tails, eſſes, folding, garnets, weighty, ſide, ſide with riſing joints, ſide with ſquares, ſcrew, ſcuttle, ſhutter trunk of ſundry ſorts, and hook and eye hinges.

HINGHAM, in *Geography*, is a ſmall town and pariſh in the hundred of Forchoe, in the county of Norfolk, England, 96 miles diſtant from London, and contains 179 houſes, and 1203 inhabitants. It was anciently part of the poſſeſſions of the Marſhals, afterwards earls of Pembroke; from whom it came to the Morleys, and thence to the Wodehouſes, in which family it is at preſent veſted. The church, which is a handſome ſtructure, with a large and lofty tower, was rebuilt by Remigius de Hetherſete, the rector, aided by the munificence of the patron, John le Marſhall, in the reign of Edward III. Several chapels and numerous images decorated the interior prior to the Reformation. In the church were held ſeven guilds, each having a ſtipendiary chaplain ſerving at the reſpective altars, conſtituting a choir. On the north ſide of the chancel is a noble canopied monument, reaching from the floor to the roof, richly decorated with ſtone imagery and tracery: many of the braſſes are gone, but from the arms remaining it appears to have been erected to the memory of Thomas lord Morley, who died in the reign of Henry VI. Hingham has a weekly market on Saturdays, and three annual fairs. Blomefield's Hiſtory and Antiquities of Norfolk.

Hingham, a poſt-town of America, in Suffolk county, Maſſachuſetts, ſituated on a ſmall bay, S. from Boſton bay. It contains a number of houſes, compactly built, two congregational churches, and a well endowed ſchool. It is 19 miles S.E. of Boſton. The townſhip is about four miles ſquare, including two pariſhes, incorporated in 1635, and containing 2112 inhabitants.

HING-HOA, a city of China, of the firſt claſs, in the province of Fo-kien, near the ſea-coaſt. It is adorned with ſeveral triumphal arches and majeſtic public buildings. The adjacent country furniſhes rice and ſilk in abundance. N. lat. 25° 28′. E. long. 118° 56′.

HING-NGHAN, a city of China, of the ſecond rank, in Chen-ſi, on the river Han. N. lat. 32° 34′. E. long. 108° 54′.

HINGWANG, in *Natural Hiſtory*, a name given by the people of the Eaſt Indies to a ſpecies of red arſenic, which they uſe in painting and in medicine. They find it in and about the copper mines. It is calcined ſeveral times, in order to fit it for internal uſe. In painting, it makes a very fine orange-colour; but when mixed with ceruſe, it makes a lemon-colour, and any other ſhade of yellow.

It ſeems to contain ſome portion of ſilver, and ſome cinnabar.

HINIGAN, in *Geography*, a town of the Arabian Irak; 100 miles W. of Baſſora.

HINISBURG, a poſt-town of America, in Chittenden county, Vermont, E. of and joining Charlotte on lake Champlain, containing 933 inhabitants.

HINKA, a lake of Chineſe Tartary, about 108 miles in circumference. N. lat. 44° 35′. E. long. 132° 29′.

HINKAN, a chain of mountains of Chineſe Tartary, which reach from N. lat. 55° to 53° and from E. long. 134° to 137°.

HINLOPEN STRAITS, a channel of the North ſea, between North-Eaſtland and Spitzbergen.

HINNERJOKI, a town of Sweden, in the government of Abo; 30 miles S. of Biorneborg.

HINNULUS, in *Zoology*, a hind; the young of the deer or goat kind.

HINNULUS. See MOSCHUS *Pygmæus*.

HINNY, a ſpurious or hybrid quadruped, the produce of the horſe with the female aſs. Its ſize is leſs than that of the horſe, the ears and mane the ſame as in that animal; the colour is redder, and the tail like that of the female parent.

HINOJARES, in *Geography*, a town of Spain, in the province of Jaen; 15 miles S.E. of Ubeda.

HINOJOSA, a town of Spain, in the province of Leon; 25 miles N.N.W. of Civdad Rodrigo.—Alſo, a town of Spain, in the province of Eſtremadura; 16 miles N. of Llerena.—Alſo, a town of Spain, in New Caſtile; 10 miles N. of Molina.

HINOJOSAS, LAS, a town of Spain, in New Caſtile; 36 miles S. of Hueta.

HINSDALE, a townſhip of America, in Cheſhire county, New Hampſhire, on the eaſt bank of Connecticut river, oppoſite to Vernon in Vermont, incorporated in 1753, and containing 634 inhabitants; 38 miles above Northampton.

HINZUAN. See JOANNA.

HIO, a town of Sweden, in Weſt Gothland, ſeated on the Wetter lake, with a good ſalmon fiſhery; 80 miles N.E. of Gotheborg. N. lat. 58° 20′. E. long. 13° 58′.

HIORRING, a town of Denmark, in N. Jutland, and dioceſe of Aalberg, formerly a large city and the ſee of a biſhop, with three churches; but in 1693 almoſt deſtroyed by fire, ſo that the biſhopric was removed to Aalberg by Frederic II.; 27 miles N.N.W. of Aalberg. N. lat. 57° 27′. E. long. 10°.

HIORTED, a town of Sweden, in the province of Smaland; 60 miles N. of Calmar.

HIORTOE, a ſmall iſland of Denmark, near the W. coaſt of Taaſinge. N. lat. 54° 53′. E. long. 10° 30′.

HIP, in *Architecture*, a piece of timber placed between every two adjacent inclined ſides of a hipped-roof, for the purpoſe of fixing the jack rafters. For the manner of finding the length and backing of the hips, ſee HIPPED *Roof*.

HIP, a particular part of an animal. See HAUNCH.

HIP, in the *Materia Medica*, the fruit of the cynoſbatus ſhrub, wild briar, hip-tree, or dog-roſe. See ROSA *Canina*.

Hips are agreeably dulco-acid, and ſtand recommended as cooling reſtringents, in bilious fluxes, ſharpneſs of urine, and hot indiſpoſitions of the ſtomach; but they are very little uſed in the ſhops, except in the *conſerve*, which ſee.

HIP-*gout*, in *Medicine*. See SCIATICA.

HIP-*joint*, *Diſeaſe of*. What is uſually underſtood by the diſeaſe of the hip-joint, in *Surgery*, is a diſtemper very analogous to the white ſwelling of other articulations. By ſeveral writers it is treated of under the name of *iſchias*, which term, however, has been moſtly applied to rheumatic affections of the hip. Like the white ſwelling, the diſeaſe of the hip-joint probably has its varieties, ſome of which are undoubtedly connected with ſcrofula, while others cannot be ſuſpected of having any concern with a ſtrumous habit. Mr. Crowther obſerves, that no caſe has hitherto occurred to him, in which the patient was not of the latter kind of conſtitution, although, if we underſtand him rightly, he adds an exception in regard to ſome of the caſes, which are produced by accidents. (On White Swelling, &c. p. 257, 258, edit. 2.) We believe, that, in a given number of caſes, there are more diſeaſed hips, quite independent of ſcrofula, than there are white ſwellings of other joints. It is univerſally acknowledged, by all experienced ſurgeons, that young ſubjects are moſt liable to ſcrofulous diſeaſes, and, of courſe, to that affection of the joints, which is commonly conſidered to be connected with a ſtrumous conſtitution. If a perſon live to the age of five and twenty, perfectly free from all ſcrofulous ſymptoms, the hazard of his ever becoming afterwards afflicted with a true ſcrofulous complaint may be regarded as almoſt entirely paſt. Hence, all morbid affections of the joints, firſt occurring after this period of life, and under ſuch circumſtances, cannot be reaſonably conſidered as having any connection with ſcrofula.

The generality of ſurgical authors ſeem to agree, that the diſeaſe of the hip-joint is moſt commonly met with in children under the age of fourteen, and, in this reſpect, it is exceedingly analogous to the true white ſwelling. But no age is exempt from the malady: ſo that, though children form a large proportion of thoſe ſubjects who are afflicted, yet the number of adults, and even of old perſons, is much more conſiderable, in a given number of theſe caſes, than we find to occur in the ſame number of caſes, in which the knee is diſeaſed. Such is our reaſon for believing, that there are more hip caſes unconnected with ſcrofula, than there are examples of white ſwellings being ſimilarly circumſtanced. The obſervation is of courſe only applied to a definite number of caſes of each diſeaſe; for the much more frequent occurrence of morbid knees, ankles, wriſts, and elbows, would deſtroy the accuracy of the remark, if taken in a general ſenſe.

The approach of the hip diſeaſe is far more inſidious, than that of a white ſwelling. The latter is generally preceded by ſevere pains; while the only fore-runner of the former is frequently a ſlight weakneſs and limping of the affected limb. This ſtate is too often overlooked, and, when noticed by men little verſed in the profeſſion, is commonly treated on principles the moſt repugnant to ſurgical ſcience. Embrocations are generally preſcribed, without any injunction to keep the limb in a quiet ſtate. The application is alſo oftentimes made to the knee, or other part of the extremity; for as there is frequently an uneaſineſs about that joint, when the hip is affected, and as no pain whatever is ſometimes mentioned, as occurring in the latter ſituation, till a more advanced period of the malady, it is not uncommon to ſee careleſs practitioners directing their remedies to ſome ſituation very different from that of the diſeaſe. This combination of neglect and ignorance is the more to be lamented, inaſmuch as the incipient period of the complaint is the only one in which a favourable prognoſis can ever be made, mere reſt, and repeated topical bleeding, having now more effect, in the courſe of a fortnight, than large painful iſſues will afterwards generally have in the long ſpace of a twelvemonth.

The firſt diagnoſtic ſymptoms of diſeaſe in the hip-joint, if we merely look for them in the ſituation of that articulation, are not particularly conſpicuous. It is true, that a fixed pain behind the trochanter major, in ſome inſtances, very ſoon excites the attention of the ſurgeon to the ſeat of the morbid affection. But mere pain in a joint, quite free from viſible enlargement, and external change of colour, is generally diſregarded as a complaint of no importance in young ſubjects, and as a mere rheumatic, or gouty affection in adults. Even when the pain begins to be ſevere, it is commonly not confined to the ſeat of the diſeaſe, but ſhoots downward, in the courſe of the vaſtus externus muſcle, to the knee, and along the outer part of the fibula to the malleolus externus. The patient often refers moſt of his painful ſenſations to the groin. In ſhort, there is no particular ſymptom occurring in the preciſe ſituation of the morbid affection, ſo as to form an infallible pathognomonic mark of its exiſtence. But ſtill the characters of the diſeaſe are very ſtrong, when examined by a ſurgeon, who has paid attention to the ſubject.

Almoſt as early as the leaſt limping can be perceived, ſome diminution in the circumference of the leg and thigh has actually taken place, as may be eaſily diſcovered by a careful meaſurement.

The hip-joint is deeply ſituated, ſo that its accidents and diſeaſes cannot be examined as readily as thoſe of many other articulations. The generality of ſurgeons little think, that the proper place for preſſing on the hip-joint, with a view of aſcertaining the preſence of diſeaſe, is a little on the outſide of the femoral artery, ſoon after it has deſcended below the brim of the pelvis. At this ſpot, the ſurgeon may apply preſſure to the front of this large articulation, and if it be diſeaſed, conſiderable pain will be the conſequence of the experiment.

The limping gait denotes, that ſomething is wrong in the limb, and if this ſymptom cannot be attributed to an affection of the vertebræ, or a recent accident; and if it be conjoined with the above-mentioned emaciation of the affected member, an exaſperation of pain on preſſing the front of the acetabulum; the evidence of diſeaſe in the hip becomes more and more convincing. It has appeared to us, that the weakneſs of the lower extremities from diſeaſed vertebræ always affects both limbs at once, and is unattended with pain about the knee, circumſtances completely deſcriminating this complaint from the feebleneſs of the limb, ariſing from the diſtempered ſtate of the hip-joint.

The marks of diſcrimination, juſt pointed out, between two diſeaſes of ſo different a nature, may appear to ſome perſons quite ſuperfluous. We entertain an oppoſite opinion. The diſeaſe of the vertebræ, and the affection of the hip, are both in the incipient ſtate often attended with little elſe than a certain weakneſs in walking, at leaſt with no other ſymptom, which would ſtrike an uninformed perſon. Almoſt every ſurgeon muſt have ſeen many caſes in which the vertebræ are diſeaſed, and attended with more or leſs lameneſs, without there being any preternatural projection of the ſpinous proceſſes whatſoever. Such projection, indeed, from the nature of the changes going on in the bones, can never happen, till the diſeaſe has made conſiderable advance. Beſides, it is a well known fact, that ſome practitioners are either ſo negligent, or ignorant, that they never advert at all to the ſtate of the back, as the cauſe of lameneſs. How many caſes have we ſeen, in which children's legs have been rubbed with liniments, while their backs were never examined, nor ſuſpected, as being the ſeat of the primary diſeaſe, to which the paralytic weakneſs of the limbs was entirely owing. If Mr. Crowther's aſſertion be true, that in caſes of diſeaſed vertebræ, one limb is little affected with lameneſs, while the power of the other is much impaired, the neceſſity for every ſign of diſcrimination will be ſtill greater, becauſe, when the ſpinous proceſſes do not project, as is often the caſe at firſt, a ſerious lameneſs on one ſide will be the only one particular complaint, both in diſeaſe of the ſpine and of the hip. The obſervations, however, which we have made, by no means juſtify the concluſion, that either in the early or advanced period of the diſtemper of the vertebræ, one leg is always, or even generally, affected with little lameneſs in compariſon with the great weakneſs of the other. But whether there are examples, in which one limb ſuffers ſo much more than the other or not, has nothing to do with the fact advanced, that in caſes of diſeaſed vertebræ, both limbs are affected with weakneſs. The projection of the ſpinous proceſſes is, in the earlier periods of the diſorder, far leſs invariable.

Another remarkable ſymptom of the diſeaſe of the hip, in its early ſtage, is an elongation of the limb, a circumſtance, which is quite manifeſt, on comparing the condyles of the os femoris, the patella, the trochanter major, and the malleolus internus of the diſeaſed limb, with the ſame parts of the ſound one.

Until lately, no ſatisfactory explanation had been given, by ſurgical writers, of the manner in which the lengthened ſtate of the limb was produced in the early ſtage of the hip diſeaſe. "The ancients, and, indeed, many practitioners, even of modern times, have aſſigned as cauſes of the increaſed length of the limb, a ſuppoſed relaxation of the orbicular ligament, or a diſtention of the articular cavity by fluid effuſed into the capſule. Such are the notions brought forward by Galen and Fabricius, to illuſtrate the meaning of the two aphoriſms of Hippocrates, concerning the nature of this diſeaſe." Sæpe in articulis humor pituitoſus acervatur, quem myxam appellat, (Hippocrates,) a quo madefacta articulationis ligamenta, laxiora redduntur: atque ideo facile a cavitate articulus excidit, et rurſus non cum difficultate incidit. Galen in Aphor. Hippocr. Comm. 6. See Crowther on White Swelling, &c. p. 259. edit. 2.

We ſhall paſs over the erroneous opinions, that the limb is lengthened by a diſtention and relaxation of the orbicular ligament, or by a ſwollen ſtate of the head of the thigh-bone, and a thickening of the acetabulum, or in conſequence of a deſtruction of the articular cartilages, and of the ligament completing the lower and inner margin of the acetabulum. In ſhort, nothing can be more certain, than that while the elongation of the limb laſts, the head of the bone muſt be ſituated in the acetabulum, or elſe the muſcles would draw the bone upwards, and ſhorten the member, as we find actually occurs as ſoon as the upper and poſterior part of the acetabulum, and the ligamentum teres are ſo deſtroyed, that they make no reſiſtance to this kind of diſlocation.

If then the head of the bone does not quit its ſituation, the lengthened ſtate of the limb can depend upon nothing leſs, than an alteration in the poſition of the pelvis. That the pelvis does undergo a change of its poſture is now perfectly aſcertained. The publication in which this fact was firſt noticed, we believe, is Dr. Falconer's pamphlet on iſchias. "The tubercle, or lower part of the iſchium may, in many inſtances, but not always, be diſcovered by feeling it behind to be lower on the affected ſide than the other. A man, now in the hoſpital, is a remarkable inſtance of the difference between the height of the bones on each ſide; and a pelvis of a perſon who died at the ſame place, and was preſerved there many years, ſhewed it ſtill more ſtrongly." It appears, from ſome remarks in Mr. Crowther's work on the white ſwelling, that Mr. John Hunter uſed to attribute the lengthening of the limb to the ſituation of the pelvis. Mr. Crowther and Mr. Lawrence inſtituted together an examination of this point, upon two children with diſeaſed hips, and they aſcertained, that when the patients were laid on the table, with the whole body in a ſtraight line, the anterior ſuperior ſpinous proceſs of the ilium on the affected ſide was lower than that of the ſound one, juſt in proportion to the difference in the length of the two limbs; this was about a quarter of an inch in one patient, and a full inch in the other. A ſimilar obliquity of the pelvis was equally manifeſt from behind, when the patients were placed on the abdomen, with the precaution of laying the body in a ſtraight line. It was impoſſible to place the pelvis in its natural horizontal poſition, without bringing the body into a curved line, and when this was done, the lower extremities, inſtead of falling ſtraight under the body, deviated from the perpendicular towards the diſeaſed ſide. A ſtraight line drawn along the ſpinous proceſſes of the ſacrum, and continued downwards, did not fall between the lower limbs, as it would in a pelvis, poſſeſſing its natural poſition, but, on the contrary, extended to the heel of the ſound limb. Mr. Crowther thinks, that in theſe caſes, the obliquity of the pelvis can be aſcribed to no other cauſe, than that of the patient's endeavouring to throw the weight of the body, as much as poſſible, on the ſound hip. The pain, and the general weakneſs of the affected limb, induce a conſtant effort of this kind. Hence children are obſerved bending the knee and hip, and hopping about on the healthy limb. The pelvis naturally ſinks on the diſeaſed ſide, and this deviation, which would affect the centre of gravity of the whole body, is counterbalanced by a bend of the upper parts of the trunk towards the ſound ſide. Accordingly, both the patients under Mr. Crowther were noticed to incline their heads towards the ſhoulder of the ſound ſide of the body. On White Swelling, &c., p. 26 —268, edit. 2.

Another remarkable ſymptom which attends the diſeaſe of the hip-joint, is the alteration in the natural fulneſs and convexity of the nates, that part appearing flattened which is uſually moſt prominent. The glutæus magnus becomes emaciated, and its edge no longer forms ſo bold a line, as it naturally does, at the upper and back part of the thigh, in the ſound ſtate of the limb. This is one very ſtrong feature of the early ſtate of the diſeaſe, and has been accurately repreſented in one of the plates of the late Mr. Ford's book on the preſent ſubject.

Though there may be more pain about the knee than the hip at ſome periods of the malady in its incipient ſtate, the former joint may be bent and extended without any increaſe of uneaſineſs; but the thigh-bone cannot be moved without a vaſt increaſe of the patient's ſufferings.

Patients with diſeaſed hips ſoon get into the habit of bearing the weight of the body chiefly on the other limb, ſo that they bend the thigh of the affected ſide forwards, in order to touch the ground only lightly with the foot. This is at all times found to be the moſt eaſy poſition of the limb, and every attempt to put the member in a ſtraight poſture gives conſiderable pain.

Such is the firſt ſtage of the diſeaſe in its ordinary form, in which we generally find the health little diſturbed.

When the hip is touched, the patient does not in general ſuffer any particular pain, unleſs the preſſure be applied to the front of the joint, the part which is undoubtedly the moſt ſuperficial. Yet it deſerves notice, that a few inſtances do occur, in which all the ſoft parts ſurrounding the joint are tenſe, exceedingly painful when handled, and in which the integuments are even tinged with a light pink colour.

It remains for us to deſcribe the ſecond ſtage of the diſeaſe, or that which is attended with ſuppuration.

The ſymptoms which are the fore-runners of the formation of pus, are different in different caſes. This variety depends upon the preſence of acute or only chronic inflammation. When the former occurs, the parts ſurrounding the joint become tenſe and extremely painful; the ſkin is even reddiſh, and the patient experiences an attack of inflammatory fever. As the local pain abates, rigors take place, a ſwelling forms in the vicinity of the joint, and very ſoon points.

When the abſceſs is the conſequence of that languid kind of inflammation which uſually occaſions ſcrofulous collections of matter, there is not ſo remarkable an increaſe of pain in the articulation, before the commencement of ſuppuration. Startings and other ſpaſmodic complaints have been ſet down as the moſt certain ſigns of the formation of matter in this diſeaſe. When the pus is formed in this ſlow manner, it does not make its way to the ſurface of the body ſo quickly, as when the abſceſs has been the immediate reſult of an attack of active inflammation on the morbid joint. A large fluctuating tumour preſents itſelf; but it does not directly point. The patient ſuffers greater uneaſineſs in the part; yet his ſenſations do not amount to that acute deſcription of tenderneſs, which affects in the foregoing inſtance not only the deep, but alſo the moſt ſuperficial parts around the articulation.

At length the limb becomes ſhortened, and this circumſtance, when the retraction is very conſiderable, ariſes from nothing leſs, than an actual diſlocation of the head of the thigh bone, in conſequence of the deſtruction of the cartilages, ligaments, and articular cavity. The ſhortening of the limb may happen before ſuppuration as well as after it. There are inſtances, in which the head of the bone is diſlocated, and anchyloſis enſues without the occurrence of any abſceſs at all.

Sometimes, before matter is formed, the patient is ſeriouſly dejected by hectic ſymptoms. In the ſuppurative ſtage of the diſtemper, theſe effects on the conſtitution always become worſe. The patient loſes his appetite, cannot ſleep, has a ſmall frequent pulſe, colliquative ſweats; and, too often, a very obſtinate and debilitating diarrhœa.

The openings through which the abſceſs is diſcharged continue, in moſt inſtances, to emit an unhealthy kind of matter for a long time after their firſt formation, becoming in fact the terminations of ſinuſes, which lead down to the diſeaſed joint.

When the diſeaſe follows external violence, the inability of uſing the limb is ſaid by Sabatier not to be ſo complete, as when that ſymptom depends upon a fracture of the neck of the thigh bone; a circumſtance, which may aſſiſt the judgment of the ſurgeon in any doubtful caſe.

When a diſeaſed hip is examined after death, collections of matter are often ſeen on the glutei muſcles, on the dorſum of the os ilium, and in the acetabulum. Sometimes, the muſcles at the upper and fore-part of the thigh are covered with pus. The femur is frequently found drawn up on the external ſurface of the ilium. The cartilage which covers the head of the thigh bone is occaſionally quite deſtroyed, while the round ball itſelf is marked with deep excavations, the effect of caries. The acetabulum is often totally deſtroyed, ſo that the os femoris, not being confined in the articular cavity, is pulled upwards by the muſcles. Even the outſide of the ilium is ſometimes affected with a kind of caries.

According to Mr. Ford, the os innominatum is always more extenſively carious than the thigh bone. We have ſeen a caſe, where the head of the latter bone was quite perfect, notwithſtanding the acetabulum was completely annihilated. If this ſtatement be generally, or even frequently correct, it muſt refute the doctrine of De Haen, that the diſtemper begins in the ſoft parts, at the ſame time, that it diſplays the abſurdity of all thoughts of undertaking amputation at the hip, ſince moſt of the diſeaſe, ſituated on the bones of the pelvis, could not be taken away.

The remote cauſes of the hip diſeaſe are very imperfectly underſtood. External violence is undoubtedly one, and the teſtimony of numerous reſpectable writers confirms, that lying down on the damp ground in ſummer time, and, indeed, all kinds of expoſure to damp and cold, are frequently conducive to the origin of the diſorder. For this reaſon, the lower orders of ſociety are rather more ſubject to the affliction than the higher claſſes. The particularities, however, in the affected joint, or, in the conſtitution, which cauſe the diſeaſe to take place in ſome perſons, and not in others, though ſimilarly circumſtanced in life, are perhaps beyond the reach of human inveſtigation. A ſcrofulous habit is certainly one prediſpoſing circumſtance; but the diſeaſe often takes place without any ſuſpicion of ſcrofula, and without any palpable cauſe whatever.

When the diſeaſe is attended with a degree of active inflammation, the moſt advantageous treatment is topical bleeding with leeches, cupping the circumference of the affected joint, and applying the ſaturnine lotion. When the pain is ſevere, the hip may be fomented in the morning and evening, and an opiate may be adminiſtered at night. Care muſt be taken to keep the bowels open with mild purgatives.

The foregoing plan is always highly beneficial, while there are manifeſt marks of active inflammation about the joint. But it is not to be continued after ſuch ſtate has ſubſided. Morbid anatomy tends to ſhew, that the hip diſeaſe conſiſts in the ſame alteration of the bones, ligaments, and cartilages, as we find prevails in the generality of white ſwellings. Experience proves, that both diſeaſes ought to be treated on ſimilar principles. The plan, therefore, on which the beſt ſurgeons place the greateſt reliance, is the endeavour to ſtop the progreſs of the diſeaſe by making an iſſue with cauſtic juſt behind and below the great trochanter. This iſſue is to be kept open with peas. The benefit which it effects, is accompliſhed not merely through the diſcharge that is produced, but alſo on the principle of counter irritation. For nothing is more certain in medical ſcience, than the frequent poſſibility of arreſting and ſubduing one diſeaſe by the artificial formation of another. In general, it will be requiſite to keep the iſſue open for ſeveral months, or even a year or two, before the diſtemper is effectually checked. During all this time, the patient ſhould be adviſed to reſt the limb as much as poſſible.

The efficacy of the Bath water, in the cure of the hip diſeaſe, has been much praiſed by Drs. Oliver, Charlton, and Falconer. The patient is put into a warm bath for 15 or 25 minutes, two or three times a week. It is to be noticed, that the Bath water is only recommended as an external application, and merely in the early ſtage of the diſeaſe, before ſuppuration has commenced. We ſuſpect, that many caſes, which have been ſet down as cured by the Bath water, have been rheumatic affections; and we believe that any warm bathing would have had equal power over the hip diſeaſe.

When abſceſſes form, the ſurgeon ſhould let out the matter, and apply a poultice. The iſſue, however, is not to be diſcontinued; or, if the inflammation or any other circumſtance ſhould compel the ſurgeon to heal it for a time, it will be proper to make another as ſoon as the joint is in a more eaſy ſtate. We ſcarcely need obſerve how neceſſary it is to ſupport the patient's ſtrength with tonics, good air, eligible nouriſhment, &c. when hectical ſymptoms prevail. Pain is to be appeaſed, and ſleep procured by opium. See Ford on the Diſeaſe of the Hip-joint, Falconer on Iſchias, Crowther on White Swelling, edit. 2. Samuel Cooper on the Diſeaſes of the Joints.

HIP-*mould*, in *Building*, is by ſome uſed for the back of the hip. Others underſtand it as a prototype, or pattern, commonly made of a piece of thin wainſcot, by which the back and the ſides of the hip are ſet out.

HIP-*ſhot*, a diſorder of a horſe, when he has wrung or ſprained his haunches or hips, ſo as to relax the ligaments that are to keep the bone in its due place.

The ſigns are, that the horſe will halt much, and go aſidelong, trailing his leg after him; and the hip which is hurt will be lower than the other, the fleſh falling away on the ſide of his buttock.

HIP-*tiles*. See TILES.

HIPPA, in *Zoology*. See CANCER.

HIPPAGOGA, in *Antiquity*, a veſſel uſed in tranſporting horſes. It was otherwiſe called hippago.

HIPPARCHION and RUFFINUS, in *Biography*, celebrated performers on the lyre, meeting in contention for the prize at the public games, Hipparchion was ſo terrified at the ſight of the crowd in the theatre, that he was utterly unable to diſpute the premium, which was beſtowed on Ruffinus. Hence the name of Hipparchion became proverbial for any one who promiſed much, and performed nothing.

HIPPARCHIA. See CRATES.

HIPPARCHUS, an ancient aſtronomer, was born at Nice, in Bithynia, and flouriſhed between the 154th and 163d Olympiads. He was the firſt perſon who attempted to count the number of the fixed ſtars; and his catalogue is ſtill preſerved in Ptolemy's "Almageſt," where they are ſet down with their longitudes and apparent magnitudes. According to Pliny he foretold the courſe of the ſun and moon for 600 years; he predicted the times of eclipſes, and taught mankind that they ought not to be alarmed at the recurrence of ſuch phenomena. Thales was the firſt among the Greeks who could foretel the approach of an eclipſe; and among the Romans, Sulpitius Gallus began to be ſucceſsful in that kind of prediction, and he made a ſeaſonable eſſay of his ſkill on the night before the day in which the deciſive battle againſt Perſeus was fought. Hipparchus came after theſe, and greatly improved that ſcience, making ephemerides, and other learned and uſeful helps to the practice of aſtronomy. He diſcovered a new ſtar; and he is memorable for having been the firſt who diſcovered the PRECESSION *of the Equinoxes*, which ſee. He endeavoured to reduce to rule the many diſcoveries which he had made, and invented new inſtruments by which he marked the places of celeſtial objects, and their magnitudes. Hipparchus made his firſt obſervations in the iſle of Rhodes, but he afterwards purſued his ſtudies in Bithynia and Alexandria. His commentary upon the phenomena of Aratus, which is a kind of criticiſm on that poem, is ſtill extant. This commentary was firſt publiſhed by Peter Victorius at Florence, about the middle of the 16th century; but a more correct edition of it was given by father Petau, with a Latin verſion and notes, in his Uranologia, publiſhed at Paris, 1650. Hipparchus was author of many other works, which were highly ſpoken of by the ancients, but which are now loſt. Every man of ſcience has without heſitation agreed in rendering a juſt tribute to the praiſe of this aſtronomer, on account of the obligations which this kind of knowledge is under to him. He is likewiſe celebrated for his ardent patriotiſm and public ſpirit, under the influence of which he is ſaid to have been greatly inſtrumental in delivering his country from tyranny. He is thought to have died about 125 years before the Chriſtian era, and ſtatues were erected to his memory. Bayle. Hutton's Math. Dict.

HIPPARCHUS'S *Period.* See PERIOD.

HIPPASUS, in *Biography*, is enumerated among the Greek writers on muſic whoſe works are loſt. He was a native of Metapontus, a diſciple of Pythagoras, and, according to Theon of Smyrna, an excellent muſician.

HIPPED ROOF, in *Architecture*, is that whoſe ends riſe immediately from the wall plate, with the ſame inclination to the horizon as the other two ſides of the roof have.

Backing of a hip is the angle made on its upper edge, to range with the two ſides or planes of the roof between which it is placed.

Jack rafters are thoſe ſhort rafters fixed to hips equidiſtantly diſpoſed in the planes of the ſides and ends of the roof, and parallel to the common rafters, to fill up the triangular ſpaces, each of which is contained by a hip rafter, the adjoining common rafter and the wall plate between them.

The ſeat or baſe of the rafter is its ichnographic projection on the plane of the wall-head, or on any other horizontal plane.

The principal angles concerned in hipped roofing are, the angle which a common rafter makes with its ſeat on the plane of the wall-head; the vertical angle of the roof; the angle which a hip makes with the adjoining common rafter; the angles which a hip make with the wall plate on both ſides of it; the angle which a hip rafter makes with its ſeat; and the acute angle which a hip rafter makes with a vertical line. The principal lengths concerned are, the height of the roof; the length of the common rafters and their ſeats; the length of the hips and their ſeats; and, laſtly, the length of the wall plate contained between the lower end of a hip and the lower end of the adjacent common rafter.

The ſides and angles may be found by geometrical conſtruction or trigonometrical calculation. It is evident, that if the hipped end of a roof be cut off by a vertical plane parallel to the wall, through the upper extremity of the hips, it will form a rectangular pyramid, or one whoſe baſe is a rectangle. The baſe of this pyramid is bounded by the wall plate between the two hips on one ſide, and on the oppoſite ſide by the ſeat of the two adjoining common rafters; on the other two oppoſite ſides by that part of the wall plate on each ſide contained by the lower end of the hip and the next common rafter adjoining. One of the ſides is the iſoſceles triangle contained by the two adjoining common rafters with their ſeat; the oppoſite ſide is the hipped end of the roof, forming alſo an iſoſceles triangle; the other two oppoſite ſides are the right-angled triangles contained by the two hips and the two adjoining rafters on the ſide of the roof. This rectangular pyramid may be divided into three triangular pyramids by the two vertical triangular planes, formed by the hip rafters, their ſeats, and the common perpendicular from their vertex.

Two of theſe pyramids, when the plan of the building is a rectangle, are equal and oppoſite. In each of theſe equal and oppoſite pyramids the baſe is a right-angled triangle, contained by the ſeat of the hip rafter, the ſeat of the adjoining common rafter, and the part of the wall plate between the hip and the adjoining common rafter. One of the ſides is a right-angled triangle contained by the adjoining common rafter, its ſeat, and perpendicular; a ſecond ſide is a right-angled triangle contained by the common rafter, the hip rafters, and the wall plate between them; and the remaining third ſide is the triangle contained by the hip rafter, its ſeat and perpendicular. With regard to the remaining pyramid, its baſe is a right-angled triangle contained by the ſeats of the two hips and the wall plate between them, the right angle being that contained by the ſeats of the two hips; two of its ſides are the triangular planes paſſing the hip rafter, which are alſo common to the other two pyramids; its third ſide is the hipped end of the roof.

Given the plan of a building, or the form of a wall plate of a hipped roof, and the pitch of the roof, to find the various lengths and angles concerned, whether the roof is ſquare or bevel.

To find the Length of the Rafters Geometrically.—Let ABCD (*Pl.* LXXV.) be the plan. Draw E F parallel to the ſides A D and B C in the middle of the diſtance between them. On D C, as a diameter, deſcribe the ſemicircle D F C. Draw F D and F C, then the angle D F C is a right angle. Draw G F H perpendicular to E F, cutting the ſides A D and B C in G and H. From F E cut off F I equal to the height or pitch of the roof, and join G I. From F C cut off F K equal to F I, and join K D; then G I is the length of a common rafter, and D K that of the hip; for if the triangles G F I and D F K be turned round their ſeats, G F and D F, until their planes become perpendicular to the triangle G F D, the perpendicular F I will coincide with F K, and the point I will coincide with the point K; the lines G I and D K, repreſenting the rafters, will then be in their true poſition.

The ſame by Calculation.—$GI^2 = GF^2 + FI^2$ (Euclid 1. 47), therefore $GI = (GF^2 + FI^2)^{\frac{1}{2}}$ the length of the common rafter, $DF^2 = GF^2 + GD^2$ the ſquare of the ſeat of the hip. $DK^2 = DF^2 + FK^2 = GF^2 + GD^2 + FI^2$, therefore $DK = \overline{GF^2 + GD^2 + FI^2}^{\,\frac{1}{2}}$.

In the ſame manner the other hip rafter C L is found, as alſo the hip rafters A M and B N.

To find the Backing of the Hips and the Shoulders of Jack Rafters and Purlins.

Geometrically.—Let it be required to find the backing of the hip rafter, whoſe ſeat is C F.

Imagine the triangle C F L to be raiſed upon its ſeat C F, until its plane becomes perpendicular to the plane of the wall plate A B C D, then there will be two right-angled ſolid angles; the three ſides of the one are the plane angles F C D, F C L, and the hypothenuſal plane angle D C L. In each of theſe ſolid angles the two ſides containing the right angle, *viz.* the plane angles F C H, F C D, and the perpendicular plane angle C F L, which is common to both, being given, to find the two oppoſite inclinations to the ſides F C H and F C D, and the remaining third ſides.

Now the angles G D C and H C D are biſected by the ſeats F D and F C of the hip rafters; for if E F is produced to meet D C in U, U will be the centre of the circle D F C; and U C, U F, U D, are equal to each other: and becauſe U F is equal to U C, the angle C F U is equal to F C U; but C F U is equal to the alternate angle F C H; therefore the angle F C U is equal to F C H: that is, the angle U C H is biſected by the ſeat F C of the hip rafter. In the ſame manner it may be ſhewn that U D G is biſected by the ſeat D F of the other hip rafter. From any point O in F C, draw O V perpendicular to L C, cutting it in P, and O W perpendicular to F C, cutting D C in W; from O C cut off O Q equal to O P. Join Q W, then O Q W will be the inclination oppoſite the plane angle F C U, and this is the angle which the end of the roof makes with the vertical triangle contained by the hip rafter, its ſeat and perpendicular. Produce W O to meet B C in X, and join Q X, then W Q X is the inclination of the two planes of a ſide, and end of the roof, whoſe interſections are B C and C D, or the plane of the wall-head. Now the angle W Q X, which is double the angle W Q O, is the backing of the hip. Make P V equal to Q W, and join C V, then will P C V be the angle contained by the two ſides L C, C D, or that of the hypothenuſal plane angle contained by the interſection B C, and the hip rafter L C. This angle may be otherwiſe found thus: produce G H to R; make C R equal to C L, then the angle H C R is equal to P C V. Now the angle H C R, or P C V, is the angle which the purlins (when one of their faces is in the ſide of the roof) makes with the hip rafter L C; and the angle C V P, or C R H, is the angle which a jack rafter makes with the ſame hip: in the ſame manner may the backings of the other hips be found. The other bevel of the jack rafters is the angle H I F. To find the other bevel for cutting the ſhoulder of the purlin proceed thus: on F, as a centre, with the diſtance F G, deſcribe the arc G Y; draw F Y perpendicular to G I; Y Z parallel to E F; cutting F D in Z, and Z & parallel to G H, cutting A D in &. Join & F, then G & F is the angle which the other ſide of the ſhoulder makes with the length of the purlin.

At the upper end of this diagram is ſhewn the manner of finding the two bevels for cutting the ſhoulder of the purlin againſt the hip rafter, when the ſide of the purlin is not in the plane of the ſide of the roof.

To find the ſame things by calculation.—The backing of the hip rafter, and hypothenuſal ſide, is obtained as follows: it has been ſhewn that the three plane angles, and the three inclinations of ſolid angles, conſiſting of three plane angles, are found exactly as the ſides and angles of ſpheric triangles, any three parts being given; the degrees of the plane angles being exactly the ſame as the ſides of the ſpheric triangle, and the inclinations the proper meaſures of the ſpheric angles: therefore if two of the plane angles ſhould be perpendicular to each other, the ſpheric triangle repreſenting this ſolid angle will have alſo two of its ſides perpendicular to each other. Now in this, there are given the two ſides containing the right angle to find the hypothenuſe and angles.

It is ſhewn by writers on ſpherical trigonometry, that in any right-angled ſpherical triangle, radius is to the coſine of either of the ſides, as the coſine of the other ſide to the coſine of the hypothenuſe. Suppoſe the plane angle F C L to be 27°, and the angle F C H 52°, to find the hypothenuſe and angles of a right-angled ſpherical triangle, one of whoſe legs is 27° and the other 52°, it will therefore be

As radius, ſine of 90° - - - - = 10.00000
Is to the coſine of F C L, 27° - = 9.94988
So is the coſine of F C H, 52° - - = 9.78934

19.73922
10.00000

To the coſine of the hypothenuſal ſide 56° 44′ - - - } = 9.73922

This aſcertains the angle which the jack rafter makes with the hip. Since all the ſides are now given, we ſhall have, by another well known property of the ſines of the ſides being as the ſines of the oppoſite angles, the following proportion,

As the ſine of the hypothenuſe 56° 44′ = 9.92227
Is to the ſine of a right angle, or 90° = 10.00000
So is the ſine of the ſide F C H, 52° = 9.89653

19.89653
9.92227

To the ſine of the oppoſite angle 70° 28′ = 9.97426

Therefore the backing is twice 70° 28′ = 140° 56′

In finding the angle oppoſite the ſide F C H, it was not neceſſary that the hypothenuſal ſide ſhould have firſt been found, it might have been found independently thus: the ſine of either of the ſides about the right angle is to radius, as the tangent of the remaining ſide is to the tangent of the angle oppoſite to that ſide; therefore

As the ſine of the ſide F C L, 27° - = 9.65705
Is to the tangent of the ſide F C H, 52° = 10.10719
So is radius, ſine of 90° - - - = 10.00000

20.10719
9.65705

To the tangent of the angle oppoſite the ſide F C H, 70° 28′ - } = 10,45014

In the ſame manner may other bevels be found by trigonometrical calculations; but as ſuch extreme exactneſs is not neceſſary, the geometrical conſtructions ought to be well underſtood.

HIPPELAPHUS, among the *Ancient Zoologiſts*, was only the name of a large race of ſtags with longer hair on the neck, giving it the appearance of a mane. See CERVUS *Elaphus*.

HIPPER RIVER, in *Geography*, is a ſmall river which riſes in the Eaſt Moors of Derbyſhire, in the townſhip of Brampton, and falls into the Rother at the S.E. end of the town of Cheſterfield. This river collects all the rain waters of about 7000 acres of land, according to Mr. Farey's Report of Derbyſhire, vol. i., where the ſtrata are mentioned over which it flows. A great variety of manufactures are eſtabliſhed on this river in New or Little Brampton and Cheſterfield.

HIPPEUS, or EQUINUS, in *Phyſiology*, a ſort of comet which ſome writers ſuppoſe to bear a reſemblance in its tail to a horſe. But the ſhape of this kind of comet is not always alike; being ſometimes oval, and ſometimes imitating a rhomboides. Its train alſo is ſometimes ſpread from the front or fore-part, and ſometimes from the hind-part.

Hence this claſs of comets is diſtinguiſhed into equinus barbatus, equinus quadrangularis, and equinus ellipticus. See COMET.

HIPPI PROMONTORIUM, in *Ancient Geography*, *Ras-el-Hamrah*, a promontory of Africa, E. of the promontory of Tapſus, and N.W. of the promontory of Stoborrum.

HIPPIA, a town of Greece, in Theſſaly, in Perrhæbia.—Alſo, a fertile and delightful level country at the mouth of the Cephiſus.

HIPPIA, in *Botany*, a name which ſeems to have originated with Valerius Cordus for the common Chickweed, *Stellaria media*, Fl. Brit. See his Hiſt. Stirp. 159. It is ſaid by Ambroſinus to be derived from ἵππος, *a horſe*, becauſe it affords that animal a grateful food. Whatever truth there may be in this account, we are unable to trace the meaning of Linnæus in applying it to the little ſyngeneſious genus, reſembling Tanſy, of which we are here to treat.—Linn. Mant. 158. Schreb. 586. Willd. Sp. Pl. v. 3. 2382. Mart. Mill. Dict. v. 2. Ait. Hort. Kew. v. 3. 278. Juſſ. 184. Lamarck. Dict. v. 3. 130. Illuſtr. t. 717. Gærtn. t. 164.—Claſs and order, *Syngeneſia Polygamia-neceſſaria*. Nat. Ord. *Compoſitæ Diſcoideæ*, Linn. *Corymbiferæ*, Juſſ.

Gen. Ch. *Common Calyx* hemiſpherical, of ſeveral ovate, ſomewhat imbricated, ſcales. *Cor*. compound, diſcoid; with numerous male florets in the diſk, and ten female ones in the circumference; the petal of the males is funnel-ſhaped, five-cleft, erect; that of the females obſolete, tubular, ſlightly three-cleft. *Stam*. Filaments in the male florets five, very ſhort; anthers ſtill ſhorter, united into a cylinder. *Piſt*. Germen in the female florets large, bordered; ſtyle cloven; ſtigmas erect. *Peric*. none, except the unchanged calyx. *Seeds* in the female florets oval, encompaſſed all round with a very broad margin, without any crown. *Recept*. naked.

Eſſ. Ch. Receptacle naked. Seed-down none. Seeds with a broad margin. Calyx hemiſpherical, ſomewhat imbricated. Florets of the radius ten, obſolete, obſcurely three-cleft.

1. H. *fruteſcens*. Linn. Mant. 291. Suppl. 390. (Tanacetum fruteſcens; Linn. Sp. Pl. 1183. T. africanum arboreſcens, foliis lavandulæ multifido folio; Comm. Hort. v. 2. 201. t. 101.)—Shrubby, erect, and hairy. Leaves pinnatifid. Flowers corymboſe.

A native of the Cape of Good Hope, flowering in our greenhouſes from February to Auguſt, and ſometimes perfecting ſeed in the autumn. The whole plant is clothed with ſoft ſhaggy hairs, eſpecially the young leaves and branches, and has the ſmell and taſte of common Tanſy. *Stem* ſhrubby, round, alternately branched, leafy, five or ſix feet high, with a brown bark. *Leaves* ſcattered, ſtalked, an inch or inch and half long, deeply and elegantly pinnatifid, their ſegments numerous, parallel, elliptical, entire, decurrent into the ſtalk. *Flowers* terminal, corymboſe, deep yellow, like Tanſy, but ſmaller. The chief beauty of the plant conſiſts in its foliage, which is ſo regularly cut as to be almoſt pectinate. Indeed Linnæus, thinking it at one time an *Eriocephalus*, named it *E. pectinifolius* in his Syſt. Nat. ed. 12. v. 2. 579.

2. H. *minuta*. Linn. Suppl. 389.—Herbaceous, procumbent, creeping. Leaves pinnate. Flower-ſtalks axillary, ſingle-flowered.—Sent by Mutis from New Granada. *Root* of very long fibres. *Stems* procumbent, creeping, a few inches in length, branched, round, hairy. *Leaves* oppoſite at the baſe of the branches, otherwiſe alternate, ſcarcely an inch long, pinnate or very deeply pinnatifid, their leaflets or lobes much reſembling thoſe of the former ſpecies, but ſometimes having one or two notches. They are hairy when young, nearly ſmooth when full-grown. *Footſtalks* rather longer than the leaves, ſheathing and membranous at the baſe. *Flower-ſtalks* axillary, longer than the leaves, deflexed, ſimple, ſlender, naked, ſolitary, each bearing an extremely ſmall yellowiſh *flower*, of the difficulty of examining which the younger Linnæus might well complain; but he has copied his father's manuſcript from the back of the ſpecimen, and poſſibly the whole was written by the latter, as was the caſe with the greater part of the *Supplementum*, though publiſhed in the name of the former. We have already pointed out a miſtake into which Juſſieu has been led reſpecting this plant. See GYMNOSTYLES *naſturtiifolia*.

3. H. *ſtolonifera*. Broter. Luſit. v. 1. 373. Phytogr. faſc. 1. 29. Willd. n. 3.—Herbaceous, procumbent, creeping. Leaves pinnatifid. Flowers ſeſſile at the root.—Frequent in Portugal, according to the worthy father Brotero, growing in moiſt ground, eſpecially where the ſoil is chalky, and flowering in winter, ſometimes ſo late as April. The plant is inſipid and inodorous. *Root* annual, fibrous, crowned with the ſeſſile *flowers*, and throwing out from beneath them a few ſhoots, ſcarcely above half an inch long. *Leaves* copious, radical, ſpreading in a circle, ſmooth or ſlightly downy, pinnatifid with five, ſeven, or only three lobes, which are very ſmall and linear-lanceolate. *Footſtalk* from half an inch to an inch long, being twice the length of the leaf, or more. *Florets* enveloped in down, all tubular; the females 40 or more, in the circumference; males ſeven or eight only, in the centre. *Corolla* of the females awl-ſhaped or briſtle-like, cloſely embracing the ſtyle, with a ſcarcely perceptible limb; that of the males funnel-ſhaped, apparently three-cleft The *ſtyles* of the former all meet over the male florets in the centre, while the flower is in perfection. *Seeds* numerous, ſmooth, wedge-ſhaped, or obovato-triangular, the upper angles pointed; crowned with the ſtyle and a membranous partial calyx, without down, and winged longitudinally.--Such are the moſt important circumſtances in Brotero's deſcription, which certainly prove the plant a *Gymnoſtyles*, under which genus we ſhould have ranged it, had this account come under our notice before. It does not appear to be any of the ſpecies we have deſcribed, but makes a fourth, and the only European one. We have not however ſeen any ſpecimen.

4. H. *integrifolia*. Linn. Suppl. 389. (Grangea; Lamarck. Illuſtr. t. 699. f. 1)—Roughiſh, upright. Leaves lyrate, unequally ſerrated; the upper ones undivided. Flowers in terminal cluſters.—Native of the Eaſt Indies? Our ſpecimen came from the Paris garden, as the *Grangea* of Juſſieu and Adanſon; we have already alluded to it under the firſt ſpecies of that genus; (ſee GRANGEA;) but were not then aware of its being figured as ſuch by Lamarck. The original ſpecimen, named by the younger Linnæus, is very bad, and the *leaves* were not perceived by him to be lyrate. He not unaptly compares them to thoſe of a nettle, which their deep unequal ſerratures reſemble. The *ſtem* is herbaceous, a foot or two high, roughiſh. *Leaves* alternate, ſtalked, two inches long and one broad. *Flowers* the ſize of a ſmall pea, in looſe, terminal, erect cluſters; their florets very numerous; receptacle convex; ſeeds obovate, bordered. We are certain this plant is not a *Grángea*, but dare not aver it to be a good *Hippia*, though we ſee no poſitive objection. The *ſeeds* indeed are much narrower than in *H. fruteſcens*.

5. H *bicolor* (H. integrifolia; Ait. Hort. Kew. v. 3. 278. Sphæranthus africanus; Burm. Ind. 185. t. 60. f. 2, but not of Linnæus; Cotula bicolor; Willd. Sp. Pl. v. 3. 2171, excluding the ſynonym of Lamarck.)—Roughiſh, ſpreading. Leaves obovate, deeply ſerrated. Flowers in terminal, divaricated, leafy cluſters.—Native of the Eaſt Indies. We had it (as the plant adopted by Willdenow from Roth,) out of the ſtove of the Cambridge garden in October, 1805, and have no doubt of the ſynonyms of Burmann and Aiton. It appears ſufficiently diſtinct from the laſt deſcribed in its ſpreading mode of growth, paler colour, differently ſhaped and leſs divided leaves, whoſe ſerratures are more pointed, and in the divaricated cluſters. In genus it certainly accords with the *integrifolia*, which name would ſuit the preſent ſpecies better than that to which it is applied. S.

HIPPIAS, in *Biography*, a philoſopher of Elis, and a diſciple of Hegoſidamus; he was crowned at the Olympic games, and wrote upon muſic.

HIPPIATRICE, of ἵππος, *horſe*, and ιατρος, *phyſician*, the art of curing the diſeaſes of brutes, and particularly horſes.

This makes what we rather call the *farrier's art.* See FARRIER.

HIPPION, in *Botany*, a name ſynonymous in ſome authors with Horſe Violet, derived from ἵππος, *a horſe*, but for whoſe application in the preſent inſtance we cannot account. It is retained by Schmidt in his Flora Boëmica, after Geſner, for the *Gentianæ* with a bearded corolla, of which he makes a diſtinct genus. Mr. Brown, however, Prodr. Nov. Holl. v. 1. 450, quotes the *Hippion* of Schmidt as a ſynonym of what he conſiders as the real *Gentianæ*, whoſe corolla is naked at its orifice.

HIPPIUM, in *Antiquity*, that part or tract of the *hippodrome* which was beaten with the horſes' feet. See HIPPODROME.

HIPPO DIARRHYTUS, or *Zarytus*, in *Ancient Geography*. See BISERTA.

HIPPO-*Regius*, an ancient town of Africa, in that part of Numidia called the Eaſtern province or Conſtantina, ſituated near the ſea, on a bay in the vicinity of the promontory of Hippi. The ruins of this ancient city are ſpread over the neck of land that lies between the rivers Boo-jeemah and Seibouſe, which near the bank is plain and level, but riſes afterwards to a moderate elevation. They are about half a league in circuit, conſiſting of broken walls and ciſterns. This city was called Hippo Regius, not only in contradiſtinction to the Hippo Zarytus, but from its having been one of the royal cities of the Numidian kings. For Silius Italicus (l. iii. v. 259.) informs us, that it was formerly one of their favourite ſeats; and indeed if a city ſtrong and warlike, commodiouſly ſituated, as well for commerce as for hunting and diverſion, that enjoyed a healthful air, and took in at one view the ſea, a ſpacious harbour, a diverſity of mountains loaded with trees, and plains interſected by rivers, would fix the affection and attachment of the Numidian kings, Hippo had all theſe circumſtances to recommend it.

HIPPOBOSCA, in *Entomology*, a genus of the Diptera order, diſtinguiſhed by having the mouth furniſhed with a ſhort, ſtraight, and cylindrical two-valved ſucker, the valves of which are equal; the antennæ filiform; feet armed with numerous claws, and the body flat and hard. This is the Linnæan character, to which it is added by Scopoli that the roſtrum has only one briſtle. Geoffroy obſerves, that the hippoboſcæ are the only dipterous inſects that want ſtemmata, except the culices, and that their antennæ are ſetaceous, and compoſed of a ſingle hair. According to Schæffer the abdomen is as broad as the thorax. Fabricius adopts the genus as propoſed by Linnæus, with the following eſſential character. Beak ſhort, ſtraight, and bivalve, with the valves equal, and the antennæ filiform; adding, as a ſecondary character, that the body of the hippoboſca is ſmall, ovate, depreſſed, flat, glabrous, and immarginate: the head ſmall, rounded, and flat: the eyes ovate, lateral, and diſtant; thorax ovate; ſcutel large; and the wings two, membranaceous, and the length of the abdomen.

The hippoboſcæ are denominated "Spider flies" by ſome Engliſh writers, no doubt in conformity with the French of Reaumur, "mouches araignées." This is not a name, however, by which they are excluſively known in France, being called in Normandy "mouches bretonnes," and elſewhere "mouches d'Eſpagne." In England alſo they bear the name of horſe-flies, the largeſt ſpecies being extremely troubleſome to horſes. They haunt woods and marſhy places, and are commonly found attached to the bodies of quadrupeds and birds, the blood of which affords them their natural ſubſiſtence. In the act of feeding they thruſt their acute proboſcis into the ſkin, and occaſion a ſmarting ſenſation, ſimilar to that inflicted in the bite of a flea, but rather more pungent. They move ſluggiſhly, and with caution, and are at all times ſo firmly attached to the ſkin by the aſſiſtance of their numerous claws, that it is ſcarcely poſſible by any effort to remove them, unleſs by at the ſame time plucking out the fleſh to which they adhere. The ſpecies are not numerous.

Some modern writers divide the hippoboſcæ into three diſtinct genera, retaining to one the former term, and naming the other two *Ornithomyia* and *Melophagus*. The very cloſe affinity the two firſt mentioned bear to each other in external appearance ſeems ſcarcely to allow a deviation ſo remote from the example of Linnæus and Fabricius as that propoſed, and we rather wiſh to eſteem them as two diſtinct families of the ſame natural tribe than as diſtinct genera: the difference that prevails in the ſtructure of the antennæ in thoſe two families is certainly remarkable, and the very peculiar diſtinction of the head is alſo to be conſidered, one having ſtemmata on that part, and the other none. With regard to Melophagus, the diſſimilarity in its general appearance is far more ſtriking to the caſual obſerver, this, unlike the two former, being deſtitute of wings: in the ſtructure of the antennæ it agrees with H. equina, a ſpecies admitted by every writer under the name of hippoboſca. We ſhall conſider theſe new genera as ſectional diviſions of the hippoboſcæ in the ſubſequent arrangement.

* *Hippoboſca.* Winged; eyes very diſtinct; head without ſtemmata; antennæ in the form of a globoſe tubercle inſerted in a hollow at the baſe of the beak.

EQUINA. Wings obtuſe; thorax variegated; feet armed with four claws. Linn. *Horſe ſpider fly*, Donov. Br. Inſ.

Inhabits Europe, and infeſts cattle, hiding themſelves under the hairs, and attaching themſelves firmly to the ſkin by means of the double pair of crotchets or hooks of their feet: it is of a diſguſting form, flat, and hard, and, like the two ſucceeding ſpecies, not eaſily killed by preſſure. The head is brown; thorax brown, varied with yellowiſh, and a band of the ſame down the middle; wings hyaline, with a brown ſpot near the outer margin; legs annulated with yellow and brown. Length about three quarters of an inch.

* *Ornithomyia.* Winged; eyes very diſtinct; head furniſhed with ſtemmata; antennæ lamelliform and advanced.

AVICULARIA. Wings obtuſe; thorax immaculate. Linn. *Bird ſpider fly*, Donov. Br. Inſ. *Ornithomye verte*, Latr.

Infeſts birds as the former infeſts quadrupeds, ſecreting itſelf among the feathers, and ſubſiſting on their blood. The body is dull brown, with a greeniſh caſt; ſize inferior to the former; length about half an inch.

HIRUNDINIS. Wings tapering to a point, feet with ſix claws. Linn. Donov. Br. Inſ.

Body brown tinged with blueiſh; abdomen darker. Like the preceding, infeſts birds, but more generally the ſwallow, and is often found in the neſt of the common European kind.

* *Melophagus.* No wings; eyes leſs diſtinct; antennæ in the form of a tubercle, lodged in a hollow; valves of the ſucker longer than the head.

OVINA. Body dull, teſtaceous. Linn. Donov. Br. Inſ. *Sheep ſpider fly, melophage*, Latr. *L'hippoboſcque des moutons.*

Found lodged among the wool of ſheep in Europe.

HIPPOCAMPUS, in *Ichthyology*, a ſpecies of *Syngnathus*; which ſee.

HIPPOCASTANUM, in *Botany*, from ἵππος, *a horſe*, and κάστανον, *a cheſnut*, the Horſe Cheſnut. Cluſius, in his Hiſt. Plant. v. i. 8, ſays the name is a tranſlation of the Turkiſh

Turkiſh appellation of this tree, *at ceeſtaneſi*, or *ad caſtaneſi*, given to it becauſe the fruit was found good for the cough or broken wind in horſes. (See Æsculus.) Some have ſuppoſed this fine tree, ſo ornamental to our Engliſh plantations, parks, and avenues, a native of America; but it appears from the works of Cluſius to have been brought from Conſtantinople to Vienna, and was found wild by Mr. Hawkins, the companion of the late Dr. Sibthorp, on mount Pindus, of whoſe celebrated groves it makes a principal part. The greateſt wonder is, that no name or deſcription, applicable to ſo ſingular and beautiful a tree, ſhould be diſcoverable among the writings of the ancients, and that the epithet *pinifer* ſhould have been given to this famous mountain, but none expreſſive of what muſt conſtitute its great and peculiar beauty, the rich foliage and magnificent bloſſoms of the horſe-cheſnut. See Clusius.

HIPPOCENTAUR, formed of ἱππος, *horſe*, κεντεω, *pungo*, *I ſpur*, and ταυρος, *bull*, in *Antiquity*, a fabulous monſter, ſuppoſed to be half horſe and half man.

What gave occaſion to this fable was, that the people of Theſſaly, inhabiting near mount Pelion, became thus denominated, becauſe they were the firſt who taught the art of mounting on horſeback; which occaſioned ſome of their neighbours to imagine, that the horſe and man made but one animal.

The hippocentaurs ſhould ſeem to have differed from the centaurs, in this, that the latter only rode on bullocks, and the former on horſes, as the names themſelves intimate. (See Centaurs.) Under that article it has been ſhewn that the appellation was derived from the practice of breaking or mounting horſes, for which the Theſſalians were the moſt famous. Theſe horſemen afterwards, in order to acquire greater ſtrength and agility, performed a kind of exerciſe, in which they fought with bulls, which they pierced with their javelins, or overthrew by graſping them by the horns. Pliny informs us, not only that this exerciſe was common among the Theſſalians, who invented it, but alſo that it was one of the ſhows which Julius Cæſar exhibited to the Romans. It is very probable, therefore, that in ſpeaking of theſe Theſſalians, they added to the name of Hippios that of Centaur, and hence of theſe three words, ἱππευς, κεντει, ταυρος, was compounded that of hippocentaur, a horſeman-bull-ſhooter. As theſe horſemen became formidable afterwards by their depredations, the equivocation which appeared in the name made them to be accounted monſters compounded of two natures. The poets availed themſelves of this idea; and as in other inſtances they gave the air of marvellous to the ſubjects of which they treated, they made no difficulty in taking horſemen for Centaurs. And theſe horſemen became giants both in hiſtory and fable.

On the medals of Gallienus is repreſented a centaur drawing a bow, or holding a globe in the right hand, and the helm of a ſhip in the left; with this inſcription, apollini cons. aug. *To Apollo the conſervator of Auguſtus*. Triſtan conſiders both the one and the other as a ſymbol of the protection Gallienus received from Apollo in his wars againſt the Perſians.

HIPPOCEPHALOIDES, the *horſe-head ſtone*.

The word is derived from the Greek ἱππο, *horſe*, and κεφαλη, *the head;* and is a name given by Dr. Plot to a ſtone found in Oxfordſhire, and many other places, and ſuppoſed to reſemble the head of a horſe in figure, though the truth is, it requires a very warm imagination to make out the reſemblance.

The ſtone is compoſed of the matter of the common coarſer quarry ſtone, and owes its figure to a ſhell of the cockle-kind, into which having been received at a time when it was ſoft and moiſt, it has taken the exact figure and lineaments of its inner parts. It is about the ſize of the larger bucarditæ, from an inch and a half to two inches and a half in length, and indeed very much reſembles that ſtone, having been formed wholly in the ſame manner, and in a ſhell of the ſame genus. Hill's Hiſt. of Foſſils, p. 646.

HIPPOCRAS, *Vinum Hippocraticum*, a kind of medicated wine.

Menage approves the conjecture of thoſe who derive hippocras from Hippocrates, as ſuppoſing him the inventor of it, but we may better deduce it from the manica Hippocratis, or Hippocrates's ſleeve, uſed in the filtration of it.

Hippocras is a drink compoſed of wine, with ſpices and other ingredients infuſed in it; much uſed among the French by way of a cordial dram after meals.

There are various kinds of hippocras, according to the kind of wine, and the other additional ingredients made uſe of; as white hippocras, red hippocras, claret hippocras, ſtrawberry hippocras, hippocras without wine, cyder hippocras, &c.

That directed in our late college diſpenſary, is to be made of cloves, ginger, cinnamon, and nutmegs, beat, infuſed in canary, with ſugar; to the infuſion, milk, a lemon, and ſome ſlips of roſemary, are to be put, and the whole ſtrained through a flannel. It is recommended as a cordial, and is good in paralytic, and all nervous caſes.

HIPPOCRATEA, in *Botany*, is ſo named in commemoration of Hippocrates, the moſt celebrated of ancient phyſicians, and univerſally termed the "father of phyſic." —This genus was called *Coa* by Plumier, from the circumſtance of Hippocrates having been born in the iſland of Cos, and therefore uſually known by the name of Hippocrates Coas.—Linn. Gen. 25. Schreb. 34. Jacq. Amer. 9. Willd. Sp. Pl. v. 1. 193. Vahl. Enum. v. 2. 26. Mart. Mill. Dict. v. 2. Juſſ. 251. Lamarck. Illuſtr. t. 28. (Coa; Plum. 6. t. 35. Bejuco; Lœfl. It. 314.) Claſs and order, *Triandria Monogynia*. Nat. Ord. *Tribilatæ*, Linn. *Acera*, Juſſ.

Gen. Ch. *Cal.* Perianth of one leaf, ſpreading, minute, coloured, deciduous, deeply divided into five, roundiſh, ſpreading, obtuſe ſegments, larger than the corolla. *Cor.* Petals five, ovate, ſomewhat excavated at the tip. *Stam.* Filaments three, awl-ſhaped, erect, as long as the corolla; anthers broad, with a tranſverſe furrow. *Piſt.* Germen oval; ſtyle as long as the ſtamens; ſtigma obtuſe. *Peric.* Capſules three, elliptical, compreſſed, large, with two-valved cells; valves keeled and compreſſed. *Seeds* five in each capſule, oblong, with a membranaceous wing.

Eſſ. Ch. Calyx in five ſegments. Petals five. Nectary fleſhy, bearing the ſtamens. Capſules three, obcordate or elliptic, gaping in the middle.

Profeſſor Vahl has deſcribed eight ſpecies of this genus in his *Enumeratio Plantarum*, though Linnæus was only acquainted with *Hippocratea volubilis*, but as this is a genus very little known, and curious for being triandrous in a natural order that has uſually eight or ten ſtamens, we are induced to give an abſtract of all the ſpecies found in the former author, following the profeſſor's arrangement.

1. H. *obcordata*. Vahl. Enum. n. 1. (H. ſcandens; Jacq. Amer. 9. t. 9.)—"Leaves ovato-lanceolate, ſerrated. Capſules obcordate."—Native of South America. It flowers in April and December, and bears fruit in July.—*Branches* purpliſh. *Leaves* from one to three inches long, and little more than an inch broad, rounded at the baſe, a little pointed, entire in the lower part. *Stipula* ſolitary, mi-

nute, ſetaceous, placed in the axils of the leaves. *Flowers* inodorous, yellowiſh-green. *Seeds* brown.

2. H. *ovata*. Vahl. n. 2. (H. volubilis; Linn. Syſt. Veg. 83.)—“ Leaves oblong or ovate, lanceolate or elliptic, ſerrated. Capſules oval.”—A native of South America.—*Leaves* two or three inches long, obtuſe at each end, ſmooth above; their ſtalks purpliſh, channelled above. Branches of the *panicle* divaricated, and, like the flowers, ſlightly ferruginous and downy. *Capſules* about two inches long, ſcarcely an inch broad, very obtuſe, ſeldom emarginate.

3. H. *lævigata*. Vahl. n. 3.—“ Leaves ovate-oblong, ſlightly crenate.”—Native of Cayenne.—*Branches* ſlightly ferruginous and downy. *Leaves* three inches long, rather obtuſe, ſhining, of a reddiſh-brown underneath, gracefully veined; ſtalks purpliſh, ſmooth. The partial flower-ſtalks two, at the diviſions of the *panicle*. Infloreſcence very ſimilar to that of the laſt ſpecies.

4. H. *viridis*. Vahl. n. 4. Fl. Peruv. v. 1. 44. t. 74. f *a*. —“ Leaves ovate, obtuſely pointed, ſerrated and entire. Foot-ſtalks ſhorter than the leaves. Capſules oval, emarginate.”—Found in groves upon the Andes.—Whole plant ſmooth. *Branches* forked. *Leaves* ſpreading, ſometimes oblong, ſomewhat leathery, ſmooth above; leaf-ſtalks twiſted, ſhort. *Bracteas* ovate, acute, hollow. *Flowers* yellow. *Stamens* united into a ſort of cup, which includes the germen; anthers gaping at the top. *Germen* obovate, triangular. *Style* three-furrowed at the top; ſtigma triangular. *Capſules* an inch long.

5. H. *diſperma*. Vahl. n. 5. (H. indica; Willd. Sp. Pl. v. 1. 193.)—“ Leaves elliptical, pointed, minutely ſerrated. Capſules lanceolate, with two ſeeds, obtuſe at each end.”—Native of the Eaſt Indies.—Whole plant ſmooth. *Branches* round. *Leaves* two inches long, ſlightly ſerrated towards the end, acute, ſometimes rather obtuſe, membranaceous, pale green, a little nervoſe on the upper ſide. *Panicles* ſhorter than the leaves. *Flowers* ſmooth. *Capſules* an inch long, ſtriated, gaping in the middle.

A variety, *β*, of this ſpecies, called by Vahl *Euonymoides*, is deſcribed by that author “ with oblong or obovate leaves, entire or emarginate at the top.” This variety differs in having the branches more remote, and its leaves three or four times as ſmall as in the original; there are alſo fewer flowers in the panicles.

6. H. *paniculata*. Vahl. n. 6.—“ Leaves oblong, acute at each end, obtuſely ſerrated.”—Found at Sierra Leone, and deſcribed by Vahl from a ſpecimen in the Herbarium of Juſſieu.—*Branches* ſhining, much ſpreading, extended at the joints, compreſſed at the top. *Leaves* three or four inches long, membranaceous, pale green. *Flower-ſtalks* half as long as the leaves. Its *fruit* is not known.

7. H. *macrophylla*. Vahl. n. 7.—“ Leaves oblong, pointed, entire, ſhining, obtuſe at the baſe.”—This, like the laſt, is a native of Africa, and preſerved in the collection of Juſſieu. —*Leaves* five or ſix inches long, a little acuminated, membranaceous, pale green, ſhining above. The *fruit* has not been ſeen.

8. H. *comoſa*. Vahl. n. 8. Swartz. Prod. 17. Ind. Occ. v. 1. 77.—(Bejuco; Lœfl. It. 314.)—“ Leaves ſomewhat heart-ſhaped or ovate, pointed, entire. Peduncles much-branched, capillary. Capſules oblong or obovate.”—Native of woods in the interior of Hiſpaniola, flowering in February and perfecting fruit in the middle of ſummer. The natives of St. Domingo call it *Amandier des Bois*. *Stem* climbing to a conſiderable height. *Branches* divaricated, reflexed, pendulous. *Leaves* oppoſite, entire, ſmooth on both ſides, having ſhortiſh, round footſtalks. *Panicles* terminal, repeatedly ſubdivided, bearing numerous, ſingle-flowered, white peduncles. *Flowers* polygamous, moſt of them barren. *Petals* oblong, obtuſe, white, perſiſtent. *Filaments* inſerted into the interior margin of the nectary. *Capſules* ſlightly ſtriated, of two valves, gaping in the middle. *Nuts* four, oblong, angulated, at firſt ſoft, but growing harder as they ripen, winged at the ſide and top; kernels ſweetiſh and oily.

The general habit of this genus is climbing, with very ſpreading branches, round and ſmooth in the lower part, and ſomewhat ſquare at the upper. Leaves oppoſite, on foot-ſtalks, ſmooth on both ſides. Panicles axillary and terminal, oppoſite, dichotomous. Flowers ſmall. Capſules ſmooth.

HIPPOCRATES, in *Biography*, the moſt diſtinguiſhed of the ancient phyſicians, and uſually called the *father of phyſic*, was born in the iſland of Cos, in the firſt year of the 80th Olympiad, or about 460 years before Chriſt. He was of the family of the Aſclepiades, *i. e.* the deſcendants of Æſculapius; his father, Heraclides, being the ſeventeenth lineal deſcendant from that perſonage, and the ſixteenth from Podalirius, who, with his brother, Machaon, followed the army of the Greeks, in the Trojan war, according to Homer. In this family the profeſſion of phyſic had been hereditarily followed from Æſculapius downwards, and under their direction the Coan ſchool attained its high degree of eminence. His maternal anceſtry was alſo honourable; his mother, Phenarete, being reputed the 18th lineal deſcendant from Hercules. Born under theſe favourable circumſtances, ſurrounded from his infancy with all the objects of his ſtudies, and aided by the collective knowledge, as well as incited to reſearch by the fame of his anceſtors, Hippocrates devoted himſelf zealouſly to the cultivation of the art, which he was deſtined to refine and improve. Not content with adopting the empirical practice which was hereditary in his family, he ſtudied medicine under Herodicus, who had invented the gymnaſtic medicine, and was inſtructed in philoſophy and eloquence by Gorgias, a celebrated ſophiſt, and brother of the phyſician juſt mentioned. He is ſaid alſo to have been a pupil of Democritus, (Celſus, lib. i. præf.) which, however, is conſidered as improbable; and to have been a follower of the doctrines of Heraclitus. In whatever ſtudy he engaged, however, he appears to have been a true eclectic, to have thought for himſelf, and to have adopted only thoſe principles which appeared to be founded in ſound reaſon. Thus, while he elucidated the empirical doctrines handed down to him by the light of philoſophy, he corrected, or rather rejected, the falſe theories with which the philoſophers, who had no practical knowledge of diſeaſes, had loaded the ſcience of medicine, and brought it into the true path of obſervation, under the direction of reaſon, that is, of a rational experience. Hence he is ſaid to have been the firſt who ſeparated the ſcience of medicine from philoſophy, or rather from mere ſpeculation, which then aſſumed that name. (“ Hippocrates Cous primus quidem, ex omnibus memoriæ dignis, ab ſtudio ſapientiæ diſciplinam hanc (ſcil. medicinam) ſeparavit, vir et arte et facundia inſignis.” Celſus, loc. cit.) For he conſidered philoſophy and medicine as mutual aids to each other, and the proper union of the two as conferring a god-like qualification on man: “ ἰατρὸς γὰρ φιλόσοφος ἰσόθεος.” (Lib. De decenti ornatu.) Hence the phyſicians of the rational or dogmatic ſect (ſo called in oppoſition to the empiric ſect) always acknowledged Hippocrates as their leader, being the firſt who combined reaſoning with experience.

Of the events of his life little is known with certainty: for of thoſe that are recorded, ſome have a fabulous appearance, and ſome are actually inconſiſtent with our knowledge of hiſtory. It is certain, that, after the manner of thoſe times, he ſpent the greater part of his life in travelling; reſiding, however, for a conſiderable period, at various places, in which he was occupied in the practice of his art. In this way he viſited the greater part of Greece and Aſia Minor; but it appears from his writings that his chief abode was in the provinces of Theſſaly and Thrace, eſpecially at Lariſſa, the chief city of the former, where he compoſed ſeveral books. Almoſt all the caſes of diſeaſe, which are well deſcribed in his books "on epidemical diſorders," occurred during his practice in theſe provinces. According to Soranus, he ſpent ſome time at the court of Macedon, where he ſignalized himſelf, in conſultation with Euryphon, a ſenior phyſician, by detecting the origin of the malady of the young Perdiccas. His obſervation of the emotion of the prince on the appearance of Phila, a miſtreſs of his father, led him to pronounce that love alone was capable of curing the diſeaſe which it had occaſioned. His fame cauſed him to receive invitations from different cities of Greece. He is ſaid to have been requeſted by the inhabitants of Abdera to go and cure their celebrated fellow-citizen, Democritus, of the madneſs under which they ſuppoſed him to labour. The alleged letter of the Abderites on this occaſion is ſtill preſerved. On viſiting the philoſopher, Hippocrates pronounced him not mad; but, on the contrary, the wiſeſt man in their city. A ſpeech aſcribed to his ſon Theſſalus is alſo extant, in which the ſervices of Hippocrates to the Athenians are enumerated. It is here ſaid, that Illyria and Pæonia being ravaged by the plague, the inhabitants of thoſe countries offered large ſums of money to induce Hippocrates to come to their relief; but that certain winds which at that time prevailed, led him to foreſee that the peſtilence was likely to penetrate into Greece; he, therefore, refuſed to quit his own country, but ſent his two ſons, and his ſon-in-law, through the different provinces, to convey the proper inſtructions for avoiding the infection; he himſelf went to Theſſaly, and thence to Athens, where he conferred ſuch eminent ſervices on the citizens, that they iſſued a decree honouring him with a crown of gold, and initiating him and his family in the ſacred myſteries of Ceres and Proſerpine. Hippocrates is likewiſe reported to have refuſed an invitation from Artaxerxes, king of Perſia, accompanied by a promiſe of every reward and honour which he might deſire, to repair to his dominions during a ſeaſon of peſtilence. The letters alleged to have paſſed on this occaſion are extant, in one of which Hippocrates replies, that "he has food, clothing, and a habitation, in his own country; that it would be unworthy of him to aſpire to the wealth and grandeur of the Perſians, or to cure barbarians who were the enemies of Greece." The enraged king ordered the inhabitants of Cos to deliver up Hippocrates, or to expect the terrors of his vengeance: but the iſlanders declared their reſolution to defend the life and liberty of their valued countryman at all hazards, and nothing was attempted by the Perſian. Moſt of theſe ſtories, however, are deemed fictitious by the moſt intelligent critics. The cure of the young Perdiccas probably originated from the report of a ſimilar cure aſcribed to ERASISTRATUS (which ſee); and the interview with Democritus is not ſupported by any ſatisfactory evidence. The relation of the ſervices of Hippocrates, during the plague at Athens, is altogether irreconcileable with the accounts of Galen and of Thucydides: the latter of whom is ſilent as to the name of Hippocrates, and affirms that the diſeaſe was unchecked, and that the phyſicians were its firſt victims. Beſides, that plague commenced during the Peloponneſian war, in the 2d year of the 87th Olympiad, at which time Hippocrates was about thirty years old, and therefore could not have had two ſons or a ſon-in-law in a condition to practiſe. It is ſuppoſed by M. Le Clerc, that Aëtius aſcribed to Hippocrates the operations during the plague at Athens, which Plutarch, with more appearance of truth, imputed to Acron of Agrigentum (ſee ACRON); and Dr. Ackermann juſtly conjectures, that theſe fables were all invented after the death of Hippocrates, and aſcribed to him by the followers of the Dogmatic ſect, of which, as we have already obſerved, he was regarded as the founder. (See Fabric. Biblioth. Græca. tom. ii. p. 512. edit. Harleſ.) The letters and other pieces, which are preſerved with the works of Hippocrates, under the title of τὰ ἐξωτικὰ, and on the authority of which theſe anecdotes are related, are generally deemed ſpurious.

After a long life ſpent in the ſucceſsful practice of his art, in perfecting his rational ſyſtem of medical inquiry, and in forming diſciples worthy to ſupply his place, Hippocrates died at Lariſſa in Theſſaly, at the age of 85, or 90, or, as others affirm, of 104, or even 109 years. He was buried between that city and Gyrtona. Beſides two ſons, Theſſalus and Draco, both eminent practitioners, he left a daughter, married to his favourite pupil, Polybus, who arranged and publiſhed the works of his great maſter; he left alſo a number of diſciples.

How dubious ſoever many of the circumſtances of the life of Hippocrates may be, it is not queſtioned that he acquired a reputation, which has ranked him high among the great men of Greece, and which may be traced from age to age, from the time in which he flouriſhed through all ſucceeding periods. He has not only paſſed, by almoſt univerſal conſent, for the father of phyſic and the prince of phyſicians, but his opinions were every where reſpected as oracles, not only in the ſchools of medicine, but in the courts of law. Philoſophers of every ſect were eager to read, to quote, and to comment upon his writings. He has ſhared with Plato the title of *Divine;* and not only ſtatues, but temples were erected to his memory, and his altars were covered with incenſe, like thoſe of Æſculapius himſelf. Indeed the qualifications and duties required in the character of the phyſician, were never more fully exemplified than in his conduct, or more eloquently deſcribed than by his pen. He had formed a very exalted notion of the dignity and uſefulneſs of his profeſſion, which is only lowered, he ſaid, in the public eſtimation, by the ignorance of its profeſſors; and he ſupported this dignity in his own perſon by the moſt rigid attention to the morality of private life, by great ſimplicity, candour, and benevolence in all his intercourſe with the ſick, and by unwearied zeal in inveſtigating the nature and progreſs of diſeaſes, and in adminiſtering to their cure. He is ſaid to have admitted no one to his inſtructions without the ſolemnity of an oath, the form of which is tranſmitted to us among his writings. In this the moſt religious attention to the advantages of the ſick, the ſtricteſt chaſtity, and inviolable ſecrecy, in regard to whatever it ſeems improper to divulge, are the principal points inculcated.

The books attributed to Hippocrates amount to ſeventy-two in number, of which, however, a conſiderable part are regarded as ſpurious; ſome containing opinions which were not prevalent till long after the age of Hippocrates, and ſome differing altogether in ſtyle and compoſition from the genuine writings of that maſter, which are compoſed in the Ionic dialect, and are diſtinguiſhed by a remarkable conciſeneſs, and, as it were, compreſſion of language, which at times, indeed, borders upon obſcurity. Some pieces have been obviouſly written after the commencement of the Chriſtian era, and Galen affirms that ſeveral interpolations and alterations were made by Dioſcorides and Artemidorus, ſurnamed Capito, in the time of Adrian. Polybus, the ſon-in-law of Hippocrates, who collected and edited his works, is believed to have written ſome of the pieces, and Theſſalus and Draco, his ſons, as well as Hippocrates III. and IV., his grandſons, are ſuppoſed to have written others, eſpecially ſeveral of the books of “Epidemics.” Again, Hippocrates, the firſt of the name, and grandfather of the great Hippocrates, is the reputed author of the treatiſes Περὶ ἀγμῶν and Περὶ ἀρθρῶν, as well as of that Περὶ τέχνης: while ſome eſſays have been aſcribed to the phyſicians of the contemporary Cnidian ſchool.

The following works are generally deemed original productions of Hippocrates, the Coan: namely, 1. The eſſay “On Air, Waters, and Soils;” 2. The firſt and third books of “Epidemics;” 3. The book “On Prognoſtics;” 4. The firſt and ſecond books of “Predictions;” and 5. The books of “Aphoriſms;” but the two laſt contain many interpolations by the two writers above mentioned, and others; 6. The treatiſe “On the Diet in Acute Diſeaſes;” 7. That “On Wounds of the Head.” Haller includes ſeveral more treatiſes in the liſt of genuine works of Hippocrates, which, however, have been diſputed, even from ancient times; ſuch as thoſe “On the Nature of Man;” “On the Humours;” “On Fractures;” “On the Joints;” and one or two others. Upon this ſubject the reader will find ample information in the able and learned eſſay of Dr. Ackermann, on the life and writings of Hippocrates, printed in Fabricius's Bibliotheca Græca, (4th edit. by Harles) tom. ii.:—alſo in Haller's Biblioth. Anat. Med. et Chirurg. Gælicke Hiſtor. Med. Period 5ta. Le Clerc. Hiſt. de la Médecine, p. 1. liv. iii. chap. 30.

The prodigious degree of authority, ſo long attached to the writings of Hippocrates, has occaſioned ſuch a multitude of editions, verſions, commentaries, diſſertations, &c. that many pages would be required to enumerate them. Haller has beſtowed much labour upon this object, and may be conſulted by the curious. We muſt confine ourſelves here to a curſory notice of the principal editions of the whole works.

The *Greek editions* are thoſe of Aldus, at Venice, in 1526, folio; and of Frobenius at Baſle, in 1538, folio.

The *Latin editions* are thoſe of Cratander, at Baſle, in 1526, folio, tranſlated by ſeveral hands;—of M. F. Calous, at Rome, 1525 and 1549, tranſlated from MSS. in the Vatican, by order of pope Clement VII.;—of J. Cornarius, at Venice, in 1545, 8vo. whoſe verſion has been frequently reprinted; and the verſion of Anutius Foëſius, at Francfort, 1596, 8vo. by Wechel.

The *Greek and Latin editions* are thoſe of Hieronymus Mercurialis, at Venice, 1578, folio;—of Zwinger, with the verſion of Cornarius, at Baſle, 1579, folio;—of Anutius Foëſius, at Francfort, 1595, ſeveral times reprinted;—of J. A. Vander Linden, alſo with the Latin verſion of Cornarius, at Leyden, 1665, 2 vols. 8vo. reprinted at Venice, 1757, in 2 vols. 4to.;—of Renatus Chartrier, together with the works of Galen, at Paris, in 14 vols. folio;—and of Steph. Mack, at Vienna, 1743, 1749, and 1759, 2 vols. folio.

Doctrines of Hippocrates.—To give a minute detail of the extent of the knowledge of Hippocrates in medicine, and in the collateral branches of anatomy, phyſiology, &c. as it may be collected from his various treatiſes, would be to write a volume on the ſubject. We muſt, therefore, limit ourſelves to an outline of his general precepts, referring thoſe of our readers, who may wiſh for a more ample view of them, to the works above-mentioned as genuine, or to the writers quoted in the courſe of this article. The anatomical knowledge of Hippocrates was neceſſarily limited by the prejudices of the times in which he lived, when the human body had never been diſſected for the purpoſes of anatomical enquiry; Eraſiſtratus and Herophilus, as we have ſtated, were the firſt to whom this permiſſion was given. His knowledge of the internal organs could only, therefore, be derived from accident, or a compariſon with thoſe of other animals. Hence, much of his phyſiological doctrines, and of his opinions reſpecting the cauſes and ſeats of diſeaſe, muſt neceſſarily be erroneous, and the whole extremely defective; eſpecially, when to ignorance of anatomy, the general deficiency of the age, in regard to the properties of the external world, is added. But by unceaſing obſervation of the phenomena of health and diſeaſe, Hippocrates in a great meaſure ſupplied the want of ſuch knowledge; ſo that his pathology and principles of cure bear, in many inſtances, a ſurpriſing reſemblance to thoſe of our own times, notwithſtanding our knowledge of the intimate ſtructure of the human body, and the general improvements in the philoſophy of nature.

Hippocrates conſidered the functions of the body as under the direction of an intelligent or inſtinctive principle, which he called *nature.* To this principle he aſcribed the “diſtribution of the blood, the ſpirits, and heat, to the different parts of the body, which receive by theſe means life and feeling.” (Lib. de Alimento.) “This faculty,” he ſaid, “nouriſhes, preſerves, and cauſes the growth of all the parts.” Its mode of operation he conceived to conſiſt in attracting, preparing, or changing whatever was uſeful, and in rejecting whatever was injurious or ſuperfluous, after having ſeparated it from the uſeful; and this he ſuppoſed to be effected by a ſort of affinity and repulſion in ſimilar and diſſimilar parts. This doctrine, under various modifications, has paſſed through all medical ſyſtems, differing in many inſtances only in the change of names; thus, in the “Nature” of Hippocrates, we ſee the “Archæus,” the “vital principle,” the “ſpirit of animation,” the “*vis medicatrix naturæ,*” of the moſt enlightened medical philoſophers of later times. It is not eaſy to collect an accurate view of the anatomy of Hippocrates, ſince different ſtatements on many points are to be found in different parts of the works aſcribed to him; it is to be regretted, that the book written by Galen, “De Anatomia Hippocratis,” is loſt. With reſpect to the *brain,* it does not appear that Hippocrates had the leaſt ſuſpicion of its connection with ſenſibility and underſtanding; indeed, ſo far from conſidering it as the peculiar ſeat of the thinking faculty, he places this faculty in the left ventricle of the heart. (Lib. De Corde.) He conſidered the brain as a glandular body, from its texture, and as a receptacle of redundant moiſture, collected by the condenſation of hot vapours, which it diſcharges again in defluxions and catarrhs. (Lib. De Glandulis.) In deſcribing the optic nerve, he repreſents it as a mere tube, through which the aqueous humour is diſtilled into the eye. But it ſhould be obſerved, that the book *De Glandulis* is deemed ſpurious by Galen; and that, *De Corde,* in which the ſtructure of the heart is rather minutely deſcribed, is neither mentioned by Erotian nor by Galen. The heart ſeems to have been regarded, at that time, as the organ for mixing with the blood ſome aërial principle, drawn from the lungs by its auricles, which are deſcribed as inflaters, or bellows, calculated for that purpoſe. Indeed, whatever was known to the ancients in regard to the motion of the blood, ſeems to have conſiſted in ſome vague idea of regurgitation, or a certain flux and reflux, barely ſufficient to prevent the ſtagnation of the contents of the veſſels. The lungs were deemed by Hippocrates the abſorbers and condenſers of ſuperfluous humours, and the moderators of internal heat; the liver, as the ſource of ſanguification and of heat, in common with the other abdominal viſcera. His phyſiology of generation indicates his imperfect knowledge of the organs concerned in that proceſs ; he had an extraordinary notion of the ſemen being prepared in the brain, and conveyed by the ſpinal marrow to the veſſels provided for its reception. He appears to have had no accurate ideas of muſcles or of muſcular motion, though he was acquainted with the number, figure, and connection of the bones.

The fluids were divided by Hippocrates into the four humours, blood, phlegm, yellow, and black bile (Lib. De Natura Hominis) ; to which he aſcribes peculiar properties of hot, cold, cold, dry, and moiſt, in different combinations. He conſidered health as the reſult of a due temperament and proportion of theſe ſeveral fluids, both in reſpect to quantity and quality ; and looked for the ſource of diſeaſe in the exceſs, defect, or depravation of any or all of theſe humours. He, likewiſe, included in his ſyſtem an analogy or connection between the four humours and the four ſeaſons of the year, as well as the four ages of man. Thus phlegm, which is the coldeſt humour, he believed to be increaſed during the winter and in old age ; whence at thoſe periods pituitous diſeaſes were prevalent, ſuch as expectorations, œdema, &c. In the ſpring, the blood begins to be redundant, eſpecially in young people, who then ſuffer bleedings from the noſe, dyſentery, &c. As the ſummer and autumn advance, the diſpoſition to bilious diſeaſes augmented, bilious evacuations occur ſpontaneouſly, and are procured by medicine. We have ſeen how this doctrine, of the four humours, and four qualities, when extended to all the agents employed in medicine by Galen, became the prevalent code of phyſic for thirteen centuries ; nor is it long ſince the relics of it yielded to the influence of experimental ſcience. See Galenical *Syſtem*.

But it is chiefly in matters of fact and obſervation that ſucceeding ages were indebted to the genius of Hippocrates, and in which the influence of his authority is ſtill extenſively viſible in the language of medical ſcience. He divided the cauſes of diſeaſes into external, including the influence of air, exerciſe, reſt, ſleep, and watching ; and internal, comprehending the food, drink, ſecretions, retentions, and paſſions of the mind. He divided diſeaſes themſelves into *epidemic*, *endemic*, and *ſporadic*, according to the preſent ſignification of thoſe terms ; and again into *acute* and *chronic*, limiting the former to the duration of fourteen days. He, likewiſe, divided the duration of an acute diſeaſe into four ſtages, the beginning, increaſe, height, and decline. It was in the third of theſe ſtages that he conceived the *concoction* of the morbid humours to be accompliſhed, and between this and the laſt ſtage, when he expected ſome indication from nature, by what outlet the morbific matter was to be expelled, which conſtituted the *criſis* of the diſorder, and which he was careful not to interrupt. (See Concoction and Crisis.) Theſe *critical* diſcharges and changes he was led, partly by experience, and partly by hypotheſis, to expect on particular days ; and many of his rules of prognoſis in acute diſeaſes, were built upon the obſervation of the changes of ſymptoms on ſuch days. This doctrine, however, we have already diſcuſſed at length (ſee Critical *Days*) ; and ſhall only remark, that the notion of a concoction and critical diſcharge of peccant matter, as the ſource of the phenomena of febrile and inflammatory diſeaſes, continued, under ſome modifications, to be the leading feature in medical ſyſtems to the time of Hoffmann ; that even Dr. Cullen did not altogether reject it ; and that it ſtill exiſts in popular language, and in vulgar medical opinions.

To the induſtry of Hippocrates we are indebted probably for an account of all diſeaſes which came under his inſpection ; and of the whole number, the greateſt part are ſtill characterized by the names invented or adopted by him, and not more than five or ſix of them appear to be extinguiſhed or unknown. Le Clerc has occupied a long chapter in enumerating the diſeaſes which ſtill retain the appellations given them by the father of phyſic. (See Hiſt. de la Médecine, p. 1. liv. iii. chap. 8. ; alſo, Gælicke, loc. cit. pp. 577—600.) But a diſtinguiſhing feature in the pathological talent of Hippocrates was his ſkill in diagnoſis and prognoſis ; his ſingular and conſtant care in watching all the minute changes in diſeaſe, having obtained for him a critical knowledge of ſymptoms, which enabled him not only to diſcriminate one diſeaſe from another, but to foreſee almoſt all their variations and terminations. On this point, Celſus admits that Hippocrates ſtood unrivalled by any of his ſucceſſors : "cum recentiores quoque medici, quamvis in curationibus mutarint, tamen hæc illum optime præſagiſſe fateantur." (De Medicinâ, lib. ii. Præf.) He carefully noticed a multitude of ſigns, which eſcaped the eye of ſuperficial obſervers. In a number of little peculiarities of mind and body, in the poſition of the limbs, (ſee Decubitus,) in the voluntary and involuntary motions, and the expreſſions of countenance, he ſhewed that indications of great importance might be diſcerned. But his moſt certain prognoſis was founded on the nature of the ſecretions, and of the urinary and alvine diſcharges, the various appearances of which ſupplied him with ſuch rational grounds of judgment, as ſucceeding inveſtigation has ſcarcely been able to impeach. His books of "Aphoriſms," and "Prognoſtics," contain the principal ſummary of his experience in ſymptomatology. The books of "Predictions," however, and of "Coan Prognoſtics," contain many erroneous precepts, whence Galen doubts their authenticity, and conſiders all that is valuable in them, as having been compiled from the two former books, and the books of "Epidemics." It has been diſputed among writers, whether Hippocrates had any knowledge of the pulſe : and although the affirmative ſeems probable, it is obvious that he did not lay much ſtreſs upon it in forming his indications.

With reſpect to the practice of Hippocrates, the length, to which this article has already extended, compels us to be brief. It would appear, indeed, that he conſidered it to be the duty of a phyſician, rather to watch patiently the progreſs of the operations of the conſtitution, and to remove impediments and aid the ſalutary actions, than to excite any decided changes by the action of powerful medicines. His obſervations on the powers of nature, and on the wiſdom of truſting to her efforts, in preference to the haſty, violent, or uncertain aſſiſtance of art, are frequently repeated. His general principles of cure are ſtated in the following axioms : "that as contraries are cured by contraries, ſo cold is the remedy for heat, and heat for cold ; evacuation will cure repletion, and repletion will repair the loſs ſuſtained from evacuation : that the art of medicine conſiſts in ſupplying deficiencies and retrenching ſuperfluities, in treating relaxation and contraction by their oppoſites, and in bringing back to their own channels fluids that are moving in improper courſes." (See Lib. de Priſca Medicinâ, De Natura Hominis, De Flatibus, &c.) Their dependence on the curative powers of nature led Hippocrates and the ancients in general to commence their therapeutic operations by the regulation of diet alone, in which, indeed, their whole practice often conſiſted. In contemplating their plans on this ſubject, modern feelings, and eſpecially thoſe of Engliſhmen, are appalled at the diſcipline which they inſtituted : for in very acute diſeaſes, they interdicted every kind of nutriment for the firſt three or four days ; allowing only as much thin drink

drink as was ſufficient to moiſten the parched throat, which was often adminiſtered on a ſmall ſponge, to prevent the thirſty patient from ſwallowing too copious a draught. During this period it was intended to leave the active powers of the conſtitution at full liberty to drive out or change all morbid matter. But if this effect did not follow, or if the ſtrength of the patient failed in the trial, a more plentiful dilution was then allowed, with a beverage compoſed of eight parts of water, one of honey, and occaſionally one of vinegar, ſometimes enriched with the juice of acid fruits, cooling herbs, or ſome weak ſharp wine: ptiſan, or barley-water, was alſo a common beverage given by Hippocrates in acute diſeaſes. This plan, when neceſſary, was generally continued till the fourteenth day, (the reputed commencement of the chronic term,) when a more ſubſtantial diet was allowed, though ſtill without recourſe to any medicine, except gentle emetics and laxatives, the former conſiſting generally of a decoction of hyſſop with ſalt and vinegar, and the latter of expreſſed juice or decoction of common cabbage, or the herb mercury, or the more pleaſant exhibition of whey a little ſalted. For the laſt mentioned purpoſe glyſters of ſea-water, or of vetches boiled in milk with a little ſalt, were in common uſe.

When more powerful medicines became neceſſary, the ancients recurred to ſome of the moſt active purgatives hitherto diſcovered in the vegetable world; ſuch as black and white hellebore, elaterium, colocynth, and ſcammony, which were frequently adminiſtered in quick ſucceſſion: but theſe were never preſcribed to children, old people, or pregnant women. Notwithſtanding the caution, however, with which theſe draſtic medicines were given, it would ſeem that the moſt ſerious miſchief ſometimes enſued from their exceſſive operation; as Hippocrates mentions, among his aphoriſms, that "convulſions after taking hellebore are fatal." In order to excite perſpiration, he uſed every external means of increaſing heat, ſuch as warming the room, covering the patient, pouring hot water on the head and limbs, with a free internal uſe of heated liquors, and often of pure wine. And to increaſe the urine, he gave garlic, cucumbers, melons, celery, fennel, and other ſtrong flavoured herbs.

Hippocrates did not, however, excluſively confine himſelf to the adminiſtration of internal remedies, and the regulation of diet; he reſorted to external means of cure, in ſome of which he appears to have exceeded the bounds of modern activity, as far as he fell ſhort of them, in merely watching the efforts of the conſtitution in other caſes. He employed blood-letting (an operation, the origin of which is concealed by the remoteneſs of its antiquity) with great freedom. In extreme caſes of pain or inflammation, it was his cuſtom to open at once the veins of both arms, and let the blood flow till the patient fainted. He often likewiſe drew blood copiouſly from the legs and feet, to relieve complaints of the head and upper parts of the body, by large and deep inciſions with the knife, which he then covered with copper or other metallic veſſels, exhauſted of their air by fire, reſembling the cupping glaſſes of our own times. He ſeems, indeed, to have entertained many ſingular notions of the revulſion, which might thus be produced. For example, he recommends bleeding in the forehead for a head-ache in the occiput; and in order to reſtrain the catamenia, when exceſſive, he applied large cupping veſſels to the mammæ. (Aph. ſect. v. 60. and 68.) He laid down a maxim, which forms a contraſt with the inertneſs of ſome of his precepts, that "thoſe diſeaſes, which medicines will not cure, yield to the knife; and thoſe which the knife will not cure, may be removed by fire; but where this laſt and moſt powerful remedy fails, the malady muſt be deemed incurable." (Aph. § viii. 6.) Accordingly in obſtinate chronic caſes, the local bleedings above-mentioned were commonly ſucceeded by the actual cautery, which produced large and long continued diſcharges from the head, neck, breaſt, ſide, limbs, or other parts, to which the burning was freely applied. Nor did he even ſpare the bones, which he burnt, ſawed, and perforated without ſcruple; and he uſed the trepan itſelf in caſes of violent head-ache. It appears, as well from theſe operations, as from his rational directions for the treatment of fractures and diſlocations, and the frequent cautions that he gives reſpecting the danger and difficulty attending wounds and bruiſes in nervous or tendinous parts, that Hippocrates combined the practice of ſurgery with that of medicine. But it would ſeem that he thought the difficult operations of ſurgery ſhould be performed only by thoſe, who, by confining their profeſſional employment to this exerciſe alone, had attained a peculiar dexterity of hand; for he enjoins his diſciples, even in their inaugural oath, to forbear from performing the operation of lithotomy.

Theſe operations, as well as the number of medicines mentioned by Hippocrates, imply a conſiderable previous advancement both in internal and manual medicine. Le Clerc has enumerated upwards of three hundred articles of diet and the materia medica, which were employed by him, from the animal, vegetable, and mineral kingdoms. Among theſe are various preparations of iron, copper, lead, and ſilver, alum, nitre, vitriol, &c. Narcotics are mentioned by Hippocrates, and were certainly uſed in ancient times; but he ſeems to have been cautious in adminiſtering them, and it is even a matter of diſpute whether he ever employed opium, the moſt potent and uſeful of the whole claſs. Among the articles of diet, Hippocrates is careful to mention the properties of the fleſh of the dog, fox, horſe, and aſs, which implies that theſe viands were then in uſe, at leaſt among the people.

We ſhall conclude this account of Hippocrates, with the brief and philoſophical view of the ſcience of medicine, exhibited in his firſt Aphoriſm, which in the terſeneſs of its expreſſion cannot be imitated in a modern language. It contraſts the brevity of human life with the long experience neceſſary to the cultivation of the art of medicine; and reminds us of the difficulty of obtaining that ſolid experience in an art where opportunity is tranſient, where experiment itſelf is often hazardous and deceptive, and the inferences of the judgment, therefore, extremely difficult. "Vita brevis, ars longa, occaſio celeris, experimentum lubricum, judicium difficile." See Le Clerc, Gœlicke, and Fabricius, as above quoted; alſo the works of Hippocrates, Vita Hipp. à Sorano, Walker's Memoirs of Medicine. General Biog.

HIPPOCRATES's *Sleeve*, *manica Hippocratis*, a kind of filtre, or ſtraining-bag, formed by joining the oppoſite angles of a ſquare piece of flannel, in form of a pyramid, and uſed to percolate or ſtrain ſyrups, decoctions, &c. for clarification.

HIPPOCRATIA, in *Antiquity*, feaſts celebrated by the Arcadians in honour of the equeſtrian Neptune, from a notion that the deity conferred horſes on men. During the celebration of them, horſes were exempted from all labour, and were led in proceſſion through the ſtreets, ſuperbly harneſſed, and adorned with garlands of flowers. The Romans celebrated thoſe feaſts under the title of CONSUALIA.

HIPPOCRATICA FACIES. See FACIES *Hippocratica*.

HIPPOCRENE, derived from ἱππος, *horſe*, and κρηνη, *fountain*, *q. d.* the fountain of the horſe Pegaſus, was a ſpring at the foot of mount Helicon, ſuppoſed to ſpring up upon

Pegaſus's ſtriking his foot againſt the mountain. See HELICON and AGANIPPE.

HIPPOCREPIS, in *Botany*, is derived from ἱππȣ κρηπις, *a horſe-ſhoe*, in alluſion to the particular conformation of its legumes, or rather the parts of its legumes, which reſemble as it were a connected ſeries of horſe-ſhoes. Few genera poſſeſs ſo decided and perceptible a character as this, by which it may be at once known, the horſe-ſhoe appearance of its fruit being ſo ſtriking, that no doubt can exiſt reſpecting any of the plants, which conſtitute the genus before us. Linn. Gen. 381. Schreb. 503. Willd. Sp. Pl. v. 3. 1158. Mart. Mill. Dict. v. 2. Sm. Fl. Brit. v. 2. 777. Ait. Hort. Kew. v. 3. 60. Juſſ. 361. Lamarck Dict. v. 3. 131. Illuſtr. t. 630. (Ferrum equinum; Tourn. t. 225.)—Claſs and order, *Diadelphia Decandria*. Nat. Ord. *Papilionaceæ*, Linn. *Leguminoſæ*, Juſſ.

Gen. Ch *Cal.* Perianth of one leaf, permanent, five-toothed; the two upper teeth united or leſs divided. *Cor.* papilionaceous. Standard heart-ſhaped, with a claw the length of the calyx. Wings ovate-oblong, obtuſe. Keel lunulate, compreſſed. *Stam.* Filaments diadelphous (ſimple and nine-cleft) aſcending; anthers ſimple. *Piſt.* Germen ſlender, oblong, terminating in an awl-ſhaped, aſcending ſtyle; ſtigma perfectly ſimple. *Peric.* Legume compreſſed and membranaceous, very long, curved inwards, cut from the lower ſuture almoſt to the upper into ſeveral roundiſh ſinuſes, ſo as to conſiſt of ſeveral bluntly triangular joints, connected by the upper ſuture. *Seeds* ſolitary in each joint, oblong, incurved.

Eſſ. Ch. Legume jointed, compreſſed, curved, with many deep ſinuſes, in one of its edges.

1. H. *uniſiliquoſa.* Single-legumed Horſe-ſhoe Vetch.—Linn. Sp. Pl. 1049. (Ferrum equinum vulgare; Column. Ecphr. t. 300.)—"Legumes ſeſſile, ſolitary, ſtraight."—Native of Italy and Switzerland, where it flowers in June and July. *Root* ſimple, annual. *Stems* ſeveral, ſimple, various in length, the long linear cotyledons often remaining at their baſe. *Leaves* alternate, of about five pair of emarginate leaflets, and an odd one, nearly ſmooth and ſomewhat glaucous. *Flowers* axillary, ſolitary, nearly ſeſſile, ſmall, pale yellow. *Legumes* ſpreading, an inch and half long, frequently with briſtly tufts at the back, where every ſeed is lodged, their ſides curiouſly veined and ſtriated. An excellent figure of this ſpecies, under the name of *Ferrum equinum*, may be ſeen in Gerarde's Herbal. 1235, alſo in Rivinus, Pentap. Irreg. t. 97. f. 1.

2. *H multiſiliquoſa.* Many-legumed Horſe-ſhoe Vetch.—Linn. Sp. Pl. 1050. Villars Dauph. v. 3. 400. (Ferrum equinum alterum πολυκερατον; Column. Ecphr. t. 300).—"Legumes ſtalked, crowded, circular."—Native of a chalky ſoil in the ſouth of France, Spain, and Italy, flowering in July and Auguſt.—This is alſo annual, and very cloſely allied in habit to the laſt. *Stem* ſimple, furrowed. *Leaves* alternate, of about five pair of emarginate leaflets, and an odd one, ſmooth, bright green. *Flowers*, axillary, yellow, many-cluſtered, upon long peduncles. *Legumes* curved, ſometimes ſo much as to form a circle.

3. *H. balearica.* Shrubby Horſe-ſhoe Vetch—Willd. n. 3. Jacq. Ic. Bar. t. 149. Curt. Mag. t. 427.—"Legume pedunculated, crowded, ſmooth, lobed only in the outer margin."—Native of Minorca, flowering in May and June. *Root* woody, ſending forth aſcending *branches*. *Leaves* pinnate, ſmooth, of about eight pair of ovate-linear leaflets, with an odd one. *Peduncles* very long, terminated by an umbel of many yellow *flowers*, which have a faint, ſweet ſmell. *Legume* oblong, obtuſe, ſtraightiſh, or a little curved, ſinuated twice or thrice on the upper ſuture, ſmooth and browniſh furniſhed with ſhining, round, brown *ſeeds*.

4. *H. comoſa.* Tufted Horſe-ſhoe Vetch.—Linn. Sp. Pl. 1050. Sm. Fl. Brit. v. 2. 777. Engl. Bot. t. 31.—"Legumes pedunculated, cluſtered, curved, waved in the external margin."—Found on dry chalky banks in Kent, Cambridgeſhire, and other parts of England, bearing flowers from May to Auguſt. This is rather a ſcarce perennial, with a woody *root* and ſmooth herbage. *Stems* proſtrate, furrowed. *Leaves* pinnate, of numerous obovate emarginate leaflets, with an odd one. *Stipulas* lanceolate. *Peduncles* axillary, very long; partial-ſtalks ſhort, hairy. *Flowers* yellow. *Legumes* recurved, rough with little glands. *Seeds* kidney-ſhaped.

5. *H. barbata.* Bearded Horſe-ſhoe Vetch.—Loureir. Cochinch. v. 2. 453.—"Legume pedunculated, ſtraight, ſpike of flowers oblong, terminal."—Native of fields in Cochinchina.—*Stem* ſomewhat ſhrubby, four feet high, erect, round. *Leaves* ovate, entire, ſmooth, ternate, the middle leaflet larger. *Flowers* purple. *Legume* barbed, moſtly on the exterior ſuture, and deeply emarginate. *Seeds* angularly kidney-ſhaped, ſmall, compreſſed.—This ſpecies has not yet been introduced into Europe. We know it only from Loureiro.

HIPPODROME, HIPPODROMUS, compoſed of ἱππος, *horſe*, and δρομος, *courſe*, of the verb δρεμω, *curro*, *I run*, in *Antiquity*, a liſt, or courſe, wherein chariot and horſe-races were performed, and horſes exerciſed.

The Olympian hippodrome, or horſe-courſe, was a ſpace of ground of 600 paces long, ſurrounded with a wall, near the city Elis, and on the banks of the river Alpheus. It was uneven, and in ſome degree irregular, on account of the ſituation; in one part was a hill of moderate height, and the circuit was adorned with temples, altars, and other embelliſhments. (See STADIUM.) Pauſanias (l. vi.) has given us the following account of this hippodrome, or horſe-courſe: As you paſs out of the ſtadium, by the ſeat of the Hellanodics, into the place appointed for the horſe-races, you come to the barrier (Αφεσις) where the horſes and chariots rendezvous before they enter into the courſe. This barrier, in its figure, reſembles the prow of a ſhip, with the roſtrum or beak turned towards the courſe. The other end, which joins on to the portico of Agaptus (ſo called from him who built it), is very broad. At the extremity of the roſtrum or beak, over a bar that runs acroſs the entrance (επι κανονος), is placed a figure of a dolphin in braſs. (This dolphin is a ſymbol of Neptune, ſurnamed Hippian or Equeſtrian, for his having produced a horſe by ſtriking the earth with his trident, according to the fable; without the recollection of which circumſtance the reader might be ſurprized to meet with the figure of a dolphin in a horſe-courſe.) On the two ſides of the barrier, each of which is above 400 feet in length, are built ſtands or lodges, as well for the riding-horſes as the chariots, which are diſtributed by lot among the competitors in thoſe races; and before all theſe lodges is ſtretched a cable, from one end to the other, to ſerve the purpoſe of a barrier. About the middle of the prow is erected an altar, built of unburnt brick, which every Olympiad is plaiſtered over with freſh mortar; and upon the altar ſtands a brazen eagle, which ſpreads out its wings to a great length. This eagle, by means of a machine which is put in motion by the preſident of the horſe-races, is made to mount up at once to ſuch a height in the air, as to become viſible to all the ſpectators; and at the ſame time, the brazen dolphin beforementioned ſinks to the ground. Upon that ſignal the cables, ſtretched before the lodges on either ſide of the portico of

Agaptus, are firſt let looſe, and the horſes there ſtationed move out and advance till they come over againſt the lodges of thoſe who drew the ſecond lot, which are then likewiſe opened. The ſame order is obſerved by all the reſt, and in this manner they proceed through the beak or roſtrum; before which they are drawn up in one line, or front, ready to begin the race, and make trial of the ſkill of the charioteers and fleetneſs of the horſes. (See Chariot.) On that ſide of the courſe, which is formed by a terrace raiſed with earth, and which is the largeſt of the two ſides, near to the paſſage that leads out of the courſe acroſs the terrace, ſtands an altar of a round figure, dedicated to Taraxippus, the terror of the horſes, as his name imports. The other ſide of the courſe is formed, not by a terrace of earth, but a hill of moderate height, at the end of which is erected a temple, conſecrated to Ceres Chamyne, whoſe prieſteſs has the privilege of ſeeing the Olympic games.

There is a very famous hippodrome at Conſtantinople, which was begun by Alexander Severus, and finiſhed by Conſtantine. This circus, called by the Turks *atmeidan*, is 400 paces long, and above 100 paces wide, *i. e.* geometrical paces of five feet each. Wheeler ſays it was in length about 550 ordinary paces, and in breadth about 120; or, allowing each pace to be five feet, 2750 feet long and 600 broad. At the entrance of the hippodrome there is a pyramidal obeliſk of granite, in one piece, about 50 feet high, terminating in a point, and charged with hieroglyphics erected on a pedeſtal of eight or ten feet above the ground. The Greek and Latin inſcriptions on its baſe ſhew that it was erected by Theodoſius; the machines that were employed to raiſe it were repreſented upon it in baſſo relievo. See Circus.

The beauty of the hippodrome at Conſtantinople has been long ſince defaced by the rude hands of the Turkiſh conquerors; but under the ſimilar appellation of atmeidan, it ſtill ſerves as a place of exerciſe for their horſes. Whether the Olympic hippodrome was ſo long or ſo wide as this of Conſtantinople, it is not now eaſy to determine; but it muſt evidently have been conſiderably longer than an ordinary ſtadium, in order to allow for the turnings of the chariots and horſes round the pillars which ſerved as metas or goals, without running againſt them, or againſt one another. The length of the courſe, or the diſtance between the two metas or goals, is not eaſily aſcertained. It is probable, however, that the two pillars, *viz.* that from which the horſes ſtarted, and that round which they turned, which divided the courſe into two equal lengths, were two ſtadia diſtant from each other; conſequently, the whole length of the race, for a chariot drawn by full aged horſes, conſiſting of 12 rounds, amounted to 48 ſtadia, or ſix Grecian miles; and that of the chariot drawn by colts conſiſted of eight rounds or 32 ſtadia, or four Grecian miles; a Grecian mile, according to Arbuthnot's computation, being ſomewhat more than 800 paces, whereas an Engliſh mile is equal to 1056. Pauſanias informs us, that in the Olympic hippodrome, near that pillar called Nyſſé, probably that which was erected at the lower end of the courſe, ſtood a brazen ſtatue of Hippodamia, holding in her hand a ſacred fillet or diadem, prepared to bind the head of Pelops, for his victory over Oenomaus; and it is probable that the whole ſpace between the pillars was filled with ſtatues or altars, as that in the hippodrome at Conſtantinople ſeems to have been. Here, however, ſtood the tripod, or table, on which were placed the olive-crowns and the branches of palm deſtined for the victors. Beſides the hippodromes at Olympia and Conſtantinople, there were courſes of a ſimilar kind at Carthage, Alexandria in Egypt, and other places.

We have ſome veſtiges in England of the hippodromus, in which the ancient inhabitants of this country performed their races. The moſt remarkable is that near Stone-henge; which is a long tract of ground, about 350 feet, or 200 druid cubits wide, and more than a mile and three quarters, or 6000 druid cubits in length, incloſed quite round with a bank of earth, extending directly eaſt and weſt. The goal and career are at the eaſt end. The goal is a high bank of earth, raiſed with a ſlope inwards, on which the judges are ſuppoſed to have ſat. The metæ are two tumuli, or ſmall barrows, at the weſt end of the courſe. Theſe hippodromes were called, in the language of the country, *rhedagua*, the racer *rhedagwr*, and the carriage *rheda*, from the Britiſh word *rhedeg*, *to run*. One of theſe hippodromes, about half a mile to the ſouthward of Leiceſter, retains evident traces of the old name *rhedagua*, in the corrupted one of *rawdikes*. There is another of theſe, ſays Dr. Stukeley, near Dorcheſter; another on the banks of the river Lowther, near Penrith in Cumberland; and another in the valley, juſt without the town of Royſton.

HIPPODROMUS, in *Chronology*, the Bœotian name for the Athenian month Hecatombæon, or Ecatombæon.

HIPPOGLOSSUM, Horse-tongue, in *Botany*, the name of a plant of the *ruſcus*, or butcher's broom kind, called by others the Alexandrian bay, or *laurus Alexandrina*.

HIPPOGLOSSUS, in *Ichthyology*, *Holibut*, a ſpecies of Pleuronectes, which ſee.

HIPPOLAPATHUM, in *Botany*, a ſpecies of lapathum, called alſo monk's rhubarb.

HIPPOLAUS, in *Ancient Geography*, a promontory of European Scythia, which was a tongue of land between the mouth of the Boryſthenes and that of Hypanis. Herodotus ſays, that here was a temple dedicated to Ceres.

HIPPOLITHOS, a name given by ſome authors to the ſtones found in the ſtomachs and inteſtines of horſes: there are often a great number of theſe in one horſe; and they are frequently found in the colon of a very large ſize. See Bezoar.

HIPPOLYTUS, St. in *Biography*, a Chriſtian biſhop and martyr, in the third century, was the diſciple of Irenæus, and the inſtructor of Origen. He is celebrated for his zeal and labours in preaching the goſpel, and in defending the Chriſtian religion. The ſeat of his principal labours was at Rome, where it is probable he ſuffered martyrdom. This event took place in the year 230, under the emperor Alexander Severus. Some, however, aſcribe it to the perſecution under Maximinus, five years later; and there are others who contend that it did not occur till the Decian perſecution, about the year 250. He was held in high eſtimation for his piety and learning, and he was author of a number of works on a variety of ſubjects. Of his great fame, a noble monument erected to his honour near Rome affords ſome proof. This monument conſiſts of a marble ſtatue, repreſenting a venerable perſon ſitting in a chair, on the ſides of which are engraved, in Greek letters, cycles of 16 years, forming the moſt ancient paſchal canon in exiſtence. It was publiſhed in Greek by Joſeph Scaliger, with commentaries, in 1595, and afterwards in Latin, by father Giles Bucher in 1694. Hippolytus was author of many other works; but ſome given to him are unqueſtionably ſpurious. Dr. Lardner has inveſtigated their authenticity, and having ſo done he adds, "If I may at laſt deliver my own opinion, I would ſay, though ſcarcely any of them are altogether ſincere and uncorrupted, there are few of which ſome good uſe may not be made by a man of candour and judgment." Lardner's Credibility.

HIPPOMANE, in *Botany*, an ancient Greek name adopted by Linnæus for an American genus to which it could not poſſibly originally belong, but whoſe qualities perhaps may excuſe its application. The word is conſtructed of ἱππος, *a horſe*, and μανια, *madneſs*, the ancient plant being of ſo virulent a nature as to bring madneſs upon ſuch animals, if they happened to partake of it.—The genus in queſtion is not behind-hand with any plant in noxious qualities.—Linn. Gen. 205. Schreb. 659. Swartz. Obſ. Bot. 369. Willd. Sp. Pl. v. 4. 571. Mart. Mill. Dict. v. 2. Ait. Hort. Kew. v. 3. 378. Juſſ. 391. Lamarck Illuſtr. t. 793. (Mançanilla; Plum. Nov. Gen. 50.)—Claſs and order, *Monœcia Monadelphia*. Nat. Ord. *Tricoccæ*, Linn. *Euphorbiæ*, Juſſ.

Gen. Ch. Male-flowers in a terminal catkin. *Cal.* Perianth of one leaf, bifid, turbinate, obtuſe, very ſmall. *Cor.* None. *Stam.* A ſingle thread-ſhaped filament, twice the length of the calyx; anthers four, roundiſh, affixed croſſwiſe to the ſides of the filament towards the top. Female-flower ſolitary, terminal. *Cal.* Perianth withering, of three roundiſh, concave, obtuſe converging leaves. *Cor.* None. *Piſt.* Germen ovate, large; ſtyle very ſhort; ſtigma about ſeven-cleft, acute, reflexed. *Peric.* Drupa globular, very large, one-celled, crowned with the permanent ſtigma. *Seed.* Nut woody, irregular, acuminated, excavated with little pits and accompanied by appendages, of ſeven cells and ſeven valves; kernels ſolitary, roundiſh.

Eſſ. Ch. Male, a catkin. Perianth two-cleft. Corolla None. Female, Perianth three-cleft. Corolla None. Stigma ſeven-cleft. Drupa with a nut of ſeven cells.

1. H. *Mancinella.* Linn. Sp. Pl. 1431. Jacq. Amer. 250. t. 159. (Juglandi affinis arbor julifera lacteſcens venenata pyrifolia, Mançanilla Hiſpanis dicta; Sloan. Jam. v. 2. 3. t. 159.)—Leaves ovate, ſerrated, with one gland at the baſe; ſtalks half as long as the leaves.—Native of ſandy, watery places near the coaſt in various parts of the Weſt Indies.—This is a tall and ſpreading tree, of handſome appearance, compared by Jacquin to a Pear-tree. Every part, when wounded, exudes a plentiful, very white, but highly cauſtic and venomous milk, raiſing bliſters on the ſkin like a burn, nor can ſcarcely any part of the plant be touched with ſafety. It is reported, that many of the Europeans who firſt landed at Surinam died ſuddenly from ſleeping under this tree. Jacquin ſays, that ſome kind of Land-Crabs become poiſonous food from eating the fruit, which is by no means wonderful. The *wood*, however, is valued for being capable of taking a high poliſh, and being beautifully variegated with ſeveral dark colours. The *Leaves* are ſcattered, ovate, acute, with ſhallow ſerratures, ſmooth, veiny, about two inches long, on ſtalks not quite ſo long, which are ſlender and ſmooth, crowned where they enter the baſe of the leaf with one, round, depreſſed gland. The male *Catkins* grow at the end of the branches and are of a yellowiſh-green colour. Female-flowers at the diviſion of the twigs, ſolitary, round and green. *Fruit* the ſize of a walnut without the coat, of a yellowiſh-green, reſembling a crab-apple in ſize and ſmell; the coat is very thin, and nut large. Sloane ſays, that goats are very fond of the fruit, which does not render either their fleſh or their milk poiſonous.

It is neceſſary to obſerve, that *Hippomane biglanduloſa* of the *Plantæ Surinamenſes*, n. 129, *Amœn. Acad.* v. 8. 263, appears by the Linnæan Herbarium to be a totally different plant from that originally ſo called by Linnæus, as well as from the above deſcribed. Its leaves are like thoſe of *Magnolia grandiflora*, but we have not materials to determine its genus. Linnæus ſays, the fruit is tricoccous; if ſo, it may belong to the genus *Sapium* of Jacquin, Willd. v. 4. 572, to which the other Linnæan ſpecies of *Hippomane* are now referred. If they remain ſo, the ſpecific character of the *Mancinella* becomes ſuperfluous.

HIPPOMANES, compounded of ἱππος, *horſe*, and μανια, *madneſs*, a ſort of poiſon, famous among the ancients as an ingredient in amorous philtres, or charms.

Naturaliſts are not agreed about the nature of the hippomanes. Pliny deſcribes it as a blackiſh caruncle, found on the head of a new-foaled colt; which the dam bites off and eats as ſoon as ſhe is delivered. He adds, that if ſhe be prevented herein by any other's cutting it off before, ſhe will not take to, nor bring up her young.

Virgil, and after him Servius and Columella, deſcribe it as a poiſonous matter trickling from the pudendum of a mare, when proud, or longing for the horſe. Æn. lib. iv. ver. 515.

At the end of Mr. Bayle's Dictionary is a very learned diſſertation on the hippomanes; and all its virtues, both real and pretended.

HIPPOMYREX, the *horſe ant*, the name of a ſpecies of ant much larger and nimbler than the common kind. This builds in woods, and makes its neſts of ſticks and ſtraws, and fragments of various parts of trees. The common ant builds only with earth.

HIPPONE, in *Mythology*, the goddeſs of horſes and chariots.

HIPPONESUS, in *Ancient Geography*, a town of Aſia, in Caria.—Alſo, a town of Libya.

HIPPONIATES SINUS, a gulf of the Tyrrhenian ſea, on the weſtern coaſt of the kingdom of Naples.

HIPPONITES, a lake of Africa, on the banks of which was built the town of Hippo-Zarytus.

HIPPONIUM, called alſo *Viba Valentia*, *Bivona*, a town of Italy, upon the weſtern coaſt of Brutium, at the lower part of a gulf, which opened to the north.

HIPPOPECTINITE, in *Natural Hiſtory*, or great ſcallop, is a foſſil ſhell, half a foot over, found in a great rock in Virginia, 40 miles from a ſea or river, according to Dr. Grew. Rarities of Greſham College, p. 262.

HIPPOPHÆ, in *Botany*, apparently from ἱππος, *a horſe*, and φαω, *to deſtroy*, a name in Dioſcorides for what he ſays was uſed by fullers in dreſſing cloths, but whoſe deſcription anſwers to ſomething of the *Rhamnus* kind. It is however in ſome points applicable to the ſhrub for which it is retained by Linnæus.—Linn. Gen. 517. Schreb. 682. Mart. Mill. Dict. v. 2. Sm. Fl. Brit. 1075. Juſſ. 75. Lamarck. Illuſtr. t. 808. Gærtn. t. 42.—(Rhamnoides; Tourn. t. 481.)—Claſs and order, *Diœcia Tetrandria*. Nat. Ord. *Calyciflora*, Linn. *Elæagni*, Juſſ.

Gen. Ch. Male, *Cal.* Perianth of one leaf, divided almoſt to the baſe into two equal, roundiſh, obtuſe, concave, erect lobes, cohering at their ſummit, but a little gaping below. *Cor.* None. *Stam.* Filaments four, very ſhort; anthers oblong, angular, nearly equal to the calyx.

Female, *Cal.* Perianth of one leaf, ovate-oblong, tubular, ſlightly cloven at the top, deciduous. *Cor.* None. *Piſt.* Germen ſuperior, ſmall, roundiſh; ſtyle ſimple, very ſhort; ſtigma thickiſh, oblong, recurved, reaching twice the length of the calyx. *Peric.* Berry nearly globoſe, of one cell. *Seed* ſolitary, oblong, ſhining, with a furrow at each ſide, inveſted with a double membranous coat.

Eſſ. Ch. Male, Calyx in two deep ſegments. Corolla none. Female, Calyx tubular, cloven. Style one. Berry ſuperior. Seed ſolitary, doubly coated.

Obſ. Mr. Viborg, the Daniſh naturaliſt, has diſcovered ſome hermaphrodite flowers, occaſionally intermixed with the others. Gærtner deſcribes but a ſingle coat to the ſeed, which he properly calls the lining of its cell, overlooking a thicker, almoſt leathery, integument, or arillus, which cloſely enfolds the ſeed itſelf, and which is well diſplayed by Mr. Sowerby in Engl. Bot.

1. H. *rhamnoides.* Linn. Sp. Pl. 1452. Engl. Bot. t. 425. Pall. Roſſ. v. 1. t. 68. Fl. Dan. t. 265. (Rhamnus ſecundus Cluſii: Ger. em. 1334.) Sallow-thorn, or Sea Buckthorn.—Leaves lanceolate.—Native of ſandy banks and marſhes near the ſea, in various parts of Europe, from the ſouth of France to Finland. It is abundant on the Norfolk coaſt, growing on the cliffs and ſand-banks, and flowering about the middle of May, nor is it unfrequently cultivated in ſhrubberies. The woody buſhy *ſtem* is ſix or eight feet high, thorny. *Leaves* ſcattered, about two inches long, lanceolate or almoſt linear, bluntiſh, entire, of a ſilvery white beneath. Both their ſurfaces, as well as the young bark and half-ripe fruit, are cloathed with minute umbilicated ſcales, as in the genus *Elæagnus*. *Flowers* ſmall, green, in the boſoms of the lowermoſt leaves of each branch, while very young, the two ſexes on different ſhrubs. *Berries* ripened in autumn, very copiouſly on the wild plants, never, as far as we have ſeen, on garden ones. They are the ſize of large currants, of a glowing orange-colour, pulpy, very acid, agreeable enough when preſerved with ſugar. Linnæus found the Finlanders uſing them as a ſauce to their fiſh, but he complained of their intolerable acidity. Rouſſeau gives a ludicrous account of the ſingular politeneſs of a young man, who ſeeing him eat theſe berries, as they were walking together, did not preſume to take the liberty of telling him they were conſidered as poiſonous.

2. H. *canadenſis.* Linn. Sp. Pl. 1453.—Canada Sea Buckthorn.—Leaves ovate.—Gathered by Kalm in Canada. It differs from the former in its much ſhorter, broader, ovate or elliptical *leaves,* very conſpicuous for their ſilvery backs, and the ruſty ſcales ſcattered over them. The *flowers* are in little, brown, ſhining, axillary cluſters.

HIPPOPHEOS. This was a name given not only to the larger ſpecies of the pheos or ſtebe, but to a very different plant, a kind of dodder, more vulgarly called epipheos, from its growing upon the pheos, as the dodder of thyme is called epithymum, from its growing upon that plant. It is poſſible indeed that it might be called originally hippopheos, from its riding, as it were, on the pheos. But however this be, there is great reaſon to ſuſpect that Dioſcorides confounds this dodder with the plant itſelf, and gives its virtues as thoſe of the proper hippopheos; which, according to Theophraſtus, and all the other writers of credit in antiquity, is only a larger ſpecies of the pheos, a prickly ſhrub, not a plant, growing on it. See EPIPHEOS.

HIPPOPHTHALMIC MUSCLES, a name given by the ichthyologiſts to a pair of large muſcles found in the head of fiſh, one placed immediately under the eye; theſe ſerve to move the eyes; and, with the two maxillary muſcles placed under the jaws, are the principal muſcular parts of the head of fiſh.

HIPPOPODES, or HIPPOPEDES, compoſed of ἵππος, *horſe,* and πȣς, *foot,* in *Ancient Geography,* an appellation given to a certain people ſituated on the banks of the Scythian ſea; as being ſuppoſed to have horſes' feet.

The hippopodes are mentioned by Dionyſius, Geogr. v. 310. Mela, lib. iii. cap. 6. Pliny, lib. iv. cap. 13. and St. Auguſtine, De Civit. lib. xvi. cap. 8. But the truth is, that they had this appellation given them on account of their ſwiftneſs, or lightneſs of foot.

HIPPOPOTAMUS, in *Zoology,* a genus of Mammalia in the order Belluæ; the front teeth in each jaw are four, thoſe in the upper jaw are remote and form a pair each ſide; thoſe in the lower are prominent, and the two middle ones longeſt; the tuſks are ſolitary, the lower ones long, curved, and obliquely truncated; feet furniſhed with hoofs at the margin.

Whether in reality there may exiſt more than one ſpecies of this genus appears uncertain; there is every reaſon to apprehend the morſe has been ſometimes confounded by travellers with the true hippopotamus; and the diſcordance which we trace in their reports, ariſing as it muſt be conceived from this particular cauſe, may have erroneouſly given birth to the prevailing ſuppoſition of thoſe writers who believe there are two ſpecies. The obſervations of Sonnini ſeem in favour of the exiſtence of more than one kind, yet his concluſions, however juſt, are not apparently founded on better authority than the diſcordance of writers, to which we before alluded. Thoſe who apprehend there are two ſpecies conſider one as an inhabitant of the freſh water, or rather of inland rivers, lakes, and marſhes, and the other to be entirely confined to the ſea; the latter is probably the morſe.

After the elephant and the rhinoceros, the hippopotamus has been in all ages an object of admiration to mankind; its ſize is often equal to that of the rhinoceros, and its force but little, if at all, inferior; and thus in magnitude, as well as ſtrength, it yields alone to the decided ſuperiority of the elephant.

The appearance of the hippopotamus when on the land is altogether uncouth, the body being extremely large, flat, and round, the head enormouſly large in proportion, and the legs as diſproportionately ſhort. Authors vary conſiderably in deſcribing the ſize of this animal. The length of a male has been known to be ſeventeen feet, the height ſeven feet, and the circumference fifteen; the head three feet and a half, and the girt nine feet; the mouth in width about two feet. The general colour of the hippopotamus is browniſh; the ears ſmall and pointed, and lined very thickly with fine ſhort hairs; the eyes are ſmall in proportion to the ſize of the creature, and black; the lips are very thick, broad, and beſet with a few ſcattered tufts of ſhort briſtles; the noſtrils ſmall. The armament of teeth in its mouth is truly formidable, more particularly the tuſks or canine teeth of the lower jaw, which are of a curved form, ſomewhat cylindrical, ſtriated in a longitudinal direction, and obliquely truncated at the end; theſe are ſo ſtrong and hard, that they will ſtrike fire with ſteel, are ſometimes more than two feet in length, and weigh upwards of ſix pounds each. The teeth in the upper jaw much ſmaller; thoſe in the upper jaw are of a moderate ſize; thoſe in the lower ſtrong, ſomewhat conic, ſharp pointed, and projecting forwards almoſt horizontally. The whole ſurface of the body is covered with ſhort hair, which is more ſparingly ſet on the under parts than the upper. The tail is ſhort, thick, ſlightly compreſſed, a little hairy, and marked by ſeveral ſtrong circular wrinkles. The feet are large, and each of the four lobes or toes furniſhed with a hoof.

The colour of the hippopotamus, when juſt emerging from the water, is paliſh brown, or mouſe colour, the lower parts inclining to blueiſh or ſlate colour, the belly fleſh colour, and the ſkin appearing through the hair. Sparrman ſpeaks of its "ſlimy appearance when newly come out of the water, which is ſaid to gliſten in the moon-ſhine like a fiſh," and other writers agree that the blueiſh tinge of colour that appears on the body, when riſing out of the water, is entirely diſſipated as the ſkin becomes dry.

This animal was well known to the ancients. Moſt commentators conceive it to be the behemoth of Job, who deſcribes its manners, food, and haunts ſo admirably, as to leave little reaſon for believing that ſcriptural writer alluded to any other animal. In the verſe, "Behold now Behemoth which I made near thee ; he eateth graſs as an ox." It is repreſented as an inhabitant of the Nile, in the neighbourhood of Uz, the land of Job, and as an animal that ſubſiſts on vegetable food ; the ſecond, " Lo ! now his ſtrength is in his loins, and his force is in the navel of his belly ;"—and " his bones are as ſtrong as pieces of braſs, his bones are like bars of iron," indicate its great ſtrength and the hardneſs of his bones. Its reſidence among the vaſt reedy marſhes, in rivers overſhadowed with thick foreſts, is implied in the verſe, " He lieth under the ſhady trees, in the covert of the reeds and fens." And in the fifth verſe, " Behold ! he drinketh up a river ; he truſteth he can draw up Jordan into his mouth," refers to the characteriſtic wideneſs of his mouth, which is poetically deſcribed as large enough to exhauſt ſuch a ſtream as the Jordan.

By writers of antiquity, the hippopotamus is deſcribed as poſſeſſing the moſt marvellous powers of ſtrength. They alſo feigned that it vomited fire, in alluſion, no doubt, to the prodigious hardneſs of its teeth, which give fire with ſteel. Among the ancient Egyptians it was revered as a tutelary divinity ; they paid it ſacred honours, and engraved its image upon their obeliſks. But if we may credit Diodorus Siculus, they would ſometimes wage war againſt this object of their adoration, attacking it with ſpears and daggers, and after inflicting many grievous wounds, leave the poor lacerated beaſt to expire through the loſs of blood. In like manner the negroes of Congo, Angola, Elmina, and other adjacent parts of Africa, at this day regard the hippopotamus as a god, and yet they not only attack and deſtroy it, but devour its fleſh with great avidity. The hippopotamus occurs among the little figures in the caſts taken from the ancient tombs of Siberia, now at Paris, from whence it is concluded this animal was formerly known in that part of the world ; not as an inhabitant, the rigorous coldneſs of the climate forbidding that idea, but as an idol, and being there worſhipped as a divinity as well as in Egypt.

Pliny relates that Scaurus, during his ædileſhip, exhibited before the Roman people four crocodiles, and one hippopotamus, in a temporary lake prepared for the occaſion. Auguſtus alſo produced one of the latter on his triumph over Cleopatra ; and after this the figure of the hippopotamus appears on various medals of the Roman emperors. For many ages after no authentic hiſtory of this animal was obtained. The firſt among modern deſcribers who have noticed it with accuracy was Zerenghi, an Italian ſurgeon, who, about the beginning of the ſeventeenth century, printed an account of it at Naples, accompanied by a figure taken from a dried ſkin, which figure is again given in the works of Aldrovandus. Since that period the hiſtory of this animal has been more fully developed, through the zealous attention beſtowed on the ſubject by travellers, to whom an opportunity has been afforded of examining the animal in the living ſtate, and in its native regions ; and to none of whom the curious are more indebted, for ſatisfactory information in this particular, than to the ingenious Dr. Sparmann.

The vaſt ſtrength of this animal would render it one of the moſt formidable of terreſtrial quadrupeds, were its diſpoſitions ferocious ; on the contrary, it is an animal of very tranquil diſpoſitions, unleſs under circumſtances of great irritation, and then its power is really to be dreaded. Its bulk is ſo great that twelve oxen have been found neceſſary to draw one aſhore that was ſhot in a river above the Cape. The largeſt hippopotamus, among about thirty, killed by colonel Gordon, was eleven feet long ; this was a female ; the largeſt male, which always exceeds the other ſex in ſize, was eleven feet eight inches. Dr. Sparmann, however, deſcribes ſome larger ; and Mr. Bruce ſpeaks of others in lake Tzana, that were more than twenty feet long. It is aſſerted by Haſſelquiſt, that the hide alone is a load for a camel.

Theſe animals inhabit the warmer parts of the globe ; and, as in ancient times, are found in the Nile, where it flows through the fens of Upper Egypt, below which it is rarely ſeen. The lateſt inſtance on record of its appearing near the mouth of that river, was in the year 1600, when two were killed near Damietta. It abounds moſt in the rivers among the woods and deſerts of Ethiopia, and in thoſe of Africa, as the Gambia, Senegal, Zaira, reſiding equally in rivers near their fall into the ſea, and in the inland lakes from the very interior of Africa to the Cape of Good Hope. Formerly they abounded in rivers near the Cape, but are now almoſt extirpated ; and it was even found neceſſary under the Dutch government, in order to preſerve the few remaining in the Berg river, to prohibit ſhooting them without expreſs permiſſion.

From the unwieldineſs of the body and the ſhortneſs of the legs, the hippopotamus is not able to move very ſwiftly upon the land, and he then becomes timid. His pace is, however, quicker on the land than generally imagined. When purſued he takes to the water, plunges in, ſinks to the bottom, and is ſeen walking at perfect eaſe, or ſwimming with like facility, the great ſize of his belly rendering his ſpecific gravity equal to that of water. He cannot, however, continue long under water without riſing towards the ſurface to breathe ; and in the day-time he is ſo fearful of being diſcovered, that when he takes in a freſh ſupply of air, the place is hardly perceptible, for he does not venture even to put his noſe out of the water. In rivers unfrequented by mankind he is leſs cautious, and puts his whole head out of the water. If wounded, he will riſe and attack boats or canoes with great fury, and often ſink them by ſtriking, or biting large pieces out of their ſides, and thus people are frequently drowned by theſe animals. It is reported alſo that they will at once bite a man in two. In ſhallow rivers the hippopotamus makes deep holes in the bottom, in order to conceal its great bulk. When he quits the water he uſually puts out half his body at once, and ſmells and looks around, but ſometimes ruſhes out with great impetuoſity, and tramples down every thing in his way. It is hazardous to navigate canoes in rivers much infeſted by theſe animals, as the ſlighteſt movement of their bodies may eaſily overſet them.

The food of the hippopotamus is entirely of the vegetable kind, in queſt of which he quits his watery reſidence, under the favourable darkneſs of the night, and ranges in ſecurity along the banks and adjacent places, deſtroying in his progreſs, by the tramplings of his feet, an infinitely greater portion of herbage than could poſſibly be required to ſatisfy the craving of its appetite. He feeds on the roots of graſs which he readily tears up with his teeth. In cultivated places he commits incredible miſchief, eſpecially among the plantations of ſugar, rice, corn, and other grain, and among young and tender trees, the ſhoots of which he eagerly devours.

The manners of the hippopotami approach nearer to thoſe of the hog than the horſe tribe, with which its name implies an affinity ; for which reaſon Alpin calls them *Cheropotames*, or river-hogs. They commonly ſleep in the reedy iſlands, in the middle of rivers, and if poſſible in ſituations ſurrounded by thick foreſts, and deep impenetrable marſhes ; and in ſuch ſituations they bring forth their young. A herd of females is ſaid to have but one male ; they bring forth one young at a time, and that on the land, but ſuckle the young in the water. The males often conteſt each other's right over the females ; and the attack of two ſuch powerful animals, as may naturally be imagined, is terrible. The earth ſhakes beneath them, the water trembles, their blood flows in torrents, and the maſſes of fleſh torn out by their mighty graſp of teeth lie ſcattered upon the blood-ſtained ſcene of conflict. Sometimes the weakeſt, perceiving his efforts ineffectual, leaves his antagoniſt maſter of the field, but this does not happen often ; for it is ſeldom that one or both of them does not periſh on the ſpot. The female is ſuppoſed to go with young nine months. She is often ſeen in the rivers with the young one on her back, and her manner of ſuckling is not diſſimilar to that of the cow, the teats, which are ſmall, and two in number, being placed far back under the belly ; the milk is thin and more aqueous than that of the cow. The female, at particular ſeaſons, has a ſtrong ſmell of muſk.

The modes of capture adopted in taking theſe animals are various. They are ſometimes ſhot, ſometimes attacked with harpoons, and ſometimes taken in pit-falls prepared for the occaſion in the banks of rivers. In ſome parts the natives place boards full of ſharp irons in the ground, which theſe heavy beaſts ſtriking into their feet become incapable of moving, and thus fall an eaſy prey. Sometimes they are ſtruck in the water with harpoons fixed to cords, and ten or a dozen canoes are employed in the chaſe. This is the common method in which it is taken in Africa. Haſſelquiſt tells us the Egyptians have a curious manner of relieving themſelves in ſome degree from this deſtructive animal. “ They remark the places (he ſays) which he frequents moſt, and there lay a large quantity of peas ; when the beaſt comes aſhore, hungry and voracious, he falls to eating what is neareſt him ; and, filling his belly with the peas, they occaſion an unſupportable thirſt. He then returns immediately into the river, and drinks upon theſe dry peas large draughts of water, which ſuddenly cauſe his death ; for the peas ſoon begin to ſwell with the water, and not long after the Egyptians find him dead on the ſhore, blown up as if killed by the ſtrongeſt poiſon.”

The fleſh of the hippopotamus is eaten in Africa by the poorer orders of people, who, as a matter of emolument, firſt ſeparate it from the fat, a kind of fine lard with which the animal abounds, and which bears a conſiderable price, both on account of its flavour, and becauſe it is ſuppoſed to poſſeſs many admirable virtues. This animal is alſo taken for the ſake of the hide, which on the back is two inches thick or more, and which, when dried, is ſaid to be proof againſt the ſtroke of a muſket-ball. This is converted by the Africans into ſhields or bucklers. The value of the teeth is another inducement for its deſtruction ; theſe, the tuſks in particular, being ſuperior in hardneſs to ivory, at the ſame time they are not ſo ſubject to become yellow, and therefore better for the purpoſe of the dentiſt : ſuperſtition has further ſtamped on them an additional value, the Africans conſidering them as an antidote to poiſon, and uſually wearing ſome trinkets formed of theſe teeth about their perſons. And finally it may be added, upon the credit of Labat, that the blood of this animal is employed by the Indian painters in the preparation of their colours, though in what manner we are not informed.

The mild diſpoſition of theſe animals is confirmed by Belon, who aſſures us that when young they are eaſily tamed. He ſaw one kept in a ſtable, and which ſhewed no inclination to eſcape, or do any kind of miſchief, when, as ſometimes happened, he was releaſed from his confinement. The cry of this animal has been variouſly deſcribed ; Adanſon, an author of veracity, declares it to be ſimilar to that of the horſe, uttered with conſiderable force.

In concluſion, we ſhall notice the intereſting obſervations made on the hippopotamus by Dr. Sparrman, a writer whoſe accuracy is in general indiſputable ; the ſtyle adopted by that author is rather prolix, and it beſides abounds in local incidents not immediately neceſſary to be related, but as theſe cannot eaſily be expunged without detriment to the fidelity, and tendency of the repreſentation he has given, it will be beſt to repeat the obſervations of that traveller in their varied details, in his own words.

“ Towards evening, on the 24th of January 1776, we came to a pit in the river, which our guides knew uſed to be frequented by ſea-cows (meaning the hippopotami.) For this reaſon, all unfrequented ways by which theſe animals might come up from the river were beſet by us ſeparately ; our hunting party conſiſting in the whole of ſeven perſons, namely, five of us Chriſtians, together with my Hottentot, and another belonging to the farmers. Beſides this, the reſt of the Hottentots were ordered to go to the windward, and to the more open places ; and by ſmacking their whips, and making other noiſes, to frighten and drive the animal towards us as ſoon as it ſhould make its appearance ; in conſequence of which meaſures, it appeared to us, that when at length obliged to go on ſhore in queſt of its food, it muſt neceſſarily come to the hiding-place of ſome one of the hunters. Every one of theſe places were juſt at the edge of the river between the reeds which grew on the dry parts of the river, or in thoſe ſpots which the water had left, and at the ſame time cloſe to the very narrow paths which the animal had made for itſelf at each place ; in conſequence of which diſpoſition, it would inevitably paſs not above ſix inches, or a foot at moſt, from the mouth of the ſportſman's piece. Conſequently our whole dependance was upon two circumſtances, *viz.* that our guns ſhould not miſs fire, and that the ſhot ſhould not fail to prove mortal. In the former caſe, the ſportſman muſt have inevitably paid for his temerity with his life ; though in the latter, he had reaſon to hope, from inſtances of what had happened to others, that the fire, together with the report from the piece, as well as the ball itſelf, would confuſe the animal, ſo as to prevent it from immediately making towards its enemy. The banks of the pit, which were then beſet, were in moſt places ſteep and perpendicular, and the pit itſelf almoſt three quarters of a mile long ; but my poſt, and that of my fellow traveller, (Mr. Immelman,) happened to be at the diſtance of not above thirty or forty paces from each other. To theſe very places too, after we had waited at them an hour and a half, in the moſt profound ſilence, the enormous animals did not fail to reſort. They had already, while on the other ſide of the river, got ſcent of the Hottentots, and now ſhewed, by their ſwimming up and down, and blowing themſelves, as well as by a ſhort but acute and piercing grunt or neighing noiſe, that they had a great ſuſpicion of the paſſes: I believe Mr. Immelman was not leſs eager and anxious than myſelf, each of us expecting at every moment to have a bout with a large enormous beaſt, which we knew had given certain proofs of its being able to bite a man aſunder. Yet were we each of us at times no leſs fearful leſt the other ſhould have the honour of killing game of ſuch conſequence. The hippopotamus, however, left us, and had made its appearance in the ſame manner, where the farmers were ſtationed ; notwithſtanding which at that very inſtant we heard it ſhot at by one of the Hottentots.

“ The ſable darkneſs of the night, and the glittering of the Hottentot's piece, together with the loudneſs of the report from it, occaſioned by the weight of the charge, and the vibrations of the echo prolonging the ſound along the neighbouring chain of mountains, all conſpired to compoſe a moſt awful and ſuperb ſpectacle, which was ſtill heightened by the expectation of ſeeing an animal fall, ſuperior in bulk to the elephant. This ſublime ſpectacle was immediately followed by a ridiculous kind of farce performed by a troop of baboons, which, from their calling and anſwering each other along a ſtraight line, we could diſcover to be encamped on a ſteep rocky mountain in the neighbourhood, with regular outpoſts in the trees on each ſide of it. After an interval of a couple of minutes, ſilence again took place, till two o'clock, when the other Hottentot fired his piece; and another alarm, though of ſhorter duration, went through the baboons' outpoſts and head-quarters.

" The next morning, for the arrival of which we ardently longed, in order to ſatisfy our curioſity, our Hottentot ſportſmen related to us the following particulars concerning the adventures of the night. Involved in darkneſs, covered up to the eyes in reeds, and overſhadowed with branches of trees, they could only get a glimpſe of the animal, and conſequently could not anſwer for their ſhots having taken place, and one of them acknowledged, that he was a little confuſed, as he could not well ſee what he was about, and for the ſame reaſon fired his piece too ſoon, before the animal had well riſen out of the water. The other indeed had had an opportunity, both with the ball and ſhot that made up the charge, of wounding the animal which went on its road and paſſed directly by him; but he could not ſee which part of the animal preſented itſelf before the muzzle of his piece. As ſoon as he had fired he ſlunk away, and directly afterwards heard the beaſt take to the water. The reſt of the Hottentots had obſerved one of theſe animals, probably a different one from this, run up on a ſhallow along the river ſide, and thus make its eſcape, without having been able to prevent it. After this we ſtaid here till the afternoon, in hopes that the wounded animals would die, and riſe to the top of the water. But we ſtaid in vain, and to as little purpoſe would it probably have been had we waited longer, as there grew by the ſide of the river a great number of trees, to the roots of which theſe creatures, it is ſaid, in the agonies of death make themſelves faſt by means of their long and crooked tuſks. On the other hand, ſuppoſing thoſe two ſea-cows to be but ſlightly wounded, they would be cautious how they made their appearance, and indeed, in all probability, it would have been a dangerous ſervice to the ſportſman who would have ventured to have followed them any farther. Beſides, the water had now, in the ſpace of a few hours, riſen conſiderably, and had overflowed many ſpots fit for lying in ambuſh; for which reaſon we departed to another hippopotamus pit, leſs than this. Here, too, we laid, by way of ſnare, a large blunderbuſs. The Hottentots occupied one poſt; two of our companions guarded another; other two (an old farmer and his ſon) ſtationed themſelves at the third, and placed me in the middle of them. Juſt in this part the banks of the river were of a conſiderable height, and the river itſelf was dried up near an extenſive ſhallow, where it was ſpread out into a little plain covered with pebble ſtones and gravel. We three then ſet ourſelves down cloſe by the ſide of each other, in a path made by the ſea-cows, making ourſelves pretty certain, as the place was flat, and conſequently it was light here, of being able, if any hippopotamus ſhould chance to come upon the ſhallow and look about it, to ſee it plain enough to kill it with a volley of three ſhots. But to the great endangering of our lives, we on a ſudden found the animal much quicker in its motions as well as bolder than we had thought it; for while I was ſitting half aſleep and moralizing on the ſubject, ſtruck with the conſideration that we with our guns had at that preſent moment the dominion over Job's leviathan or behemoth; while on the other hand the flies or ſmall muſquitoes had the dominion over us, (ſo much indeed, that I was obliged to wrap my face up in a handkerchief,) a ſea-cow came ruſhing towards us out of the river with a hideous cry, as ſwift as an arrow out of a bow, at the ſame time I heard the farmer call out " Heer Jeſus!" But fortunately, at the very inſtant he diſcharged his piece, which flaſhing full in the animal's face, contributed perhaps more than the ball to make it ſtart back; when ſetting up another cry, it threw itſelf into the water again with as great precipitation as it came out.

" At this I was not a little alarmed, yet, what is very ſingular, not at the danger, which was real, of being trampled under foot, or being bitten aſunder by the beaſt, but in conſequence of my apprehenſions, which were merely imaginary, of being drowned; for the rattling noiſe ariſing from the creatures running out of the water, and along the ſtony beach, immediately ſuggeſted to me the idea that the river had on a ſudden overflowed its banks; a ſuppoſition to which I was the more inclined, as I knew that this accident very frequently happens here. And as to the hippopotamus, when it is newly come out of the water, and is wet and ſlimy, it is ſaid to gliſten in the moon-ſhine like a fiſh, it is no wonder that as ſoon as I took my handkerchief from before my eyes, it ſhould appear to me at ſo near a view as I had of it, like a high column of water, which ſeemed to threaten to carry us off and drown us in a moment; for which reaſon I ran, or rather flew towards the higher ground, leaving both my guns and my brother centinels behind me. But as juſt at this ſpot I was prevented by the ſteepneſs of the river's banks from aſcending the heights, and nevertheleſs perceived that neither my companions nor myſelf were drowned, it ran in my head, for the ſpace of ſeveral ſeconds, that we were all of us dreaming, or elſe delirious. The farmer's ſon had fallen aſleep, and ſtill continued to ſleep very ſoundly. As to the farmer himſelf, who, panting and breathleſs, every now and then looked up to heaven, and at the ſame time with much aukwardneſs and buſtle was endeavouring to make his eſcape.. I made all the haſte I could to diſengage him from a large wrapper, which, as well on account of his gout as by way of keeping off the flies, he had wrapped round his legs. I then aſked him what courſe the water had taken when it overflowed? and he, after a long pauſe, anſwered only by aſking me, in his turn, if I was not mad? Upon which I was almoſt ready to put the ſame queſtion to myſelf. And even at laſt, when all this was unriddled to me, I could not help doubting the truth of it, till I found the farmer's gun was really diſcharged; for the rattling among the ſtones, and the ſquaſhing in the water occaſioned by the ſea-cow, was what I firſt heard, and what made me take to my legs; ſo that I did not in the leaſt attend either to the report of the gun or the cry of the animal, though theſe latter appeared to the reſt of our party the moſt terrible; ſo much indeed, that they occaſioned Mr. Immelman, together with the farmer's ſon-in-law, to fly from their poſt, though they had ſeen nothing of all that had happened, and could not eaſily have come to any harm."

" On the twenty-fifth, from ſome traces of the ſea-cows which we found in the duſt near another ſpot, we concluded that many of theſe huge amphibious animals had lately taken up their quarters in a certain pit thereabouts; which we accordingly prepared to lay ſiege to in every poſſible way. In the mean time, we ſaw a young lion make its eſcape into a cloſe thicket on the ſide of this ſame pit, where it might be perfectly ſafe from us and our hounds. Not much approving of this animal's being ſo near a neighbour to us, we thought it beſt for ſeveral of us markſmen to be together at each hiding place; at the ſame time ordering our Hottentots, partly by making a noiſe and uproar, and partly by the means of making large fires, to frighten the ſea-cows from attempting any of the other paſſes. Theſe animals had probably been beſet in the ſame manner ſeveral times before, as this night we ſcarcely heard any thing of them. In the mean while, however, we flattered ourſelves, that by continuing to block them up, we ſhould, at leaſt, by ſtarving them, force them to quit their aſylum, and expoſe themſelves on the land, to the fire of our guns.

"On the following day we were likewiſe on the look out after theſe animals, between the hours of ten and eleven in the forenoon, and alſo juſt before duſk, though upon quite a different plan from what we had before, as we meant now to hit them on their ſnouts the inſtant they ſhould ſtick them up within the reach of our guns out of the water in order to take breath, or more properly (as it is not inaptly called by the coloniſts,) to blow themſelves. In order that the ſhot might prove mortal, we were obliged, however, on this occaſion, to direct it in ſuch a manner, that the ball ſhould paſs through the cavity of the noſe into the brain. It was merely upon this plan that we went out after the ſea-cows before we arrived at Agter Bruntjeſhoogte, and were ſtrengthened by the farmer's party. But we conſtantly found theſe animals too ſhy to allow us to put our deſigns in execution; for although, in thoſe places where they had not been frightened or wounded, they will often, in the middle of the day, raiſe their heads and part of their bodies above the ſurface of the water, they at this time ſcarcely ventured juſt to put out one of their noſtrils, in order to breath almoſt imperceptibly; and this only for the moſt part in thoſe ſpots in which they were ſheltered from us by the hanging branches of trees. Notwithſtanding this diſadvantageous ſituation, they, in conſequence of the acuteneſs of their ſmell, ſeemed ſtill to diſcern us, eſpecially when we were to the windward of them; as in that caſe they inſtantly withdrew to another part." "The ſame night we betook ourſelves again to our poſts, and at half an hour paſt eight, it being already very dark, a ſea-cow began at intervals to put its head up above the water, and utter a ſharp, piercing, and as it were, a very angry cry, which ſeemed to be between grunting and neighing. Perhaps this cry may be beſt expreſſed by the words *heurkh hurkh huh-huh*; the two firſt being uttered ſlowly, in a hoarſe, but ſharp and tremulous ſound, reſembling the grunting of other animals; while the third, or compound word, is ſounded extremely quick, and is not unlike the neighing of a horſe. It is true, it is impoſſible to expreſs theſe inarticulate ſounds in writing; but perhaps one may make nearer approaches to it than one can to the gutturo-palatal ſounds of the Hottentot language. At eleven o'clock came the ſame, or elſe ſome other hippopotamus, and, in like manner, viſited the poſts we occupied. He did not, however, dare to come up, though, to our extreme mortification, we heard him come and nibble the boughs which hung over the ſurface of the water, as well as a little graſs, and a few low ſhrubs which grew here and there on the inſide of the river's banks. We were, however, in hopes that this way of living would not long ſuffice animals, one of which only required almoſt a larger portion than a whole team of oxen. Thus far, at leaſt, is certain, that if any one ſhould calculate the conſumption of proviſions made by a ſea-cow from the ſize of its fauces, and from that of its body and his belly, which hangs almoſt down to the ground, together with the quantity of graſs."

"We paſſed the following night at the ſame poſts as we occupied on the night preceding, the ſea-cows acting much in the ſame manner as before. On the 28th after ſun riſe, juſt as we were thinking of going from our poſts home to our waggons, there came a female hippopotamus with her calf from ſome other pit or river, to take up her quarters in that which we were blockading. While ſhe was waiting at a rather ſteep part of the river's banks, and looking back after her calf, which was lame, and conſequently came on but ſlowly, ſhe received a ſhot in her ſide, upon which ſhe directly plunged into the water, but was not mortally wounded; for Flip, (the farmer's ſon,) the drowſieſt of all ſublunary beings, who had ſhot her, and that inſtant could hardly be awakened by two Hottentots, was ſtill half aſleep when he fired his piece. And happy was it for him that the enormous beaſt did not make towards his hiding, or rather ſleeping place, and ſend him into the other world to ſleep for ever. In the mean while his ſhot was ſo far of ſervice, that one of my Hottentots ventured to ſeize the calf, and held it faſt by its hind legs, till the reſt of the hunting party came to his aſſiſtance. Upon which the calf was bound faſt, and with the greateſt joy borne in triumph to our waggons; though while they were taking it over a ſhallow near the river, the Hottentots were very much alarmed, leſt the wounded mother and the other ſea-cows ſhould be induced, by the cries of the calf, to come to its reſcue; the creature, as long as it was bound, making a noiſe a good deal like a hog that is going to be killed, or has got faſt between two poſts. The ſound, however, proceeding from the hippopotamus calf was more ſhrill and harſh. It ſhewed likewiſe a conſiderable ſhare of ſtrength in the attempt it made to get looſe, and was found to be quite unmanageable and unwieldy; the length of it being three feet and a half, and the height two feet; though the Hottentots ſuppoſed it to be no more than a fortnight, or at moſt, three weeks old. When at laſt it was turned looſe, it ceaſed crying; and when the Hottentots had paſſed their hands ſeveral times over its noſe, in order to accuſtom it to their effluvia, began directly to take to them." "While the calf was yet alive, I made a drawing of it, a copy of which may be ſeen in the Swediſh Tranſactions for 1778. After this, it was killed, diſſected, and eaten up in leſs than three hours time. The reaſon of this quick diſpatch was partly the warmth of the weather, and partly our being in abſolute want of any other freſh proviſions. We found the fleſh and fat of this calf as flabby as one might have expected from its want of age, and conſequently not near ſo good as that of the old ſea-cows; of which I found the fleſh tender, and the fat of a taſte like marrow, or at leaſt not ſo greaſy and ſtrong as other fat. It is for this reaſon the coloniſts look upon the fleſh and fat of the ſea-cow as the wholeſomeſt meat that can be eaten; the gelatinous part of the feet in particular, when properly dreſſed, being accounted a great delicacy. The dried tongues of theſe animals is conſidered, even at the Cape, as a rare and ſavoury diſh. On my return to Sweden, I had the honour to furniſh his majeſty's table with a dried ſea-cow's tongue, two feet eight inches long. With reſpect to form, the tongue of a full grown hippopotamus is very blunt at the tip, and is in fact broadeſt at that part; if, at the ſame time, it is ſlanted off at one ſide, and marked with many lobes, as I was informed it is, this circumſtance may, perhaps, proceed from the friction it ſuffers againſt the teeth, towards the ſide on which the animal chiefly chews; at leaſt, ſome traces of this oblique form were diſcoverable on the dried tongue I am ſpeaking of."

The food of the hippopotamus, according to Dr. Sparrman, conſiſts entirely of herbs and graſs, a circumſtance, he remarks, of which we are informed by father Lobo, and which may partly be inferred from the figure of the ſtomach. Hence this writer thinks it very improbable the hippopotamus ſhould ever hunt after fiſh, as is aſſerted by Buffon and Dampier; and this the more eſpecially, as in ſome of the rivers in the ſouthern parts of Africa, where the ſea-cows are daily ſeen in great abundance, there is no fiſh; and in others which they inhabit, only a few "baſtard ſpringers" (cyprinus gonorynchus), which are ſcarcely larger than the common herring. "It is true, (ſays Dr. Sparrman,) that the ſea-cows ſometimes frequent the mouths of the rivers here, which are full of ſea-fiſh, and even ſometimes the ſea itſelf: we know, however, that theſe huge quadrupeds are, notwithſtanding this, obliged to go from thence upon dry land in queſt of food. Neither is it probable that they can drink ſea-water, as an inſtance was related to me of the contrary in a hippopotamus, which having taken refuge in the ſea, and yet was obliged to go aſhore every night, and drink freſh water from a well in the neighbourhood, till at laſt it was ſhot by ſome people that lay in wait for it there. That the hippopotamuſes actually lived in ſalt water, I have ſeen evident proofs at the mouths both of the Kromme and Camtour rivers, particularly the latter, on my journey homewards; where many of theſe animals blowed themſelves in broad day-light, and thruſt their heads up above the water; and one of them in particular, which had been wounded by an ill-directed ſhot on the noſe, neighed from anger and reſentment. In Krakekamma, I ſaw on the beach manifeſt traces of an hippopotamus, which had come out of the ſea, but had retired thither again directly. That very attentive navigator Capt. Burtz informed me, that he had frequently ſeen, on the eaſtern coaſt of Africa, ſea-horſes (meaning probably the hippopotamus) raiſe their heads above the ſurface of the water, in order to blow themſelves and neigh. I have been induced to be rather circumſtantial on this ſubject, as M. Adanſon had taken it into his head, in his "Voyage au Senegal," to limit the abode of the hippopotamus to the freſh-water rivers only in Africa; and M. de Buffon has taken upon him to ſupport this opinion, and to render Kolbe's teſtimony to the contrary liable to ſuſpicion.

"The method of catching the hippopotamus conſiſts (beſides ſhooting it) in making pits for it in thoſe parts which the animal paſſes in its way to and from the river; but this method is peculiar to the Hottentots, and is only practiſed by them in the rainy ſeaſon, as the ground in ſummer is too hard for that purpoſe. It is ſaid that they have never ſucceeded in killing this huge aquatic animal with poiſoned darts, though this mode of killing game is practiſed with advantage by the Hottentots, for the deſtruction both of the elephant and rhinoceros. The coloniſts, likewiſe, were not entirely unacquainted with the method mentioned by M. Haſſelquiſt, as being common in Egypt, *viz.* to ſtrew on the ground as many peas or beans as the animals can poſſibly eat, by which means it burſts its belly and dies. But as this method is very expenſive, and they can generally have this animal for a ſingle charge of powder, and a tin ball, ſhot in a proper direction, they chiefly, and almoſt entirely have recourſe to this cheaper expedient."

Not on his own authority, but on the aſſurance of old experienced hunters, Dr. Sparrman tells us the hippopotamuſes couple in the ſame manner as the common cattle. A brother ſportſman, ſaid he, once obſerved a peculiar kind of vermin on the body of an hippopotamus. Theſe amphibious animals are likewiſe much infeſted with inteſtinal worms, one of which, found on the calf before-mentioned by Dr. Sparrman, he deſcribes as being a kind of leech of about an inch long, the colour blackiſh, with a browniſh line down the back, and the lower ſurface pale brown. With regard to its food, this writer imagines the adult animal may be not very choice, as the calf, apparently preſſed by hunger, was obſerved to eat the dung of one of the oxen belonging to their party.

"Having already (ſays Dr. Sparrman) exceeded the limits I had preſcribed to myſelf, I do not intend to dwell here on the anatomy of the hippopotamus we caught, particularly as the internal conformation of the calves is ſomewhat different from that of the adult animal. I ſhall, therefore, only briefly mention the following particulars: the ſtomachs were four in number, and conſequently one more than in the fœtus examined by M. Daubenton, which was kept in ſpirits. The two firſt ſtomachs were each of them about ſeven inches long, and three inches in diameter; the third nine inches in length, and a little wider than the two former; the fourth was ſeven inches long, and at the upper part five inches broad, but decreaſed by degrees on one ſide till it terminated in the *pylorus*, which had an aperture an inch wide, being about half as wide again as the *cardia*. I did not obſerve any ſuch valves as M. Daubenton has delineated. The firſt ſtomach we found moſtly empty, it containing only a few lumps of cheeſe and curd: it likewiſe differed from the reſt by the ſuperior fineneſs of its internal coat. The internal membrane of the ſecond ſtomach was rather coarſer, and had many ſmall holes in it; it likewiſe contained ſeveral clods of caſeous matter, together with a great quantity of ſand and mud. The third ſtomach had very viſible folds, both longitudinal and tranſverſe, on the inſide of it, and contained caſeous lumps of a yellow colour, and harder conſiſtence than the others, together with ſeveral leaves quite whole and freſh, and at the ſame time ſome dirt. The interior membrane of the fourth ſtomach was very ſmooth, though it was not without folds: in the ſtomach itſelf there was a good deal of dirt, with a ſmall quantity of curds, which were whiter than they were in any of the other ſtomachs. The fourth ſtomach in a great meaſure covered the reſt, being ſituated on the right ſide of the animal, and was found to have the upper part of the melt adhering to its ſuperior and interior edge. This latter viſcus, which was one foot long and three inches broad, diverged from it downwards on the left ſide. The inteſtinal canal was 109 feet long; the liver meaſured fourteen inches from right to left, and ſeven or eight from the hind to the fore-part; on its anterior edges it had a large notch, being in other reſpects undivided and entire; it was of an oblique form, being broadeſt towards the left ſide, where I diſcovered a gall-bladder five inches in length. In the uterus there was nothing particular worthy of obſervation. I found two teats, and the heart ſurrounded with much fat; the length of this muſcle was five inches, and the breadth about four inches and a half. The communication between the auricles, called the *foramen ovale*, was above an inch in diameter. Each lung was eleven inches long and undivided: but at the ſuperior and exterior part of the right lung, there were two globules or proceſſes, elevated half an inch above the ſurface; and on the ſide correſponding to it, in the left lung, and in the upper part of it, there was a little excreſcence terminating in a point; ſomewhat below this, yet more forwards, there was found likewiſe a proceſs half an inch in height. Directly over the lower part of the communication formed between the right and the left lung, there was a kind of creſt or comb, meaſuring an inch from the top to the baſis."

HIPPOPOTAMUS *Foſſil.* Zoologiſts are acquainted with one living ſpecies of hippopotamus only; but late obſervations have proved that the bowels of the earth contain the foſſil remains of *two* perfectly diſtinct ſpecies, one of which appears not to differ in any reſpect from the one ſtill exiſting; the other, being, as it were, a miniature copy of the larger, is nearly of the ſize of the wild boar. The diſcovery of this latter we owe to the indefatigable Cuvier, who has likewiſe proved the exiſtence of the other ſpecies in a foſſil ſtate. Several authors, prior to that celebrated naturaliſt, have mentioned foſſil bones of the great African hippopotamus, but ſubſequent obſervations have proved that they had been rather too raſh in forming their diagnoſis. Some of the teeth deſcribed by Daubenton as the *molares* of the hippopotamus, are proved by Cuvier to be thoſe of the maſtodonte, or the great American animal improperly called mammouth. Peter Camper, who has given an account of foſſil teeth of the hippopotamus, appears to have fallen into the ſame error as Daubenton. Merk likewiſe deſcribes a tooth of a hippopotamus found in the neighbourhood of Frankfort on the Mayn, which turns out to be a worn out intermediate tooth belonging to the ſame American animal. The tooth of a hippopotamus, mentioned by Delue as having been found among the volcanic productions in the vicinity of Frankfort, is, according to Merk, nothing but the tooth of a rhinoceros. The teeth which Lang has figured under the ſame name are probably thoſe of a horſe, partly undeveloped, partly worn off. Alſo, Romé de l'Iſle, de Lametherie, and Faujas St. Fond were led into error with regard to the teeth they deſcribed as belonging to the river horſe. Some writers, on the other hand, have been in the poſſeſſion of real foſſil remains of the hippopotamus without being aware of it. Thus Aldrovandus has figured ſeveral *molares* of this animal under the name of elephant's teeth, while the real elephant's tooth, of which he has likewiſe given a repreſentation, was conſidered by him as belonging to ſome large unknown animal. The only authors who have been more correct, both in the application of the name of hippopotamus, and in their obſervations reſpecting the foſſil remains of the animal in queſtion, are Antoine de Juſſieu and Daubenton: the foſſil bones deſcribed by the former as early as 1724, cannot be doubted to be really thoſe of the river horſe; and thoſe indicated by Daubenton under the ſame name, and depoſited (promiſcuouſly with others, which, as above-mentioned, belong to the maſtodonte) in the muſeum at Paris, were the firſt that ſerved to convince Cuvier of the exiſtence of foſſil remains of

1. *The great or common Hippopotamus.*—One of the laſt-mentioned ſpecimens of oſſeous remains conſiſts in a portion of the right ſide of the lower jaw containing two molar teeth; the other in a ſingle molar tooth. The place where they were found is not known with certainty. A third ſpecimen, examined by Cuvier, is a fragment of the upper jaw, with two molar teeth, in the collection of M. de Drée; it is penetrated by a ferruginous ſubſtance, but does not bear any indication of its origin; it is not, however, improbable that it was found in the neighbourhood of Montpellier.

More ſatisfactory than the preceding ſpecimens, with regard to its locality, was one in the collection of M. Miot. This bone, which was known to have been gathered in the Val d'Arno, in Tuſcany, is an aſtragalus, reſembling that of a hog, to which animal the hippopotamus approaches more than to any other, with regard to the conformation of all its parts. The place where bones of the hippopotamus are actually found being thus aſcertained, Cuvier applied to Fabbroni at Florence, who ſent him drawings of two molar teeth, and one repreſenting a fragment of a tuſk or canine tooth, which Cuvier ſoon aſcertained to belong to the animal in queſtion. Reſpecting the canine tooth, it is obſerved by Fabbroni, that it differs from that of the African hippopotamus in its diameter being greater compared with its length, and alſo in its ſpiral curvature being much more diſtinct. He adds, that theſe teeth are ſcattered in various parts of the upper valley of Arno, but unaccompanied either by jaws or other bones.

Cuvier thinks there is no material difference either between theſe foſſil teeth or the aſtragulus he has examined, and thoſe of the living ſpecies; and, indeed, it is remarkable, that the animal, whoſe exiſtence in a foſſil ſtate had at firſt appeared doubtful to geologiſts, ſhould be one whoſe foſſil remains far more ſtrikingly reſemble the bones of the ſtill exiſting ſpecies, than is the caſe with any other foſſil remains which naturaliſts have referred to living animals, ſuch as the elephant, the rhinoceros, &c.

2. *The ſmall foſſil Hippopotamus.*—The maſs out of which Cuvier extracted the remains of this ſpecies, (but the geological relation of which is unfortunately unknown,) reſembles the oſſeous breccia of Gibraltar, Dalmatia, and Cette, except that the matrix, inſtead of being calcareous and ſtalactitical, is a homogeneous ſand-ſtone, which uniformly fills up all the intervals between the bones; the bones alſo form a far more conſiderable portion of the maſs than is the caſe in the Gibraltar rock. After having performed the difficult operation of diſengaging all the ſeparate oſſeous fragments, M. Cuvier found that they belonged to an animal, of which no traces had hitherto been diſcovered, but which was unqueſtionably a congener of the common hippopotamus. The teeth were found to agree in all eſſential points with thoſe of the other ſpecies; and the remainder of the oſſeous fragments which were next examined, confirmed, without a ſingle exception, what had been indicated by the characters of the teeth.

For a detailed deſcription, together with the repreſentation of the foſſil bones of both theſe ſpecies of hippopotamus, we refer to Cuvier's Memoir, in vol. v. of the Annales du Muſeum National d'Hiſtoire Naturelle.

HIPPOSIS, in the *Writings of the Ancient Phyſicians*, ſignifies a reducing any part of the body into its natural ſituation, by means of compreſſion.

HIPPOTAURUS, in *Natural Hiſtory*, the name given by authors to a creature generated between a bull and a mare. It ſeems a very unnatural copulation; but Wagner, in his Hiſtory of Switzerland, aſſures us, that the creature produced by it is ſometimes found wild in the mountainous parts of that country.

HIPPURIS, in *Botany*, is a name adopted by Linnæus from the ancients, in preference to ſome that had been given to this ſame genus by Vaillant and Dillenius. The original ιππουρις of Dioſcorides is evidently, from his deſcription of both ſpecies, an *Equiſetum*, (ſee that article.) The preſent plant has great affinity to that genus in habit and place of growth, though differing materially in its generic characters. Its name is compounded of ιππος, *a horſe*, and ουρα, *a tail.* Mr. Curtis has remarked that "*Hippuris* of Linnæus is Πολυγονον θηλυ, *Polygonum fœmina*, of Dioſeorides, arranged by his commentator Matthiolus with our *Polygonum aviculare*, and *Herniaria*. Succeeding botaniſts, imagining, from the growth of its leaves, or from its producing ſeed, that it had better pretenſions to be ranked with the *Equiſetum*, abſurdly enough called it *Cauda equina fœmina*, to which Mr. Hudſon could not well avoid giving the Engliſh name of Mare's-tail." This genus was denominated *Limnopeuce* by Vaillant and Haller, and *Pinaſtella* by Dillenius.—Linn. Gen. 5.

Schreb. 8. Willd. Sp. Pl. v. 1. 26. Mart. Mill. Dict. v. 2. Sm. Fl. Brit. 4. Ait. Hort. Kew. ed. 2. v. 1. 12. Juſſ. 18. Lamarck Illuſtr. t. 5. Gærtn. t. 84.—Claſs and order, *Monandria Monogynia.* Nat. Ord. *Inundatæ*, Linn. *Naiades*, Juſſ.

Gen. Ch. *Cal.* Perianth ſuperior, obſolete, undivided, or ſlightly two-lobed. *Cor.* none. *Stam.* Filament one, erect, inſerted on the top of the germen; anther roundiſh, two-lobed, compreſſed. *Piſt.* Germen oblong; ſtyle awl-ſhaped, erect, longer than the ſtamen; ſtigma ſimple, acute. *Peric.* none. *Seed* only one, roundiſh, naked, rather bony, covered with a thin ſort of membrane.

Eſſ. Ch. Calyx obſolete, undivided. Corolla none. Stigma ſimple. Seed one, inferior.

1. H. *vulgaris*, Mare's-tail.—Linn. Sp. Pl. 6. Engl. Bot. t. 763. Curt. Lond. Faſc. 4. t. 1.—“ Leaves whorled, numerous, linear.”—A common inhabitant of ditches, pools, and ſtreams which are not very rapid, in Norfolk and the neighbourhood of London, flowering abundantly in May and June. In other parts of England it is of rarer occurrence, ſeeming to delight in a gravelly ſoil.—*Root* conſiſting of long verticillate fibres. *Stem* entirely ſimple, round, of a reddiſh tinge, and cloſely ſet with whorls of linear, entire, ſmooth leaves, about eight or more in a whorl. *Flowers* axillary, ſeſſile, and of very ſimple ſtructure, for “ they conſiſt of only an oval germen, crowned with an almoſt imperceptible margin or calyx, without a corolla, and terminating in a ſimple, thread-ſhaped, pointed ſtyle, by whoſe ſide ſtands one ſimple ſtamen with a two-lobed anther. The germen becomes a ſingle naked ſeed.”

2. H. *tetraphylla.* Linn. Suppl. 81. (H. lanceolata; Retz. Obſ. faſc. 3. 7. t. 1. H. maritima; Hellen. Diſſ. t. 1. Retz. Prod. 2.)—Leaves four or five in a whorl, elliptical, obtuſe. This was ſent to Linnæus by profeſſor Leche of Abo, in Finland, in which neighbourhood it is ſaid to have been firſt diſcovered by a Mr. Schulſen. It is remarkable that Pallas ſent it from Kamtſchatka as a new *Elatine*, enquiring of Linnæus if it were diſtinct from the *Alſinaſtrum*, though his ſpecimens moſt evidently diſplay the flowers of an *Hippuris*, with their ſtamen and ſtyle in full perfection. This has the habit of the ſpecies juſt deſcribed, differing only in the fewneſs of leaves in each whorl, and their broad, elliptical ſhape. Whether it has in winter any difference of appearance in foliage, like the former, whoſe immerſed leaves at that ſeaſon are peculiarly elongated and pellucid, we have no information. Retzius, in his faſciculus above quoted, contends that this genus is gynandrous.

Hippuris, in *Ancient Geography*, an iſland of the Archipelago, being one of the Cyclades.

HIPPURISCUS, an iſland of Aſia, on the coaſt of Caria.

HIPPURITES, in *Natural Hiſtory*, a name given by ſome writers to a ſtone which they fancy to repreſent a ſaddle. It is deſcribed to be a ſoft argillaceous ſtone, owing its figure of a ſaddle to certain depreſſions. This is only a luſus naturæ, and is of the nature of the hand-ſtones, and foot-ſtones, with ſeveral others, which fancy has aſſiſted in their reſemblances, but which have been very improperly called by particular names.

Hippurites is alſo a name which Dr. Grew applies to a foſſil plant of a ſtony texture, conſiſting of three ſtalks elegantly figured, to reſemble the equiſetum or horſe-tail plant. Rarities, p. 268.

HIPPURUS, in *Ichthyology*, a ſpecies of Coryphæna, which ſee.

HIPPUS, in *Medicine*, a diſorder of the eyes, wherein they continually ſhake and tremble, and thus repreſented objects as if continually fluctuating.

It is thus called from the Greek ἵππος, *horſe*; becauſe, according to Blanchard, objects appear to ſhift in it, as much as when we are riding.

HIR, in *Geography*, a town of Perſia, in the province of Kerman; 18 miles S. of Sirgian.

HIRA, a word uſed by the writers in medicine either for the inteſtinum jejunum, or for all the inteſtines, or in a yet larger ſenſe for all the contents of the abdomen. Caſtel. Lex. in voc.

Hira, or *Alexandria*, *Meſjid-ali* or *Meham-ali*, in *Ancient Geography*, a town of Aſia, near a lake, at ſome diſtance from the right bank of the Euphrates: the reſidence of a dynaſty of princes, who ſerved the Perſians and Parthians againſt the Romans.

HIRABAD, in *Geography*, a town of Perſia, in the province of Irak. N. lat. 32° 16'. E. long. 55° 50'.

HIRÆA, in *Botany*, ſo called by Jacquin after John Nicholas de la Hire, a French phyſiological writer in the Memoires de l'Acad. des Sciences, whoſe remarks are ſometimes cited by Du Hamel and others; and who diſcovered an exudation reſembling manna on the leaves of orange-trees.—Jacq. Amer. 137. Linn. Syſt. Veg. ed. 14. 427. Schreb. 307, 804. Willd. Sp. Pl. v. 2. 743. Mart. Mill. Dict. v. 2. (Flabellaria; Cavan. Diſſ. 436. Triopteris Hiræa; Gærtn. t. 116.)—Claſs and order, *Decandria Trigynia.* Nat. Ord. *Trihilatæ*, Linn. *Malpighiæ*, Juſſ.

Gen. Ch. *Cal.* Perianth inferior, of one leaf, ſmall, erect, in five deep ſegments, permanent, without any nectariferous external glands. *Cor.* Petals five, roundiſh, concave, widely ſpreading, with long linear claws. *Stam.* Filaments ten, awl-ſhaped, erect, ſlightly connected at the baſe, five of them alternately ſhorter; anthers erect. *Piſt.* Germens three, ſuperior, ovate, connected; ſtyles awl-ſhaped, erect; ſtigmas capitate or cloven. *Peric.* Capſules three, roundiſh, not burſting, with two very large, tranſverſe, rounded wings, ſometimes united, and a ſmaller longitudinal central one. *Seeds* ſolitary, ovate.

Eſſ. Ch. Calyx in five deep ſegments, without any honey-pores. Petals roundiſh, with claws. Filaments connected at the baſe. Capſules three, cloſed, ſingle-ſeeded, with two or three unequal wings.

Obſ. This genus has been confounded with *Triopteris*, and it is doubtful whether they ought not to be united, according to the ſentiments of Gærtner and Juſſieu. The chief difference lies in the two nectariferous glands or pores, ſaid to diſtinguiſh the calyx of *Triopteris*, and its narrower, more vertical, and more divided wings.

1. H. *reclinata.* Jacq. Amer. 137. t. 176. f. 42. Gærtn. t. 116. Linn. Mant. 240.—Leaves obovate, blunt at each end, ſmooth beneath.—Gathered by Jacquin in woods at Carthagena in South America, flowering in June, and ripening ſeed in September. It is a weak and trailing *ſhrub*, ſeldom riſing to the height of more than fifteen feet, and reſting its long, pliant, ſmooth branches upon the neighbouring buſhes. The *bark* is grey. *Leaves* oppoſite, oblong, ſomewhat obovate, blunt at each end, entire; ſmooth beneath; clothed with ſoft, depreſſed, ſcarcely viſible hairs above. Their length is from three to ſix inches. *Footſtalks* ſhort, with a pair of briſtle-ſhaped *ſtipulas* at the baſe. *Flowers* yellow, beautiful, an inch broad, in very long, compound, terminal cluſters.

2. H. *odorata.* Willd. n. 2.—“ Leaves ovate, acute; ſmooth above; downy beneath.”—Found by Iſert in Guinea.—A *ſhrub.* *Leaves* oppoſite, ovate, acute, entire, veiny;

dark green and ſmooth above; clothed with yellowiſh ſhaggy cloſe down beneath. *Cluſters* copious at the ends of the branches, axillary, forming a terminal leafy panicle, with downy ſtalks. The *flowers* are ſaid to be fragrant. *Fruit* exactly like the following. *Willdenow*.

3. H. *pinnata*. Willd. n. 3. (Flabellaria paniculata; Cavan. Diſſ. 436. t. 264.)—"Leaves pinnate with an odd one, ovate-oblong, alternate, ſmooth on both ſides."—Gathered by Smeathman at Sierra Leone. About this plant there is much obſcurity. Nothing brought by Smeathman anſwers to it, but ſome ſpecimens of his well agree with the preceding deſcription, except that the backs of the *leaves* are rather ſilvery than yellowiſh. Cavanilles may very reaſonably be ſuſpected of a miſtake with regard to the leaves, no plant of this natural order being known to have either compound or alternate foliage. We are therefore ſtrongly perſuaded that this ſuppoſed ſpecies is no other than the former.

HIRAM, in *Geography*, a poſt-town of America, in York county, Maine, containing 184 inhabitants.

HIRARA, in *Zoology*, the name of an animal of the Braſils, much reſembling the *hyæna*.

HIRCANIA. See HYRCANIA.

HIRCUS, TRAGUS, or *Goat*, in *Anatomy*, a part of the auricle, or outer ear; being that eminence next the temples.

HIRCUS, in *Aſtronomy*, a fixed ſtar of the firſt magnitude, the ſame with Capella.

HIRCUS is alſo a denomination given to the rank ſmell exhaling from the arm-pits; and which has its ſource in the axillary glands.

HIRCUS is alſo uſed by ſome writers for a comet, encompaſſed as it were with a mane, ſeemingly rough and hairy.

HIRE, PHILIP DE LA, in *Biography*, an eminent mathematician and aſtronomer, was born at Paris in the year 1640. His father took great care in having him inſtructed in thoſe branches of mathematics which ſhould lay a foundation for the ſtudy of the fine arts. After the death of his father, which took place when the ſon was only ſeventeen years of age, he paſſed ſome years in Italy, ſpending his time chiefly in the ſtudy of the mathematics, to which he devoted himſelf with the greateſt ardour. On his return to Paris he made himſelf known to the public by the ſecond part of a treatiſe on ſtone-cutting, printed in 1672, in continuation of Gerard d'Argues on the ſame ſubject. The reputation which he acquired by this performance, he encreaſed by his "Nouvelle Methode en Geometrie pour les Sections des Superficies coniques et cylindriques," and his treatiſe "De Cycloide." In the year 1678 he was elected member of the Academy of Sciences, and in the following year he publiſhed "Les nouveaux Elemens des Sections Coniques:" "Les lieux Geometriques:" "La Conſtruction ou Effection des Equations." In the ſame year, under the auſpices of Colbert, he commenced an undertaking, conjointly with M. Picard, in order to collect materials for a more correct general chart of the ſea-coaſt of France than had been before laid down: and viſited the province of Bretagne, where the two mathematicians made the ſurveys and obſervations requiſite for their deſign. In 1680 they proceeded to the coaſts of Guienne and Gaſcogny, and in 1681 M. de la Hire was directed to proceed alone to Calais and Dunkirk, in order to determine the exact poſitions of thoſe places. On this occaſion he took the opportunity of meaſuring the exact breadth of the ſtraits of Dover, which he found to be 21,360 toiſes. In 1682 he finiſhed his ſhare of the undertaking, and on his return to Paris he publiſhed his treatiſe "De Gnomonique," which he reprinted in 1698, in an enlarged form. From this time he frequently appeared before the public in the character of an author. And the diverſity of his productions, and his continual employments, give us ſome idea of the great labour which he muſt have undergone. His days, ſays his biographer, were almoſt uniformly ſpent in cloſe ſtudy, or in diſcharging profeſſional engagements, and a conſiderable part of his nights was frequently devoted to aſtronomical obſervations. Seldom did he enjoy any other relief from his labours than what aroſe from the exchange of one employment for another; nevertheleſs his health was generally good, till within a month of his death, which took place in 1718, after he had completed his 78th year. He was regarded as an honeſt and diſintereſted man, and as a good Chriſtian. Moreri. Hutton.

HIRLAW, or HARLEV, in *Geography*, a town of Moldavia, on the Bechlui; 30 miles N.W. of Jaſſy. N. lat. 47° 24′. E. long. 27° 6′.

HIRMUND. See HEERMUND.

HIRPI, in *Ancient Geography*, a name diſtinguiſhing a number of families of Italy, at a ſmall diſtance from Rome, in the territory of the Faliſci, who every year marched over burning wood to mount Soracte, in order to offer a ſacrifice in honour of Apollo. It is ſaid that, on this account, they were exempt from going to war, and from all other charges. They are deſcribed in Virgil's Æneid. l. ii. v. 785:

> "Summe Deûm, ſancti cuſtos Soractis Apollo
> Quem primi colimus, cui pineus ardor acervo
> Poſcitur, et Medium freti pietate per ignem
> Cultores multa premimus veſtigia pruna."

Varro ſays, in ſpeaking of this practice of the Hirpi, that they applied ſome preparations to their feet in order to prevent their being burnt.

HIRPINI, a people of Italy, who formed a part of the Samnites; and as the term Hirpus ſignified in the Samnite dialect a wolf, they are ſaid to have migrated to their new habitations by tracing the ſteps of theſe animals. It was towards the end of the ſecond Punic war, that the Hirpini began to be diſtinguiſhed from the other Samnites. Their territory comprehended the towns of Beneventum, Candium, Abellinum, and Campſa.

HIRRIA, in *Geography*, a town of Hindooſtan, in Rohilcund; 28 miles S. of Pillibeat.

HIRSCHBERG, a town of Bohemia, in the circle of Boleſlau; 12 miles N. W. of Jung-Buntzel.—Alſo, a town of Sileſia, in the principality of Jauer, and next to Breſlau, the town of the moſt conſiderable trade in Sileſia, having many manufactures both in the town and neighbouring villages. The churches in the town belong to the Roman Catholics, but the Lutherans have purchaſed the privilege of erecting a church and ſchool without the walls. It has been once and again burned and pillaged; 20 miles S. W. of Jauer. N. lat. 50° 44′. E. long. 15° 48′.—Alſo, a town of Saxony, in the Vogtland; 14 miles S.W. of Plauen. N. lat. 50° 20′. E. long. 11° 58′.—Alſo, a town of Bavaria, in the principality of Aichſtadt, 22 miles N. E. of Aichſtadt.

HIRSCHFELD, a town of Saxony, in the circle of Erzgeburg; ſeven miles S. of Zwickau.—Alſo, a town of Luſatia, on the Neiſſe; 40 miles E. of Dreſden. N. lat. 50° 56′. E. long. 14° 59′.

HIRSCHOLM, a town of Denmark, with a caſtle, in the iſland of Zealand, where Chriſtian VI. died in 1746; 12 miles N. of Copenhagen.

HIRSEL, in *Rural Economy*, a term employed among the northern ſtock-maſters, to denote the diviſion of ſheep into particular kinds.

HIRSON, in *Geography*, a town of France, in the department of the Aiſne, and chief place of a canton, in the diſtrict of Vervins; four miles N. E. of Vervins. The place contains 2150, and the canton 11,127 inhabitants, on a territory of 185 kiliometres, in 13 communes.

HIRST, in *Mining*, Ridge or Sow's-back, is applied by the colliers of Scotland, (ſee Willein's Min. Kin. 2d edit. i. 90.) to the tops or higher parts of undulating ſtrata, or thoſe which lay in HILL *and Trough*, ſee that article.

HIRTELLA, in *Botany*, ſo named by Linnæus, as he himſelf informs us, in the *Hortus Cliffortianus*, p. 17, from *hirtus*, hairy, becauſe of the hairineſs of its young branches.—Linn. Gen. 110. Schreb. 153, 824. Willd. v. 1. 1151. Mart. Mill. Dict. v. 2. Ait. Hort. Kew. ed. 2. v. 2. 40. Jacq. Amer. 8. Juſſ. 340. Lamarck. Illuſtr. t. 138.—Claſs and order, *Pentandria Monogynia*. Nat. Ord. *Senticoſæ*, Linn. *Roſaceæ*, Juſſ.

Gen. Ch. *Cal.* Perianth inferior, of one leaf, its border in five deep, nearly ovate, ſpreading, unequal, permanent ſegments. *Cor.* Petals five, roundiſh, concave, ſlightly ſpreading, equal, deciduous. *Stam.* Filaments five, ſometimes but three, inſerted into the rim of the calyx on one ſide, very long, briſtle-ſhaped, flattiſh, permanent, at length rolled in ſpirally; anthers orbicular, of two lobes. *Piſt.* Germen ſuperior, roundiſh, compreſſed and ſloping, hairy; ſtyle thread-ſhaped, as long as the ſtamens, ariſing from the depreſſed ſide of the germen oppoſite to the ſtamens, near the bottom; ſtigma ſimple. *Peric.* Berry oval, ſwelling upwards, ſlightly compreſſed, ſomewhat triangular, the ſtyle and much of the hairineſs which clothed the germen remaining attached to its baſe on one ſide. *Seed* one, large, ſhaped like the pericarp. Aublet deſcribes it as a nut of two cells.

Eſſ. Ch. Calyx with five permanent ſegments. Petals five. Filaments inſerted into the rim of the calyx, very long, permanent, ſpiral. Style lateral. Berry ſuperior, with one ſeed.

The hiſtory of the ſpecies is ſingularly confuſed. We ſhall endeavour to collect under one view all that has been ſaid of them.

1. H. *americana*. Willd. n. 1. Swartz. Obſ. 94. Aubl. Guian. v. 1. 247. t. 98.—Cluſters upright, ſimple, axillary; their common ſtalk villoſe. Leaves oblong, pointed. Stamens five.—Native of Cayenne and Guiana. A *tree* 25 feet high or more, and ſix inches in diameter, with a reddiſh bark. *Branches* long, ſlender, ſcattered, and ſubdivided. *Leaves* alternate, oval, long-pointed, entire, ſmooth and green; the largeſt of them ſix inches long by $2\frac{1}{2}$ broad. *Footſtalks* very ſhort, with a pair of awl-ſhaped, downy, deciduous *ſtipulas*. *Cluſters* axillary, long, hairy, reddiſh; their partial ſtalks alternate, with one or two little ſcale-like *bracteas* at their baſe. Segments of the *calyx* reflexed. *Petals* blueiſh, emarginate. *Stamens* five, all on one ſide of the flower, very long, blueiſh upwards, as are likewiſe their *anthers*. *Style* rough in its lower part with red hairs. This tree flowers in March. Swartz and Willdenow ſeem to depend entirely on Aublet for this ſpecies, yet they take it for the original one of Linnæus, which he ſaw in Piſo's herbarium, and which had five ſtamens. However this may be, what he deſcribes in the *Hortus Cliffortianus* had but three, and ſhould ſeem to be different. What he quotes in the *Species Plantarum*, ed. 2. 290. from Marcgraave's Braſil, t. 78. f. 2, and which he ſays is bad, does not at all agree with any *Hirtella*.

2. H. *triandra*. Swartz. Prodr. 51. Ind. Occ. v. 1. 508. (H. americana; Jacq. Amer. 8. t. 8.)—Cluſters compound, terminal, ſolitary, downy, looſely ſpreading. Leaves elliptic-oblong, pointed, naked on both ſides. Stamens three.—Native of woods, by the ſides of torrents in Jamaica, Hiſpaniola, and other parts of the Weſt Indies, flowering in April and May. The *branches* are beſprinkled with minute warts, their young extremities clothed with depreſſed ſattin-like down. *Leaves* about three inches long, nearly elliptical; with a taper point, contracted, and ſomewhat rounded at their baſe, naked and ſhining, but rather rough to the touch. *Cluſter* five or ſix inches long, ſimple in Jacquin's figure, very compound in our ſpecimens. *Fruit* an inch long, or more, ſlightly hairy. Willdenow conſiders this as the *Hirtella* of Hort. Cliff. Swartz ſays the *petals* are white, *ſtamens* three, with the rudiments of from two to five minute filaments in the vacant ſpace oppoſite to them.

3. H. *pendula*. Herb. Linn. fil.—Cluſters compound, terminal, long, pendulous, hairy. Leaves oblong, pointed; heart-ſhaped at the baſe; downy beneath. Stamens three.—Native of the Weſt Indies? The *leaves* exactly reſemble thoſe in Aublet's figure of *H. americana*, both in ſize and figure, but are rough with ruſty down at the back. The *cluſters* are above a foot long, ſolitary, terminal, ſtalked, clothed all over with denſe, prominent, ruſty, ſhort hairs; their partial ſtalks generally cloven and two-flowered, the lower ones many of them much more compound and forked. *Calyx* very hairy; ſilky within. *Stamens* three, long and twiſted, as well as the *ſtyle*, which is quite ſmooth throughout. *Fruit* above an inch long, ſmooth, obovate, compreſſed upward, and emarginate. Fine ſpecimens of this, in the herbarium of the younger Linnæus, appear to have made a part of a numerous collection of Weſt Indian plants given him, when in England, by ſir Joſeph Banks. Yet we find no deſcription in Swartz or any other author applicable to them, nor does the above name any where occur.

4. H. *paniculata*. Swartz. Prodr. 51. Ind. Occ. v. 1. 510. Vahl. Symb. faſc. 2. 43. t. 31.—Cluſters compound, terminal, erect, hairy, ſometimes aggregate. Leaves oval, acute, ſhining; their ribs hairy beneath. Stamens five or ſix.—Native of Guiana. The *leaves* are peculiarly ſhining on both ſides, though their colour is paler at the back, and the ribs there hairy. In length they greatly vary, but ſcarcely in breadth. The young *branches*, *flower-ſtalks*, and *calyx*, are briſtly with long prominent tawny hairs. *Stamens* in our ſpecimens ſix. Some of Linnæus's remarks appear to indicate this ſpecies as what he had ſeen.

HIRTIUS, AULUS, in *Biography*, was an officer under Julius Cæſar, and wrote a ſupplementary part of the Commentaries publiſhed in his name. The books compoſed by Hirtius are the eighth of the Gallic war, and thoſe of the Alexandrine and African wars. Of the two latter he received his information partly from Cæſar's own mouth. His ſtyle is good, but his narrative is reckoned leſs clear than that of Cæſar himſelf. He was made conſul, together with Vibius Panſa in the year B. C. 43, and the conduct of the war againſt Antony was committed to them in conjunction with the young Octavianus. He gave Antony a conſiderable check in the neighbourhood of Mutina, but his ardour carrying him too far into the enemy's quarters, he received a wound which laid him dead on the ſpot. Univer. Hiſt

HIRUDELLA MARINA, in *Natural Hiſtory*, the name of a very remarkable little animal of the leech kind. The body of this creature is roundiſh and oblong, and adorned with many longitudinal lines or furrows; it is about an inch in length, and is of a greyiſh colour, and ſomewhat tranſparent; the bowels are ſeen through the ſkin, and appear at firſt ſight like ſtreaks on its ſurface; in the middle of the belly there is a remarkable protuberance, which, when cloſely examined, is found to be a muſcular body in form of a ſpherical bladder; this, when moſt diſtended, has the appearance of a ſpherical air-pump, and has all the properties of that machine, to be employed for the ſervice of the animal, and at its pleaſure. It reſembles, in its common figure, the cup of an acorn, with the mouth a little contracted. The head of the animal is of the ſame figure with that of the common leech, and ſerves to ſuck the juices of other animals in the ſame manner as in that inſect. The part of the body which reaches from the head to the middle protuberance is of a very irregular form, frequently in motion, and continually changing its figure; but the other part moves more ſlowly, and leſs frequently, and preſerves its ſhape unaltered. The protuberance has two motions, expanſion and undulation.

When the creature has a mind to fix itſelf any where, it does it by means of this protuberance, which it applies cloſely down to the ſubſtance, and void of air. Hence the external air ſo firmly preſſes its ſides againſt the ſubſtance, that it is not eaſy to remove it. When the creature changes its place, it draws the head round to the protuberance, and looſens it ſo as to be able to change its place as it has occaſion.

When this creature is kept out of water, it dies in a few hours; and when after being thus kept out a few minutes, it is put into ſea-water, it immediately darts out a fine green thread from its mouth; this it uſually makes of the length of its body, or thereabouts, though it varies it occaſionally; and by means of this it ſuſpends its body any length that it pleaſes in the water. It ſeems to be calculated only for living in the bodies of fiſh, for the ſea-water ſoon kills it; and it is obſerved to diminiſh its bulk very ſenſibly all the time that it is kept in it. Phil. Tranſ. N° 410.

HIRUDO, in *Zoology*, a genus of Vermes, the body of which is oblong, truncated at both ends, unarmed, and cartilaginous; and the progreſſive motion is effected by dilating the head and tail, and contracting itſelf into an arch. Linn. To this eſſential character it ſhould be added, that the two extremities of the true hirudo are capable of being dilated into a fleſhy diſk, by means of which it can affix itſelf firmly to the ſkin of animals, and the mouth, which is triangular, ſituated under the anterior part of the body.

This is a genus of aquatic worms, known in England by the name of leech; ſeveral of its ſpecies inhabit our waters, and two in particular, the common or medicinal leech, and the horſe leech, are ſo well known as to be familiar to every one. The body in the leech tribe is compoſed of a great number of rings; the ſkin more or leſs ſmooth, and the head, when in a ſtate of contraction, more pointed than the tail; the opening of the mouth is triangular, and armed with three ſtrong teeth, beſides a numerous aſſemblage of ſmaller ones, and a ſucker at the bottom, by the aſſiſtance of which it draws the blood from the wound inflicted by this formidable armament of teeth in the fleſh of the bleeding animal. The teeth of the leech are powerful enough to penetrate not only through the ſkin of man, but alſo that of horſes and cattle, examples of which very frequently occur when the latter bathe in the water. The hirudo tribe reſpire by the mouth. The greater portion of the ſpecies are furniſhed with eyes, the number of which however varies according to the ſpecies, being ſometimes eight, in others ſix, and again in others no more than two. Every individual of the leech tribe, like thoſe of the ſnail, is complete in its own conformation, being, as Redi obſerves, of both ſexes, and often producing their young alive. Their common ſubſiſtence is the blood of quadrupeds, and other ſanguineous animals which they caſually meet with in the water, and which, as they can bear an abſtinence of ſome weeks or even months, they generally find in ſufficient abundance. Should it prove otherwiſe they prey on worms and the larvæ of aquatic inſects, which they ſuck to death, as they ſubſiſt only on their fluids, and the ſmall portion of blood the vital parts of ſome particular kinds afford. The leech ſwims in the manner of the eel, and ſome of the ſpecies live in ſalt waters, though the greater number are confined entirely to the freſh waters, ſome preferring the clear and pure element, and others the ſtagnant pools and ditches, ponds, and marſhes which moſt abound with aquatic plants. There is only one ſpecies (the common kind), that can be applied with ſafety to medicinal purpoſes.

Species.

MEDICINALIS. Elongated, blackiſh, lineated above with yellowiſh; beneath ſpotted with yellow. *Hirudo medicinalis*, Ray. *Hirudo major et varia*, Geſn. *Medicinal leech.*

Inhabits ſtagnant ponds and ditches in Europe; the body is compoſed above of numerous annular wrinkles, which are contractile at pleaſure, and marked with variegated lines; mouth ſmaller than the tail; the laſt compoſed of an annular muſcle, by which it has the power of faſtening its body firmly to any ſmooth ſurface. The medicinal virtues of this ſpecies as a phlebotomiſt is well known.

SANGUISUGA. Elongated, olive brown, with an ochre-yellow marginal band. Linn. *Hirudo maxime vulgaris*, Ray. *Horſe leech.*

Abundant in ſtagnant waters; the length from four to ſix inches; the body above dull olive black or brown; beneath paler, with ſometimes a few black ſpots, and tail thicker than the head. Sucks blood with great avidity and in large quantities.

LINEATA. Elongated and grey, with four dorſal lines diſpoſed longitudinally. Müll.

A rare ſpecies, found early in the ſpring in ſtagnant waters; the length about an inch and a half; body annulated with numerous wrinkles, and ſix deep black eyes placed in a double row.

VULGARIS. Elongated, yellow-brown, with eight eyes diſpoſed in a lunate ſeries. Müll. *Hirudo octoculata*, Bergm. &c.

Length fifteen lines, the body ſometimes brown, and without ſpots; ſometimes ſprinkled above with yellow dots, or with dots of black, or varied in the middle with a knotty line, and a lateral blackiſh one; and ſometimes yellowiſh with longitudinal lineations, the middle knotty, and the lateral ones with remote red dots; eyes eight in general, or ſometimes nine.

STAGNALIS. Elongated, cinereous, with two eyes. *Hirudo ſtagnalis*, Linn. *Hirudo bioculata*, Müll.

Body whitiſh, pellucid, ſprinkled with cinereous dots and plaited at the ſides; eggs about forty, ſurrounded by a pellucid circle. The young, after excluſion, adhere by their tails to the abdomen of the parent. Length nine lines.

COMPLANATA. Body dilated, cinereous, with a double tuberculated line on the back; the margin ſerrated. Müll. *Hirudo lateribus attenuatis*, Hill. *Hirudo ſex-oculata*. Bergm.

Length four lines, the body with tranſverſe bands, compoſed of three pale lines, the margin whitiſh; body beneath grey; head pointed and white, with ſix eyes; tail orbicular and cinereous. Found in ſhallow ſtreams.

HETEROCLYTA. Dilated, pellucid and yellow, with entire margin. *Hirudo heteroclyta hyalina poſlice lutea*, Linn. *Hirudo hyalina*, Müll.

Body flattiſh, the anterior part pointed, poſterior rather broad, and marked above with numerous fine longitudinal ſtriæ of black ſpecks, and remote browniſh ones; head white, eyes four or ſix; eggs numerous, ſpherical, green and ſurrounded with a pellucid ring; the young that eſcape firſt are yellow, the latter green.

Geometra. Elongated, yellowiſh, with a pinnate white dorſal line. *Hirudo geometra, teres, extremitatibus dilatatis,* Linn. *Hirudo piſcium,* Müll. *Hirudo ore caudaque ampla,* Friſch.

Inhabits freſh waters, and fixes itſelf to the bodies of fiſhes; eyes four, colours varying.

Inhabits freſh waters, and fixes itſelf on the bodies of trout and other fiſh after the ſpawning ſeaſon; length eight lines, its progreſſive motion like the movement of a compaſs in meaſuring; body tapering before, and very broad at the tail; eyes four; colour variable.

Tessulata. Cinereous with a teſſellated margin; eyes eight, in a double longitudinal row. Müll.

Length eighteen lines; the body dilated and covered with black ſpecks; above with orange and white ſpots; beneath grey, with two rounded white ſpots in the middle. Found in rivulets.

Marginata. Dilated, brown, with a teſſellated margin, and four eyes. Müll.

Inhabits rivers, and reſembles the laſt; the length ten lines; head obtuſe before and narrowed behind, white, pellucid, and marked with two tranſverſe brown bands; abdomen reddiſh brown with very minute ſtriæ meeting beneath in doubled brown lines; back with five rows of whitiſh dots, the lateral margin white, with a double brown line divided into ſquare patches; tail orbicular and pale, with brown ſpots on the margin.

Grossa. Dilated, yellowiſh, and divided on the fore-part. Müll.

A marine ſpecies found ſometimes within the ſhell of Venus exoleta; the length about twelve lines, the breadth ſeven. The body marked with fine white ſtriæ, the anterior part narrower and obtuſe; eggs very numerous, ſpherical, and ſwimming in a gelatinous fluid.

Hippoglossi. Dilated, whitiſh, with a double white eye in the middle of the body. Müll.

Inhabits the ſea and infeſts fiſhes, being often fixed to the ſkin of the turbots and holibuts. The body is oval, depreſſed, pellucid, a little pointed before, and ending in a globular ring behind; head ſomewhat triangular with a cinereous ſpot each ſide; eyes not viſible; tail with a row of tubercles beneath from the centre, and towards the middle two hooks.

Muricata. Body round, tapering, tuberculated, and furniſhed with two ſhort horns on the head. Gmel.

A marine ſpecies that infeſts fiſhes, leaving a black mark on the ſpot to which it adheres; the head is larger than the tail; body ſtrongly annulated and tuberculated on the rings; the tail much dilated.

Crenata. Slightly depreſſed, ſub-oval, with tranſverſe annular ſtriæ, and crenulated margin. Linn. Tranſ.

Found in ſhallow ſtreams among aquatic plants. The colour greeniſh, inclining to aſh, the upper ſurface ſomewhat convex; its interanea are very viſible by means of its vitreous tranſparency, and appear like ſo many granula; eyes two and much approximated.

It appears to us not altogether improbable, that among the numbers of ſpecies above deſcribed, ſome few at leaſt will be hereafter found to belong rather to the genus Planaria, than that of Hirudo.

In the firſt volume of the Linnæan Tranſactions Dr. Shaw deſcribes an animal of the molluſca family, under the title of hirudo viridis, and which, from a note annexed to another paper, in the ſame volume of the ſame work, that author afterwards conſidered referrable to the planaria tribe. The correction of this is material, as ſome writers, depending on the former authority, ſtill retain it among the hirudines. In the removal of this ſpecies to the genus planaria, it will be proper to change the trivial appellation by which it was before diſtinguiſhed, becauſe another ſpecies of planaria, very different from the animal deſcribed by Dr. Shaw, has been previouſly deſignated by the appellation of *viridis*.

The two kinds of vermes introduced to notice by the Rev. Mr. Kirby, in the ſecond volume of the Linnæan Tranſactions, under the names of *hirudo alba*, and *hirudo fuſca*, are, perhaps, planariæ likewiſe; nor are we entirely ſatisfied that the ſpecies *crenata*, of the ſame author, and which is alſo deſcribed in the ſame paper, is ſtrictly of the hirudo tribe. Mr. Kirby himſelf ſuggeſts the idea, that they may be ſufficiently diſtinct to conſtitute a new genus. Though we agree with Mr. Kirby in this reſpect, and are inclined with Dr. Shaw to think, they may with propriety be referred to the planaria genus, we cannot ſo far aſſent to the opinion of Dr. Shaw, expreſſed in the note (p. 320.) as to believe the H. crenata to be the young of the Linnæan hirudo geometra. This laſt is delineated in all its ſtates of growth by Roeſel under the title of *hirudo piſcium,* (t. 3.) and the ſlighteſt compariſon of theſe figures, with thoſe of hirudo crenata in the Linnæan Tranſactions, will be ſufficient, we imagine, to diſcountenance ſuch conjecture. There is one diſtinction, at once ſo obvious, that we cannot refrain to mention it; this conſiſts in the number of the eyes in the two animals, the hirudo geometra poſſeſſing no leſs than four, and the ſpecies crenata no more than two.

We ſhall finally direct our attention to the *hirudo branchiata* of the Linnæan Tranſactions, (vol. i.) a ſpecies of vermes, which is not, we believe, conſigned with any abſolute certainty to the genus at preſent under conſideration: in this reſpect, at leaſt, it is confeſſedly ambiguous, and as ſuch, appears to have excited ſome little curioſity in the minds of continental naturaliſts. The obſervations of Boſc, on this particular ſubject, appear to us rather intereſting and worthy of being tranſcribed, and this, the more eſpecially, ſince they do not ſeem to place the account of this ſingular animal, as originally given by its Engliſh obſerver, in that clear and ſatisfactory point of view we could wiſh for, or expect.

“ On trouve (ſays M. Boſc) dans le premier volume des Actes de la Société Linnéenne de Londres, la deſcription et la figure d'une ſangſue trouvée ſur la tortue de mer, qui a de chaque côté ſept branchies rameuſes fort ſaillantes. Il eſt évident que l'on doit en former un genre nouveau, ſurtout ſi ce ſont réellement des branchies; mais Mentzies, l'auteur de ce memoire, n'entre pas dans des details ſuffiſans pour pouvoir l'aſſurer d'une maniere poſitive.” We admit with M. Boſc, that the ingenious writer, to whom we are indebted for the diſcovery of this curious creature, does not enter ſo fully into detail as to enable us to aſcertain the genus to which it may belong, or rather, we might ſay, to authoriſe its removal into any other genus, were we diſpoſed to conſider its preſent ſituation improper. The concluſion of Boſc, that it does not appertain to the hirudo genus, is perhaps too incautiouſly aſſumed: the animal, he tells us, has ſeven “ branchies” on each ſide, and it is upon the ſuppoſed exiſtence of theſe, that he reaſons on the propriety of its forming a new genus, though he himſelf, at the ſame time, doubts whether the lateral appendages to which he alludes be "branchies" or not. The exiſtence of ſuch branchiæ would unqueſtionably be ſufficiently deciſive to remove it from the hirudo tribe, ſince the latter reſpire by the mouth, but as to the actual exiſtence of ſuch branchiæ it is poſſible we may miſconceive the fact: or indeed the ramoſe appendages to which he adverts may be truly ſuch, for there is nothing, at leaſt, in the deſcription given by Mr. Menzies, either to ſupport or contradict this idea.

The deſcription of this creature, as given by Mr. Menzies, is briefly as follows: H. depreſſa, attenuata, albida, ſetis lateralibus ramoſis utrinque 7; interaneis fuſcis, bifidis, pellucentibus; or, as may be rendered to the Engliſh reader: depreſſed, attenuated, whitiſh, with ſeven ramoſe briſtles each ſide; inteſtines brown, bifid, and pellucid: and in the general account accompanying this ſpecifical deſcription, theſe lateral appendages are ſaid to be ſoft, pellucid, branchy briſtles.

Thus it is not apparent, from any obſervation that has fallen from Mr. Menzies, that theſe lateral appendages are real branchiæ, or reſpiratory organs: having ſtated this, it is fair to add, that the concluſion of Boſc, though not to be aſſumed from the remarks of its original deſcriber, may be nevertheleſs accurate, and probably is ſo. The appearance of the animal, if any confidence can be placed in the delineation, ſeems to favour this conception. The magnified figure of one of theſe lateral ramoſe appendages, as ſhewn in the plate in particular, accords exceedingly in appearance with the breathing organs of ſome of the molluſca tribe, as exemplified in various ſpecies of the nereides, aphroditæ, and others; and ſhould the animal really poſſeſs ſuch breathing organs, its internal organization muſt be altogether ſo very different from that of the hirundines, that there can be no doubt of the propriety of inſtituting a new genus for its reception.

HIRVENSELMI, in *Geography*, a town of Sweden, in Tavaſtland; 75 miles E. of Tavaſthus.

HIRUNDO, in *Ornithology*, a genus of the Paſſerine order, diſtinguiſhed by the following eſſential character. The bill is ſmall, weak, curved, ſubulate, and depreſſed at the baſe; gape larger than the head; tongue ſhort, broad, and bifid; wings long; tail moſtly forked.

This genus is divided by ſome writers into two ſections, according to the poſition of the feet, the firſt having three toes placed forwards and one behind; the other with all the toes placed forwards; the former are the *ſwallows*, the other the *ſwifts* of Engliſh authors. In both the noſtrils are open, and the legs ſhort.

Moſt of theſe birds frequent marſhy places, and ſkim the ſurface of the ground and water in ſearch of inſects, which they catch on the wing with great dexterity, by means of the enormous gape of their jaws. Inſects are their peculiar and almoſt excluſive food, and it is for this reaſon ſwallows are regarded with a degree of ſuperſtitious tenderneſs in every country that abounds with noxious creatures of that deſcription. Swallows are equally incapable of bearing the extremes of heat and cold, and on that account, except in very temperate weather, they are oftener ſeen on the wing in the morning before the heat of the day becomes oppreſſive, and in the evenings towards ſunſet than at any other times.

Theſe birds walk indifferently owing to the ſhortneſs of their legs, and from the ſame cauſe riſe off the ground, or any low ſituation with difficulty; and hence when they go to reſt, they almoſt invariably ſuſpend themſelves againſt the ſides of walls or other elevations, from which they are enabled to renew their aerial evolutions with facility.

The annual migration of the ſwallow has been long the theme of curious obſervation among naturaliſts, and few topics of this kind have met with more ample diſcuſſion, or given birth to more extraordinary opinions. The truth, however, is, that the migrations of the ſwallows, like thoſe of moſt other birds of paſſage, may be eaſily explained, ſince nature does not in this inſtance, more than any other, deviate from her ordinary courſe, and of this we have the moſt poſitive aſſurances both in reaſon and in fact. Nearly all the ſpecies of the ſwallow-tribe are found in the two great continents, remaining in the northern part during ſummer, appearing near the equinox in ſpring, and again retiring to more temperate climates as the autumn approaches. Part remain in hot countries all the year, as in Egypt, Æthiopia, Libya, and the countries between the tropics. They regularly paſs alternately acroſs the Archipelago from Europe to Africa, and from Africa to Europe as the ſeaſons change; this is the general progreſs of all the ſpecies of the ſwallow tribe that inhabit Europe; and the ſame courſe of migration from one part of the world to another is obſervable in the common ſwallow, the ſpecies whoſe migrations have excited ſuch very peculiar attention among modern writers as well as thoſe of remote antiquity; we ſhall enter more fully into the details of this intereſting ſubject under the article SWALLOW.

The hirundo genus, including the ſwallow and the ſwift family, contains about forty ſpecies, the greater part of which are ſwallows, the ſwifts being few in number.

Species.

RUSTICA. Front and chin cheſnut; tail-feathers, the two middle ones excepted, with a white ſpot. Linn. Kram &c. *Hirundo domeſtica*, Geſn. &c. *L'Hirondelle de Cheminée*, Briſſ. *Common or chimney ſwallow*, Will. Donov. Br. Birds, &c.

The common ſwallow is an inhabitant of moſt parts of the globe, being of the migratory kind, and viſiting different countries at particular ſeaſons. About the latter end of March it arrives in England, and remains till September, during which intervening period it frequents houſes, under the roofs, or in the chimnies of which it uſually breeds; the neſt is compoſed of mud, intermixed with chaff, feathers, &c. and contains from four to ſix eggs of a whitiſh colour ſpeckled with red. Previouſly to its departure it aſſembles in vaſt flocks on the tops of houſes, churches, or other elevations, from whence they all depart in a body with extreme regularity, and as it appears under the directions of particular leaders. Thoſe from Europe paſs the winter in Africa, South America, India, and other ſimilar climates, returning again towards the north in ſpring. Like the reſt of its tribe the food of the ſwallow conſiſts of inſects, which it takes on the wing. This hirundo (ſays an ingenious writer) though called the chimney-ſwallow, by no means builds altogether in chimnies, but often within barns and out-houſes againſt the rafters. In Sweden ſhe builds in barns, and is called ladu ſwala, (the barn ſwallow.) Beſides, in the warmer parts of Europe there are no chimnies to houſes; and in theſe countries ſhe conſtructs her neſt in porches, gateways, galleries, and open halls. With us the ſpecies breeds in chimnies, and loves to haunt thoſe ſtacks where a conſtant fire is kept, no doubt for the ſake of the warmth. But then it cannot ſubſiſt in the ſhaft at the bottom of which the fire is burning; it prefers one adjoining, in which it builds its neſt about five or ſix feet below the chimney opening at the top. The neſt is conſtructed of mud mixed with ſhort pieces of ſtraw, in the form of the half of a deep diſh, and is lined with feathers and graſs, which it catches floating in the air. The addreſs with which the ſwallow aſcends and deſcends with ſecurity through ſo narrow a paſs is wonderful. When hovering over the mouth of the funnel, the vibration of her wings, acting on the confined air, occaſion a rumbling noiſe like thunder. It is not improbable that the dam ſubmits to this inconvenient ſituation ſo low in the ſhaft, in order to ſecure her brood from rapacious birds, and particularly owls, which frequently fall down chimnies, perhaps in attempting to get at theſe neſtlings. The firſt brood of young are hatched the laſt week in June, or the firſt week in July. The progreſſive method by which the young are introduced into life is very amuſing; firſt they emerge from the ſhaft with difficulty enough, and often fall down into the room below; for a day or two they are fed on the chimney top, and then are conducted to the dead leafleſs bough of ſome tree, where, ſitting in a row, they are attended with great aſſiduity, and may then be called porchers. In a day or two more they become flyers, but are ſtill unable to take their own food, therefore they play about near the place where the dams are hawking for flies, and when a mouthful is collected, at a certain ſignal given, the dam and the neſtling advance riſing towards each other, and meeting at an angle, the young one all the while uttering a quick note of gratitude and complacency. All the ſummer long is the ſwallow a moſt inſtructive pattern of unwearied induſtry and affection, for from morning to night while there is a family to be ſupported ſhe ſpends the whole day in ſkimming cloſe to the ground, and in the moſt ſudden and lively evolutions. Avenues and long walks under hedges, and paſture fields, and mown meadows where cattle graze, are her delight, eſpecially if there are trees interſperſed; becauſe in ſuch places inſects abound. The ſwallow is the firſt to announce the approach of birds of prey to the houſe martin and other little birds, warning them of danger by its ſhrill alarming note, and aſſociating them in a body to purſue and buffet the intruder. The ſwallows drink as they fly ſipping the ſurface of the water, and in hot weather are often ſeen dropping into the water many times together, to waſh and cool themſelves. The ſong of this bird is very pleaſing.

The ſwallow, though generally regarded in moſt countries with a kind of ſuperſtitious veneration for its utility in deſtroying pernicious inſects, is in Italy and ſome other parts eſteemed a bird of chaſe, and the hunting of them at particular ſeaſons a favourite diverſion. The fleſh is conſidered as a delicacy little inferior to that of the ortolan.

Tahitica. Blackiſh-brown with a purple gloſs above; front and neck beneath purple-tawny; belly and vent ſooty; tail, bill, and legs black. Gmel. *Otaheite ſwallow*, Lath.

Length five inches; the bill black; irides brown. Inhabits the mountainous parts of Otaheite.

Esculenta. All the tail-feathers with a white ſpot. Oſbeck. *Hirundo riparia Cochinſinenſis*, Briſſ. *Hirundo nidis edulibus*, Bont. *Apus marina*, Rumpf. *Salangane*, Buff. *Eſculent ſwallow*.

The eſculent ſwallow is ſaid to be leſs than the wren, and only two inches and a quarter in length; the bill black; irides yellow; upper part of the body brown; the under whitiſh; tail forked, with each of the feathers white at the tip; and the legs brown. This deſcription was taken by Briſſon from a drawing of the bird by Mr. Poivre, the figure of which is repeated in the ornithology of Briſſon. Mr. Marſden, however, deſcribes the bird to be about the ſize of the common martin, and Dr. Latham, when he publiſhed his Synopſis, was inclined to think the bird at leaſt of that ſize; this he was induced to believe from the ſize of the eggs which accompany the neſt of the eſculent ſwallow, now in the Britiſh Muſeum, and which are as large as thoſe of the martin, and of the ſame colour.

The neſts of theſe birds, in ſhape reſembling a lemon cut down the middle, and compoſed of gelatinous ſubſtances alone, render the ſpecies worthy of particular curioſity; the neſt itſelf being not only edible, but conſidered as one of the greateſt delicacies of the table by the luxurious Aſiatics. This neſt, the weight of which is about half an ounce, adheres by one ſide to the rock. Authors differ greatly as to the materials of which it is compoſed; Oſbeck and others imagine it to conſiſt of ſea-worms of the molluſca order: Forreſter conceives it to be the ſea-qualm, a ſort of cuttle-fiſh found in thoſe ſeas, or a glutinous ſea-plant, called agal-agal. Or it has been again ſuppoſed they rob other birds of their eggs, and apply the white of them to that purpoſe. The fabrication of theſe neſts is very obvious, being compoſed of ſeveral concentric layers, which are ſeen diſtinctly when the neſt is broken tranſverſely. Theſe neſts are found in vaſt numbers in certain caverns in the various iſlands of the Soolo Archipelago, ſituated between the longitude 117° and 120°, and latitude 5° and 7°; particularly in three ſmall iſlands, or rather rocks, in the caverns of which the neſts are found fixed to the ſides in aſtoniſhing numbers. They are alſo found in amazing quantities on a ſmall iſland called Toc, in the ſtraits of Sunda; the caverns of which are lined with the neſts; but no where in greater abundance than about Croee, near the ſouth end of Sumatra, four miles up a river of that name. But they are not peculiar to the above places; for they are likewiſe common from Java to Cochinchina on the north, and from the point of Sumatra weſt, to New Guinea on the eaſt; where the ſea is ſaid to be covered with a viſcous ſubſtance, like half-melted glue, and which ſome ſuppoſe the birds either take up from the ſurface by means of the bill during flight, or pick up from the rocks when left there by the waves.

The neſts are of two colours, the one whitiſh, the other black, and apparently dirty. The whitiſh kind is perfectly clear, and is applied to the purpoſes of thickening broths, and ragouts made of chickens, and to which they contribute, it is ſaid, an exquiſite flavour. Theſe neſts are firſt ſoaked in water to ſoften, are then pulled to pieces, and, after being mixed with ginſeng, are put into the body of the fowl. The whole is then ſtewed in a pot with a ſufficient quantity of water, over a fire of coals all night, and the morning following it is fit to be eaten. The beſt neſts are of a pure yellowiſh white, and half tranſparent, and theſe ſell in China from one thouſand to fifteen hundred dollars the *pekul*, a weight equal to about 123lbs. Engliſh. Thoſe of a black colour being dirty, are worth but about twenty dollars the pekul, being ſerviceable only in making glue. The gatherers take all they can, in the hopes of compelling the birds to make freſh neſts, and thus render their next gathering more profitable. The Dutch alone are ſaid, a few years ago, to export from Batavia a thouſand pekuls of theſe neſts every year, the whole of which are brought from the iſles of Cochinchina, and thoſe lying to the eaſtward. At Sumatra the bird is known by the name of *layong-layong*.

The above-mentioned neſts, (examples of which occur pretty frequently in the cabinets of the curious,) are ſuppoſed to belong to the bird deſcribed by Briſſon, but of this we are not entirely aſſured: it was before obſerved, that the bird deſcribed by Marſden was far ſuperior in ſize to that mentioned by Briſſon, and from the recent obſervations of writers, it does really appear theſe neſts may be the fabrication of ſome other bird with which we are at preſent unacquainted. The idea entertained by ſir George Staunton, (Emb. China) ſeems to be that theſe neſts may be the produce of more than one ſpecies of ſwallow, and this opinion is extremely plauſible, though it muſt be at the ſame time admitted the ſubject is too much enveloped in obſcurity to authorize that concluſion. In confirmation of the ſuggeſtion we may add that it is not long ſince another ſort of ſwallow, very different from that recorded by Briſſon, was brought, with the neſt, as the eſculent ſwallow of the Indies, to ſir Joſeph Banks; and which in ſize agreed much better with that deſcribed by Marſden, than the bird deſigned by Poivre. An account of this newly obſerved kind is inſerted in the ſecond Supplement of Dr. Latham's work: its ſize is equal to that of the common ſwallow; the beak ſmall and black, and the opening ample: the whole of the plumage above is gloſſy black; beneath aſh; wings long; tail forked, with all the feathers rounded at the tip; and the legs blackiſh.

BORBONICA. Blackiſh fuſcous, beneath grey, varied with longitudinal brown ſpots; tail equal; bill and legs black. Gmel. *Grande hirondelle*, &c. Buff. *Wheat ſwallow*.

Size of the ſwift; the bill black, and the tail even at the end. Inhabits the iſle of France, where it is known by the name of hirondelle des blés, or wheat ſwallow, from its frequenting places newly ſown with that grain, and feeding on it. The ſpecies alſo feeds on inſects, in queſt of which it often follows herds of cattle, and relieves them from theſe winged tormentors, by devouring them. The female lays two eggs, of a grey colour, dotted with brown; the neſt is compoſed of ſtraw and feathers. There is a variety of this bird having the three outer tail-feathers whitiſh at the tips.

FRANCICA. Blackiſh, beneath and rump whitiſh or grey. Gmel. *Hirondelle de Bourbon*, Buff. *Grey-rumped ſwallow*, Lath.

Length four inches and a quarter; inhabits the iſle of France, but is not common, and is found chiefly in the neighbourhood of freſh waters.

AMERICANA. Blackiſh fuſcous, gloſſed with blue and green; beneath whitiſh; rump and vent rufous; quill-feathers whitiſh within; tail equal. Gmel. *Hirondelle à croupion roux et queue carrée*, Buff. *Rufous-rumped ſwallow*, Lath.

Inhabits about the river Plata, in South America; length ſix inches and a half. A variety of this bird has the throat rufous.

URBICA. Blackiſh; beneath white; tail-feathers without ſpots. Scop. &c. *Hirundo minor ſ. ruſtica*, Briſſ. *Hirundo agroſtis*, Geſn. *Petit martinet*, Buff. *Hauſſchwalbe*, Friſch. *Martin, martinet*, or *martlett*, Willd. Donov. Br. Birds, &c.

This ſpecies is more frequent than the common ſwallow; the length five inches and a half; its bill black; mouth yellow; rump white; and legs covered with ſhort white down. This bird is equally common throughout moſt parts of Europe, and extends over great part of America: it builds under the eaves of houſes, but not in chimneys, like the common ſwallow. It lays twice in the year, from five to three, or only two eggs, the colour of which are white, with the broader end rather duſky.

PANAYANA. Black; beneath white; frontal ſpot and chin rufous yellow; collar black. Gmel. *Hirondelle d'Antique*, Sonner. *Panayan ſwallow*, Lath.

The ſize of the ſand martin; bill black; wings and tail of equal length; the legs black. Inhabits the iſland of Panay, one of the Philippines.

RUFA. Shining black; beneath rufous; front whitiſh. Gmel. *Hirondelle à ventre roux de Cayenne*, Buff. *Rufous-bellied ſwallow*, Lath.

CAPENSIS. Blackiſh-blue, beneath yellowiſh, with blackiſh ſtreaks; cap rufous; lateral tail-feathers with a white ſpot. Gmel. *Hirondelle au capuchon roux*, Buff. *Cape ſwallow*.

Native of the Cape of Good Hope; the length ſeven inches; bill half an inch in length, and black; the legs duſky. It is ſaid to build its neſt in houſes againſt the ceilings, the form rounded with a cylindrical entrance, the exterior ſubſtance mud, with an inner lining of feathers. The female lays four or five eggs, which are ſpeckled.

RIPARIA. Cinereous; chin and belly white. Linn. *L'Hirondelle de rivage*, Briſſ. *Hirundo riparia*, Aldr. *Sand martin*, or *Shore-bird*, Will. Donov. Br. Birds, &c.

Inhabits ſandy places in Europe and America; the length four inches and three quarters; bill blackiſh; legs blackiſh, and feathered behind. The female lays from five to ſix eggs, of a clear white colour, either in a neſt, which it builds of dried fibres, ſtraw, and feathers; or in hollows of trees, or cavities in the ſand, and ſometimes in the ſteep ſhores of lakes and rivers.

RUPESTRIS. Mouſe-colour, beneath whitiſh; tail ſubequal, the feathers with a white ſpot on the inner web. Scop. *Rock ſwallow*.

Makes its neſt of clay in the hollows of rocks, and inhabits Carniola. Size of the common martin.

MONTANA. Mouſe colour, beneath rufous; quill and tail-feathers grey brown, edged with rufous, the latter, except the middle and outer ones, with a white ſpot within. Gmel. *Hirondelle griſe des rochers*, Buff. *Cragg ſwallow*, Lath. *Mountain ſwallow*.

Inhabits the mountains of Auvergne and Dauphiné, and alſo thoſe of Savoy, arriving at the latter about the middle of April, and departing in the middle of Auguſt. The length is five inches and a half; the bill black; legs covered with grey down and mixed with brown, claws black.

PURPUREA. Entirely violet; tail forked, Kalm. *Hirundo apus Carolinenſis*, Briſſ. *Purple martin*, Cateſb. *Purple ſwift*, Arct. Zool. *Purple ſwallow*, Lath.

Length ſeven inches and three quarters; bill black; legs and claws blackiſh; the plumage of the male richly gloſſed with purple, that of the female duſky brown. The ſpecies paſſes the ſummer in Carolina and Virginia, retiring to warmer climates at the approach of winter.

SUBIS. Blueiſh black; beneath and mouth whitiſh-aſh. Gmel. *Hirundo freti Hudſonis*, Briſſ. *Hirondella de la Baie d'Hudſon*, Buff. *Great American martin*, Edw. *Hudſon's Bay ſwallow*.

Rather larger than the ſwallow; bill black; quills, and forked tail blackiſh edged.

SENEGALENSIS. Shining-black; beneath and rump rufous. Gmel. *Grande hirondelle à ventre roux du Senegal*, Buff. *Senegal ſwallow*.

Length eight inches and a half; the bill black and duſky; rufous on the throat, and under the wings paleſt. Native of Senegal.

AMBROSIACA. Greyiſh brown; bill blackiſh; legs fuſcous. Gmel. *Hirundo riparia ſenegalenſis*, Briſſ. *Hirondelle ambrée*, Buff. *Ambergris ſwallow*.

Size of a wren; the length five inches and a half; bill half an inch long and black; tail very forked; the legs black. According to Seba the ſpecies is ſaid to emit a powerful ſcent, reſembling that of ambergris. The ſpecies inhabits Senegal. There is a variety of this ſpecies, the plumage of which is pale aſh, beneath paler.

FASCIATA. Black; tranſverſe band on the belly and ſpot on the outer part of the thighs white. Gmel. *Hirondelle a ceinture blanche*, Buff. *White-bellied ſwallow*, Lath.

Inhabits near rivers in Cayenne and Guiana: the length ſix inches.

TAPERA. Tail-feathers equal; body blackiſh, beneath white. Gmel. *Hirundo Americana*, Briſſ. *Tapera*, Sloane, Marcgr. &c. *Tapere*, Buff. *Tapera ſwallow.*

Length five inches and three quarters; the bill black; throat and breaſt grey brown; quill and tail-feathers blackiſh brown; tail ſlightly forked; legs brown. Briſſon deſcribes the ſpecies as a native of Brazil and Cayenne, and Sloane as an inhabitant of Jamaica, being a bird of paſſage, and remaining on the iſland ſix months of the year.

TORQUATA. Brown, beneath white; tail even; pectoral band brown; between the bill and eyes a white ſpot. Gmel. *Hirondelle brune et blanche à ceinture brune*, Buff. *Brown collared ſwallow.*

Native of the Cape of Good Hope. Length eight inches.

LEUCOPTERA. Cinereous gloſſed with blue and green, beneath, rump, and wings waved with white. Gmel. *Hirondelle à ventre blanc de Cayenne*, Buff. *White-winged ſwallow.*

Length four inches and a half to five inches; the bill black; wings longer than the tail; quill and tail-feathers brown, gloſſed with blue and green; the legs pale. A variety of this ſpecies is alſo found, the plumage of which is brown above, beneath ſpotted with brown. Theſe birds inhabit the marſhes of Savannah.

PELASGIA. Tail-feathers equal, naked and ſubulate at the tip. Gmel. *Hirundo cauda aculeata americana*, Kalm. *Hirundo Carolinenſis*, Briſſ. *American ſwallow*, Cateſby. *Aculeated ſwallow*, Arct. Zool.

There are two diſtinct varieties of this ſpecies, in one of which the throat is whitiſh and ſpotted with rufous, in the other the rump is grey, and the throat grey tinged with rufous. The firſt inhabits Carolina and Virginia, the other Louiſiana; the common occurs in Cayenne. The length is four inches and a quarter, and it builds in chimneys like the common ſwallow.

ACUTA. Black, beneath brown; tail-feathers naked, and ſubulate at the tip. Gmel. *Hirondelle noire acutipenne de la Martinique*, Buff. *Acute tailed ſwallow.*

A ſmall bird not exceeding the ſize of the common wren. This ſpecies is found in Martinique.

PACIFICA. Brown-black; throat and rump bluiſh-white. *L'Hirondelle brune de la Nouvelle Hollande*, Sonn. *Pacific ſwallow.*

Native of the iſlands in the Pacific ocean.

CAUDACUTA. Blackiſh; front white; wing-coverts varied with white; caudal feathers pointed at the end. *Hirundo caudacuta*, Lath. *L'Hirondelle acutipenne de la Nouvelle Galle*, Viel. *Sharp-tailed New Holland ſwallow.*

Inhabits New Holland. Size twice that of Hirundo acuta.

DAURICA. Blue, beneath white; temples and rump ferruginous. Gmel. *Hirundo alpeſtris*, Pallas. *Daurian ſwallow.*

Inhabits the Alpine parts of Siberia, and builds an hemiſpherical neſt in the clefts of the higheſt rocks. Its ſize exceeds that of the common ſwallow; the temples are ferruginous; primary quill-feathers blackiſh, the tips obtuſe with a brown ſtreak; the firſt long; outer tail-feather twice the length of the reſt; vent pale-aſh, the feathers black at the tip.

ERYTHROCEPHALA. Duſky black, the feathers edged with white; beneath white; the head red. Gmel. *Red-headed ſwallow*, Lath.

Size of the leaſt humming bird. Inhabits India.

AOONALASHKENSIS. Black; beneath cinereous; rump whitiſh. Lath. *Aoonalaſhka ſwallow.*

Inhabits Aoonalaſhka. Length four inches and a half.

INDICA. Fuſcous, beneath whitiſh; greater part of the head rufous. Gmel. *Rufous-headed ſwallow*, Lath.

Native of India. The length is four inches; ſome of the wing-coverts edged with white; quill-feathers longer than the tail; bill duſky brown; legs duſky.

NIGRA. Entirely black. Gmel. *Hirundo apus dominicenſis*, Briſſ. *Petit martinet noir*, Buff. *Black ſwallow.*

The length of this bird is near ſix inches; the bill black and half an inch long; the tail is forked; and the wings longer by nearly an inch and a half. This ſpecies inhabits dry places in the interior of South America, and is not numerous. For the reception of its neſt it digs a deep hole in the earth, about half a foot in length, with a long entrance riſing to the ſurface, the opening of which is ſo very ſmall as only juſt to permit its entrance. Buffon deſcribes two varieties of this bird, one of which has a white ſtripe in front, and the other entirely blackiſh grey.

DOMINICENSIS. Black, with a ſteel gloſs; abdomen white. Gmel. *Grand martinet noir à ventre blanc*, Buff. *St. Domingo ſwallow.*

Size of the chimney ſwallow; the bill and legs brown. This ſpecies inhabits the Weſt Indian iſlands during the months of May, June, and July. Its ſong reſembles that of the lark.

PERUVIANA. Black, beneath white; band on the belly pale aſh-colour; quill and tail-feathers pale grey, edged with yellowiſh-grey. Gmel. *Hirundo Peruviana major,* Briſſ. *Peruvian ſwallow.*

Native of Peru. The eyes black, ſurrounded by a brown circle.

CINEREA. Black, beneath cinereous; quill and tail-feathers cinereous, edged with yellowiſh-grey. Gmel. *Petit hirondelle noire à ventre cendré*, Buff. *Aſh-bellied ſwallow*, Lath.

Leſs than the common ſwallow, and inhabits Peru and Otaheite. A ſuppoſed variety entirely blackiſh-grey, with the wings longer than the tail, is found in Louiſiana.

CHALYBEA. Black with a ſteel gloſs, beneath white; wings and tail black; bill and legs brown. Gmel. *Hirundo Cayanenſis*, Briſſ. *Hirondelle de Cayenne*, Buff. *Chalybeate ſwallow.*

A conſtant inhabitant of Cayenne throughout the year, and is frequently ſeen perched on fallen or decayed trees, in the hollows of which it lays its eggs, without the trouble of compoſing a neſt. The length of the bird is ſix inches; the bill three quarters of an inch long, rather ſtout, and with the legs brown.

VIOLACEA. Black-blue tinged with violet; greater quill-feathers within, the bill and legs blackiſh. Gmel. *Hirondelle bleue de la Louiſiana*, Buff. *Violet ſwallow.*

Length eight inches and a half; bill three quarters of an inch and black; the legs black. Inhabits Louiſiana.

JAVANICA. Blue-black; front, throat, and fore part of the neck, ferruginous; beneath and rump aſh; tail black, the feathers, except the two middle ones, with a white ſpot each ſide. *Hirundo Javanica*, Sparrman, &c. *Java ſwallow.*

About the ſize of the chimney ſwallow; the bill and legs black. Inhabits Java.

BICOLOR. Black gloſſed with blue; front, fore part of the neck, and flank, red-brown; throat fawn colour. *L'Hirondelle noire et fauve*, Sonnini.

Native of America; ſize of the chimney ſwallow, and rather longer; the wings and tail edged with greyiſh-white; the breaſt grey-brown; middle of the belly and the under coverts of the tail whitiſh; tail forked; bill and legs black. The male birds vary in the colour of the plumage, beneath being more or leſs whitiſh, tawny or reddiſh. The colours of the female are more obſcure.

CÆRULEA. Blue, gloſſed with violet, green, and coppery; front, cheeks, throat, and under parts of the neck, reddiſh; tail with a creſcent-formed band of white. *L'Hirondelle bleue et rouſſe*, Sonnini.

A new ſpecies lately found in Guiana; the length ſix inches and a half; the bill half an inch; between the neck and breaſt a blue collar.

** *Toes all placed forwards.* Swift.

APUS. Blackiſh; chin white. *Hirundo apus*, Linn. *Martinet noir*, and *grand martinet*, Buff. *Mauerſchwalbe*, Friſch. *Black martin* or *ſwift*, Ray. Will. Donov. Br. Birds.

The male of this well known ſpecies is about eight inches long, the female rather leſs; the whole plumage of the former ſooty black, except the chin, that of the female more inclining to brown, and the ſpot on the chin obſcure. The ſwift, from its length of wing, flies well, but its feet are ſo ſmall that it riſes from the ground with great difficulty; its walking alſo is attended with inconvenience from the ſame cauſe, and it reſts chiefly by clinging to the ſides of walls, and other ſimilar ſituations. It builds under the eaves of houſes, or in ſteeples, towers, and other lofty buildings; and generally lays five eggs, the colour of which is white, and the form ſomewhat elongated. The food of theſe birds conſiſts of inſects. They are inhabitants chiefly of the European continent, though ſometimes noticed in America. This is the only kind of ſwift found in Britain.

MELBA. Brown; chin and belly white. *Hirundo melba*, Gmel. *Hirundo major Hiſpanica*, Briſſ. *Hirundo riparia maxima*, Klein. *Hirundo Alpina*, Scop. *Grand martinet à ventre blanc*, Buff. *Greateſt martin* or *ſwift*, Edw. *White bellied ſwift.*

Length eight inches and a half; the bill black; collar grey-brown varied with blackiſh; wings and tail gloſſed with red and green; breaſt white; lower part of the belly grey-brown; legs fleſh-colour, and downy in front. Inhabits the mountainous parts of Spain, and other countries in the ſouth of Europe. It flies higher than the common ſwift, and, like that ſpecies, feeds on inſects.

CAYENNENSIS. Blackiſh-violet; head black; collar two-cleft, band of the eyes, and the thighs white. Gmel. *Martinet à collier blanc*, Buff. *White collared ſwift.*

Native of Cayenne, where it builds its neſt in houſes. The neſt is large, long, and conic, the greateſt breadth five inches, and the length nine inches; it is compoſed of down well woven together, and the cavity divided obliquely down the middle by a partition which extends over that part of the neſt in which the eggs are diſpoſed. The length of this bird is five inches and a quarter.

SINENSIS. Brown, beneath reddiſh grey; crown pale rufous; eye-brows brown; chin and eye-lids white. Gmel. *Grand martinet de la Chine*, Sonner. *Chineſe ſwift.*

Inhabits China; length eleven inches and a half; bill, irides, and legs blue-grey.

HIRZHOLMEN, or HERTZHOLM, in *Geography*, three ſmall iſlands of Denmark, lying in the Cattegat, chiefly inhabited by fiſhermen; 4 miles N.E. of Fladſtrand. N. lat. 57° 31'. E. long. 10° 24'.

HISCAR CHADUMAN, or *Hiſaree*, a town of Great Bucharia; 60 miles N.N.E. of Balk.

HISCHERE, two ſmall iſlands among the Hebrides. N. lat. 57° 37'. W. long. 7° 40'.

HISHOLT, a town of Sweden, in the province of Smaland; 20 miles S.E. of Helmſtadt.

HISINGEN, a ſmall iſland in the North ſea, ſituated near the coaſt of Sweden, at the mouth of the Gotha, about 16 miles long and ſix broad, containing ſeven pariſhes. The town of Gotheborg was firſt built on this iſland. N. lat. 57° 45'. E. long. 11° 48'.

HISMO, a town of Albania, at the mouth of a river; 16 miles N.N.E. of Durazzo.

HISPA, in *Entomology*, a genus of Coleoptera in the Linnæan ſyſtem, having the antennæ cylindrical, approximate at the baſe, and ſeated between the eyes; feelers fuſiform; thorax and wing-caſes often ſpinous, and uſually toothed at the apex.

The four ſpecies of the hiſpa tribe, known to Linnæus, were atra, teſtacea, ſanguinicollis, and mutica, the laſt of which was not however then conſidered as appertaining to that genus, being referred by Linnæus to the dermeſtes family, under the ſpecific name of clavicornis. Geoffroy deſcribes the ſpecies atra as a native of France, and this he places with his *crioceres*, the genus formed by that writer of the oblong chryſomelæ; but from which, on cloſe inſpection, the true hiſpæ will be found to differ rather conſiderably in the ſtructure of the antennæ, and ſome other leſs eſſential particulars. No material progreſs was made in the knowledge of the ſpecies compoſing the hiſpa genus till the time of Fabricius, that writer having deſcribed and brought together in one view, from the cabinets of Rohr, Boſc, Paykull, and Hunter, no leſs than 12 ſpecies, including the four already mentioned. In the firſt inſtance Fabricius included more, ſeveral new kinds being united by him with the true hiſpæ, which, on mature deliberation, he conceived it proper to ſeparate, and divide into two new genera; and thus it happens, that the *Ptilinus* and *Melaſis* of his laſt works are hiſpæ of the former. This obſervation will ſerve to explain, in an obvious manner, the cauſe of that diſcordance which prevails between the works laſt noticed, and the Gmelinian edition of the Syſtema Naturæ; the latter containing, under the genus hiſpa, a further number of Fabrician ſpecies, than the "Entomologiæ Syſtematicæ" of that author, or any of his later works, in which Ptilinus and Melaſis are conſidered ſeparately. Thunberg has added ſome new ſpecies to the hiſpæ tribe, and theſe augmentations have increaſed the number to nearly twenty ſpecies.

The genuine hiſpæ, according to Fabricius, have cylindrical antennæ; feelers equal, filiform, and thicker in the middle; jaws bifid, and lip horny and entire. *Ptilinus* has the antennæ flabelliform; feelers four, and ſomewhat equal: jaws ſhort and bifid; and the lip membranaceous and ſubemarginate. In *Melaſis* the antennæ are flabelliform, as in Ptilinus, but the feelers (four in number) are clavated, with the extreme joint ovate, and the lip membranaceous and entire.

Moſt of the hiſpa genus are natives of extra European climates; thoſe found in Europe occur in the winged ſtate on the leaves and roots of different kinds of graſs; their larvæ and transformations are unknown.

Species.

ATRA. Antennæ fuſiform; thorax and wing-caſes ſpinous. Linn. *Crioceris tota atra*, Geoff.

Found at the roots of graſs in Europe.

TESTACEA. Antennæ fuſiform; body teſtaceous; antennæ and eyes black. Linn.

An African ſpecies; ſpines on the thorax lateral, on the wing-caſes ſcattered, the whole black.

Bipustulata. Antennæ ſerrated; body hairy, and black; wing-caſes with a rufous ſpot at the baſe. Fabr.

Native of Italy.

Mutica. Antennæ hairy; body black; wing-caſes ſtriated. Linn.

Inhabits Europe.

Sanguinicollis. Antennæ fuſiform; thorax and baſe of the wing-caſes ſanguineous; wing-caſes ſerrated. Linn.

An American ſpecies; wing-caſes ſerrated at the tip with three elevated ſtriæ, and the intermediate ſpaces punctured.

Serrata. Antennæ fuſiform; body black; wing-caſes pale rufous, ſerrated and black at the tip. Fabr.

Native of Surinam; thorax black with rufous ſides; wing-caſes ſtriated.

Dentata. Antennæ fuſiform; body black; margin of the thorax yellow; wing-caſes ſerrated, with a yellow ſpot at the baſe, and a band in the middle. Fabr.

Head, with the antennæ black; thorax black except the ſides; breaſt and baſe of the abdomen yellow. Inhabits Cayenne.

Angulata. Antennæ fuſiform; body yellow; head, dorſal line on the thorax, and ſinuate margin of the wing-caſes black. Fabr.

Native of Cayenne. Head and antennæ black; wing-caſes grooved, truncated, and toothed at the tip; body beneath ferruginous.

Emarginata. Antennæ fuſiform; body black; wing-caſes with a rufous ſpot at the baſe, the tip bidentated. Fabr.

Size of the preceding; head rufous; eyes globular, and with the antennæ black; wing-caſes with three raiſed lines, tranſverſely grooved; body beneath paliſh; legs black; thighs pale at the baſe. Inhabits Surinam.

Serraticornis. Antennæ ſerrated, and compreſſed at the baſe; body black; margin of the thorax, and ſpot at the baſe of the wing-caſes yellow. Fabr.

Inhabits Surinam, and reſembles the laſt. The head is whitiſh; crown black; wing-caſes grooved, with a ſingle raiſed line in the middle, and three-toothed at the tip, the middle tooth larger, rounded, and ſerrated; breaſt and baſe of the thighs white.

Bidens. Ferruginous; thorax with a black lateral line; tip of each wing-caſe armed with a ſingle tooth. Fabr.

Size of the laſt; head ferruginous; eyes black; wing-caſes grooved with a double row of dots between each furrow. Native of Surinam.

Nigricornis. Glabrous and ſcarlet; antennæ black. Fabr.

Native of the Cape of Good Hope.

Bihamata. Unarmed, black, ſpotted with red; wing-caſes truncated and hooked. Gmel.

Oblong, depreſſed, and inhabits India.

Cornuta. Entirely black; anterior and poſterior part of the thorax ſpinous; wing-caſes with longitudinal raiſed lines. Thunb.

Inhabits Sweden.

Capensis. Pitchy and hiſpid; thorax with a palmated ſpine. Thunb.

Found at the Cape of Good Hope.

Scabra. Entirely black; thorax and wing-caſes with a ſerrated fringe at the edge. Thunb.

Inhabits Sweden.

Serratula. Brown; antennæ ſerrated; wing-caſes ſtriated. Thunb.

Inhabits Upſal.

HISPALIS, Seville, in *Ancient Geography*, a town of Hiſpania, on the Bœtis, which was one of the moſt conſiderable towns in Bœtica. This city was ancient even in the time of Strabo, Pomponius Mela, Pliny, and Ptolemy, all of whom have mentioned it. Its foundation has been attributed to Hercules, to Bacchus, to the Hebrews, the Chaldeans, and the Phœnicians. When it became a Roman colony, it was much frequented on account of its commerce. It had the ſurname of Romulenſis and the title of Conventus. The changing of the name Hiſpalis, which ſome aſcribe to a prince of that name, but which is more probably derived from Spila, or Spala, a Phœnician word ſignifying a plain, or verdant country, into that of Colonia Romula, which it bears on its medals, is aſcribed to Julius Cæſar by Iſidore. Julius Cæſar, according to him, founded Hiſpalis; and from his name, joined to that of Rome, it was denominated Julia Romula. Many of the medals of this town exhibit traces of the baſeſt adulation with regard to Auguſtus; as his head is adorned with the attributes of the ſovereign of univerſal nature. Thoſe of Julius are of a ſimilar kind. On ſome Tiberius appears on one ſide, and on the other Germanicus and Druſus, whom he had adopted. See Seville.

HISPANIA, in *Ancient Geography*, an extenſive country, forming a kind of peninſula in the S.W. of Europe, and comprehending Hiſpania Tarragonnenſis, Luſitania, and Bœtica. It lay between 36° and 43° 46′ 37″ N. lat., and between 8° and 21° E. long. from Ferro. It was bounded on the N. by the bay of Biſcay and the Pyrenean mountains; on the E. and S. by the Mediterranean ſea; and on the W. by the Atlantic ocean. The greateſt breadth of this peninſula, from N. to S., is 550 miles, and its length 660 on the parallel of 42° N. lat. Spain, or a conſiderable part of it, was anciently called *Iberia*, (which ſee,) and *Celtiberia*, (which ſee,) from the Celtæ and Iberi, two tribes of barbarians ſettled on the banks of the Ebro (ſee Celtiberians); Heſperia, from its ſituation, being the weſtern province of the Roman empire, of Europe, and of the Continent; and alſo Hiſpania, probably from the oriental שפן, "Span," or "Sphan," concerning the meaning of which there is ſome difference of opinion. Bochart ſays that Span ſignifies a rabbit, and that this name was given to the country becauſe it was found to abound with theſe animals. Others, however, allege, that the proper ſignification of the oriental Span is ſomething concealed, or far from view; and ſuch, it is alleged, was the ſituation of Hiſpania with regard to the Phœnicians. Moreover, as the northern region was remote and concealed with regard to the ſouth, Span was uſed to denote the north. This appellation, it is ſaid, was given to it by the Phœnicians, as a remote or concealed country with reſpect to the farther extremity of the Mediterranean; and as they approached it along the coaſt of Africa and towards the ſtrait, they alſo might juſtly call it, with regard to themſelves, the northern country. Before the Carthaginians made any conqueſts in Spain, the country muſt have been divided into various petty independent kingdoms; and during this early period, the Phœnicians, who were probably the firſt people who came hither by ſea, planted ſeveral colonies along the ſouthern coaſts, in Turditania, a diſtrict of Bœtica; and afterwards ſome Grecian adventurers from Marſeilles croſſed the gulf of Lyons, and ſettled near the N.E. extremity of the country. After the Carthaginians had ſubjected it to their dominion, it was partitioned into provinces, the number of which cannot now be aſcertained. However, they eſtabliſhed colonies on the ſouth coaſt, E. of the ſtrait of Gibraltar. The firſt diviſion which the Romans made of that part which they reduced, was into Hiſpania Citerior and Hiſpania Ulterior, which were governed ſometimes by prætors, and ſometimes by proconſuls. This diviſion took place, as Livy informs us, immediately after the concluſion of the ſecond Punic war. In the beginning of the Macedonian war, the two provinces were united; but they were again ſeparated in the conſulate of Q. Ælius Pætus and M. Junius Pennus. This laſt diſtribution of Spain continued till the reign of Auguſtus, who divided Hiſpania Ulterior into the two provinces of Bœtica and Luſitania, and affixed the name of Provincia Tarraconenſis to Hiſpania Citerior. This latter province, ſo called from its principal city, comprehended nearly three-fourths of modern Spain, and was ſeparated from Bœtica and Luſitania by an imaginary line ſuppoſed to extend from the gulf of Carthagena to the conflux of the Agueda and Douro, on the confines of Portugal. Bœtica, ſo called from the river Bœtis, was a ſmall province along the coaſt, on either ſide of Fretum Herculeum, from the gulf of Carthagena to the mouth of the Anas; and, in general, included the provinces now called Granada and Andaluſia. The diviſion, introduced by Auguſtus, remained as long as the Romans had any power in Spain. (See BŒTICA, LUSITANIA, and TARRACONENSIS.) The moſt noted rivers in Hiſpania were the Minius or Minho, Lethe or Lima, Durius or Douro, Tagus or Tajo, Anas or Guadiana, Bœtis or Tarteſſus or Guadalquivir, Singulis or Xenil, Terebus or Tader or Segura, Sucro or Xucar, Iberus or Ebro, Sicoris or Segre, Rubricatus or Lobregat, Sambroca or Ter; and its principal bays were the Sucronenſis ſinus or bay of Valencia, Illicitanus ſinus or bay of Alicant, Virgitanus ſinus or gulf of Carthagena, Gaditanus ſinus or bay of Gibraltar, Magnus Portus or bay of Corunna, commonly called the Groine, and Cantabricus ſinus or bay of Biſcay. Its chief mountains, capes and promontories, as well as towns, will appear under their proper heads, and under the title SPAIN.

As to the hiſtory of Hiſpania, it is hardly neceſſary to obſerve, that the Spaniards trace their origin from Tubal, the fifth ſon of Japhet, who is ſaid to have reigned in Spain from the year of the flood 143 to 258; and that from him they pretend to give a ſeries of monarchs down to three Geryons, who were killed by the Egyptian Hercules, and of ſome other invaders from Libya, as far as the time in which they allow the Celtes to have made their firſt entrance into Spain, in the year of the flood 1350. According to this fabulous account, Spain had been a monarchy, and had laſted 1226 years before the arrival of the Celtes. But diſmiſſing theſe fables, we ſhall begin the hiſtory of Spain with the arrival of the Celtes in this country, which is ſaid to have taken place in the year 1649 B.C. Theſe people croſſed the Pyrenees, and after a conteſt with the Iberians, as the native Spaniards were called, formed an alliance with them, and by intermarriage they became one people, under the name of Celtiberians. After an interval of about 20 years, the Rhodians came hither by ſea, and ſettling at the foot of the Pyrenean mountains, built a city, to which they gave their name; but which has long ſince been reduced to ruins. At this time the mines of Spain yielded great quantities of ſilver; acccordingly Ariſtotle informs us, that the Phœnicians viſited this country in the 9th century B.C. to exchange their naval commodities for this metal; and they are ſuppoſed to have ſettled in Bœtica and to have built ſeveral cities. Euſebius, in his Chronicon, ſub Ann ante Chr. 840, mentions ſeveral nations, beſides Tyrians, Egyptians, and Phœnicians, who made ſettlements in Spain; ſuch were the Mileſians, Cariſti or Carians, Leſbians, and Phocians. Nebuchadnezzar alſo, after the deſtruction of Jeruſalem and conqueſt of Judea, is ſaid, by Joſephus and Strabo, to have reigned in Spain nine years; at the end of which period, it is affirmed, that he abandoned it to the Carthaginians. (See CARTHAGINIANS.) It is probable, however, that moſt, if not all, of theſe nations, contented themſelves with maritime ſituations, for the advantage of commerce and the command of the ſea; and that they penetrated but a little way into the country; while the natives might enjoy their own laws and government, and be glad to trade and barter with them, and feel little ſolicitude who were maſters of the ſea-coaſts and parts adjacent, provided they could obtain the benefits of commerce with them, and enjoy the produce of their own lands, in peace and tranquillity. The Carthaginians, after many ſevere conteſts with the Romans, were diſpoſſeſſed by the Scipios, and as ſoon as they became maſters of this rich and productive country, or at leaſt of a conſiderable part of it, they directed their chief attention to its valuable mines, particularly thoſe of ſilver and gold; and it is ſaid, that Scipio, upon his return to Rome, carried with him 14,342 pounds of ſilver, beſides an immenſe quantity of coin, cloaths, corn, arms, and other valuable effects. L. Lentulus is ſaid to have brought away 44,000 pounds of ſilver, and 2550 pounds of gold, beſides the money which he diſtributed among his military followers. L. Manlius carried with him 1200 pounds of ſilver, and about 30 of gold. Corn. Lentulus, after having governed the Hither Spain two years, poſſeſſed himſelf of 1515 pounds of gold, and of ſilver 2000, beſides 34,550 denarii in coin, whilſt his colleague brought from Further Spain 50,000 pounds of ſilver. It was this prodigious wealth, ſupplied by the country, which was ſtill thought to be unexhauſted, that invited the northern nations many centuries after, to make incurſions, and to drive the Romans out of it. (See GOTHS and VANDALS.) Learning, and the liberal arts, if Strabo (lib. iii.) may be credited, began to flouriſh at an early period in this country; for he tells us, that the Turdetani, a people of Bœtica, were very celebrated in this reſpect, and were poſſeſſed of a vaſt number of volumes of great antiquity, and codes of laws written in verſe, and other pieces of poetry of very ancient date. Their language was moſt probably the old Celtic; but it underwent many changes by means of the different nations who ſubdued this country, and particularly by the influence of the Romans. Upon the irruption of the Goths and Vandals, it degenerated from its purity. It is evident, if we may depend upon the authority of Strabo, that the ancient Spaniards muſt have admitted writing many ages before the Gauls, Germans, or any others of Celtic extraction. From the ſettlement of the Romans, however, their letters, as well as language, extirpated all the reſt, and continued in uſe till their expulſion, when the old Gothic took place. In the educating of their youth, they took great pains to inſpire them with a love of liberty, and a contempt of death. This country, by reaſon of its excellent ſituation for commerce, and the abundance of commodities, particularly ſilver, which it furniſhed, invited thither all the trading nations of Europe, Aſia, and Africa; nor is there, perhaps, any kingdom, that ever paſſed under ſo many different maſters. Egyptians, Phœnicians, Tyrians, Carthaginians, Romans, Gauls, Germans, Goths, Vandals, Moors, and many others had their ſettlements in it, and thus promoted its trade and navigation, and founded in it great and opulent cities. With regard to the character of the ancient Spaniards, we may obſerve, that they poſſeſſed all the virtues of the old Celtic nation; and inherited fewer of their vices than any others of their deſcendants; they were brave, magnanimous, and hoſpitable to a high degree; and ſo famed for their fidelity, that even after being conquered by the Romans, ſeveral of theſe emperors preferred them to other nations, to be their body-guard. They were ſober, frugal, and patient under hardſhips; jealous of their honour, and till a few centuries paſt, rather deſirous to preſerve their own territories, than to ſeek new ſettlements abroad. See Spain.

HISPANICUM Viride, *Spaniſh green*, a name given by ſome to verdigris.

HISPANIOLA, in *Geography*. See *St.* Domingo.

HISPID Leaf, among *Botaniſts*. See Leaf.

Hispid *Stalk*. See Stalk.

HISSAR, in *Geography*, a circar of Hindooſtan, in the Soubah of Delhi, bounded on the N. by Sirhind, on the E. by Ballogiſtan, on the S. by Nardeck, and on the W. by Moultan.

Hissar *Ferozeh*, the capital of the above circar, near the river Surſooty, which traverſes the circar from N. to S.; 75 miles W. of Delhi. N. lat. 28° 40′. E. long. 76° 4′.

HISSING, an appellation given by grammarians to the three conſonants, *s*, *x*, and *z*.

HISTER, an Etrurian word which implied a ſtage-player, and during the peſtilence at Rome, 364 years B.C. actors were ſent for from Etruria, to try to appeaſe the gods by public exhibitions; hence the Roman actors afterwards acquired the name of hiſtriones. Livy, lib. vii. cap. 2.

Hister, in *Entomology*, a genus of Coleoptera, the antennæ of which are clavated, and the club ſolid, with the laſt joint compreſſed and decurved; head retractile within the body; mouth forcipated; wing-caſes ſhorter than the body, and truncated; anterior ſhanks toothed; hind ſhanks ſpinous. In the larvæ, as well as the adult, or winged ſtate, the inſects of this family are frequently met with in the dung of horſes, cows, and other animals.

Species.

Major. Black; wing-caſes ſomewhat ſtriated; thorax ciliated at the edges. Linn.

Native of Africa, and differs only in ſize from the Linnæan hiſter maximus. The hairs at the edges of the thorax ferruginous.

Unicolor. Black; wing-caſes obliquely ſtriated. Linn. Donov. Br. Inſ.

Inhabits Europe and America.

Glabratus. Black and poliſhed; wing-caſes ſomewhat ſtriated, punctured, and as long as the abdomen. Fabr.

Jaws advanced, arched, acute and armed with a tooth in the middle; antennæ black; wing-caſes retuſe behind.

Semipunctatus. Black, poliſhed, braſſy; wing-caſes obliquely ſtriated at the baſe, and obſoletely punctured at the tip. Herbſt.

Native of Barbary; head and thorax with a braſſy hue; all the ſhanks compreſſed and ſerrated. Found alſo by Paykull in Sweden; and by Marſham in Britain.

Scaber. Black, and ſcabrous, with raiſed dots. Fabr. Inhabits Spain.

Cyaneus. Thorax braſſy; wing-caſes blueiſh. Oliv.

A New Holland ſpecies; the head duſky; thorax ſomewhat punctured at the margin; wing-caſes poliſhed, abbreviated, and obliquely ſtriated at the baſe; legs black.

Planus. Plane opaque and black; wing-caſes very ſmooth. Fueſly, &c.

Native of the ſouth of Europe.

Brunneus. Ferruginous; wing-caſes ſub-ſtriated. Oliv.

Inhabits Sweden; and alſo Britain (Donov. Br. Inſ.)

Pygmæus. Deep black; wing-caſes very ſmooth. Linn.

Inhabits Europe.

Depressus. Depreſſed, black, and poliſhed; wing-caſes ſomewhat ſtriated. Oliv. *Hiſter compreſſus*, Herbſt.

Found under the bark of birch-trees in Germany (Panz), and in Britain (Donov. Br. Inſ.).

4-Dentatus. Depreſſed, black, and poliſhed; wing-caſes with a ſingle ſtripe; jaws exſerted, and longer than the head. Oliv.

Native of North America.

Sulcatus. Black; thorax with five raiſed lines, wing-caſes three; the interſtices punctured. Oliv.

Inhabits Europe. Small; the head rather prominent each ſide above the eyes; anterior legs toothed.

Duodecim striatus. Black, poliſhed; wing-caſes with twelve ſtriæ. Marſh, &c.

Found in France (Vill.), in Sweden (Paykull), and in England (Donov. Br. Inſ.).

Violaceus. Violaceous; thorax entirely dotted; wing-caſes with five recurved ſtriæ at the baſe, tip dotted. Marſh.

Inhabits Britain. Length two lines and three quarters.

Virescens. Green; thorax entirely dotted; wing-caſes with four recurved ſtriæ, the tip dotted. Marſh.

Perhaps a ſmall variety of hiſter violaceus; the length one line and a half.

Piceus. Entirely pitchy; wing-caſes length of the abdomen, with four ſtriæ. Marſh.

Native of Britain; length one line.

Oblongus. Depreſſed, black, and poliſhed; wing-caſes ſtriated; body oblong. Fabr.

Inhabits Sweden, under the bark of the roots of the aſh. Afzelius. Differs from H. ſulcatus in the more oblong form of the body.

Abbreviatus. Black; wing-caſes with crenated ſtriæ, the inner ones abbreviated.

Native of America. Size of H. pygmæus.

Sinuatus. Black, with a ſinuate rufous ſpot in the middle of the wing-caſes. Fabr. *Hiſter reniformis*, Oliv.

Wing-caſes ſtriated at the inner edge, and ſmooth at the ſuture. Inhabits Germany.

Cruciatus. Black; wing-caſes teſtaceous, with a common black croſs. Fabr.

Native of Barbary. Wing-caſes ſmooth and poliſhed, the ſuture and ſpot croſſing it in the middle black; hind margin black. Fabr.

2-Maculatus. Black; wing-caſes ſtriated with a red ſpot behind. Donov. Br. Inſ.

Inhabits Europe.

4-Maculatus. Black; wing-caſes with two red ſpots on each. Oliv.

Native of Germany (Panz), alſo found in Britain (Donov. Br. Inſ.)

Æneus. Braſſy; wing-caſes ſtriated at the baſe, and punctured at the tip. Fabr. *Attelabus cupreus*, Fourcr.

Inhabits Sweden (Paykull), and Britain (Donov. Br. Inſ.)

Detritus. Black, poliſhed; wing-caſes pitchy, with duſky tip. Oliv.

Wing-caſes with four oblique ſtriæ at the baſe, the tip punctured. A New Holland ſpecies.

Picipes. Oblong and black; wing-caſes very ſhort; antennæ and legs pitchy. Oliv.

Inhabits Germany. Wing-caſes abbreviated and not ſtriated.

Cæsus. Black; thorax with a tranſverſe groove; antennæ ferruginous. Herbſt.

Native of Germany.

Parvus. Uniform black; wing-caſes with ſix ſtriæ, two inner ſtriæ abbreviated. Marſh.

A new ſpecies found in Britain.

Inæqualis. Black, poliſhed; wing-caſes ſtriated exteriorly, towards the ſuture ſmooth; jaws longer than the head. Fabr. Supp. *Hiſter lævis*, Roſſi.

Inhabits Germany, and alſo England. Donov. Br. Inſ.

Quadriguttatus. Black, poliſhed, and very ſmooth, wing-caſes dotted, with two pale yellowiſh ſpots on each. Fabr.

Lately diſcovered in Pembrokeſhire. Donov. Tour Wales. Spots on the wing-caſes whitiſh or reddiſh.

Bipustulatus. Black, with a red ſpot in the middle of each wing-caſe; anterior ſhanks tridentated. Schrank, &c. *Hiſter purpuraſcens*, Paykull.

Length two lines and a half; the ſpecies inhabits Sweden (Paykull), Germany (Panz), and Bohemia (Preys).

Obſ. This inſect muſt not be confounded with the hiſter bipuſtulatus of the Fabrician Suppl. a ſpecies twice the ſize of bimaculatus, and which inhabits India. The colour of this laſt-mentioned kind is deep black; wing-caſes ſtriated, with a red dot in the middle, and the head retuſe.

Impressus. Deep black and poliſhed; wing-caſes ſtriated; head with two impreſſed dots.

Size of hiſter unicolor, but diſtinct in having the two impreſſed dots in front of the head; all the ſhanks ſerrated. Inhabits Kiel.

Pulchellus. Braſſy-green; wing-caſes ſtriated, with a rufous dot behind; vent coppery. Fabr. Suppl.

Small, and inhabits Tranquebar; head and thorax braſſy-green, poliſhed and immaculate; vent prominent.

Erythropterus. Deep black and poliſhed; wing-caſes ſtriated, with the tip rufous. Oliv.

Native of Tranquebar. Allied to hiſter bipuſtulatus.

Perpusillus. Rufous brown, and dotted. Marſh.

Length one-third of a line, and inhabits Britain. The form convex, dots not conſpicuous without a lens.

Minimus. Black, very glabrous and poliſhed. Marſh.

Scarcely ſo large as the laſt; country the ſame.

HISTIÆA, in *Ancient Geography*, *Orio*, a maritime town of the iſland of Eubœa, under mount Telethrius, near the mouth of the river Callas. It was ſituated on a rock, and therefore called Oreum.

HISTIÆOTIS, a country of Theſſaly, ſituated under mount Oſſa and mount Olympus, the latter lying to the N. and the former to the S. This country was alſo called the "Doride," from Dorus, the ſon of Deucalion, under whoſe reign it was inhabited by a Pelaſgic nation, which was driven from it by the Cadmæans. But, in proceſs of time, the Perrhæbi, having deſtroyed the town of Hiſtiæa in the iſle of Eubœa, cauſed its inhabitants to remove to the continent, who gave to the territory which they occupied, the name of Eſtiæotide, according to Strabo, but according to Herodotus, Hiſtiæotide.—Alſo, a ſmall country in the iſland of Eubœa, of which Hiſtiæa was the capital, and which extended to Artemiſium, towards the Canæum promontorium, at a little diſtance from Thermopylæ.

HISTIODROMIA, the art of ſailing, or of conducting veſſels on the ſea.

The word is compounded of ἱϛιον, *ſail*, of ἱϛος, the *maſt of a ſhip*, which comes from ἱϛημι, *ſto*, *I ſtand*, and δρομος, *courſe*, of δρεμω, *I run*.

Hiſtiodromia is the ſame with what we otherwiſe call *navigation*.

Hiſtiodromia turns on four points, any two whereof being given, the other two are eaſily found from them, by the loxodromic tables, ſines, tangents, ſecants, Mercator's charts, &c. Theſe four things are, the difference of latitude, difference of longitude, the courſe, and the diſtance run.

HISTORICAL, ſomething that relates to hiſtory.

Historical *Column*. See Column, *hiſtorical*.

Historical *Muſic*, *muſica hiſtorica*, is that branch of muſic which treats of the origin and invention of muſic, of modes, of notes, inſtruments, &c. as alſo the lives and writing of celebrated authors on that ſubject.

Historical *Painting*. The derivation of the word hiſtorical, at once points out the proper application of it as deſcriptive of one particular application of the art of painting, (*i. e.*) the repeſentation of events which have occurred, and which are fit ſubjects for the pen of the hiſtorian; but common cuſtom applies it in a more extended, though very improper, ſenſe, as deſcriptive, not only of what is ſtrictly hiſtoric, but what is alſo of the *poetic* or dramatic nature: and divides the laſt into four branches only, which are Hiſtorical, Portraiture, Landſcape, and Still-life. See Painting.

Historical *Style*. See Style.

HISTORIOGRAPHER, compoſed of ἱϛορια, *hiſtory*, and γραφω, *I write*, a profeſſed hiſtorian, or writer of hiſtory; or a perſon who applies himſelf peculiarly to it.

The province of the hiſtorian is important and extenſive; and he, therefore, ought to be endowed with great and uncommon qualifications. As it is the office of the hiſtorian to record truth for the inſtruction of mankind, impartiality, fidelity, gravity, dignity, and accuracy are indiſpenſible and eſſential qualities belonging to a perſon who undertakes this office. He muſt neither be a panegyriſt nor a ſatyriſt. He muſt not enter into faction, nor give ſcope to affection: but contemplating paſt events and characters with a cool and diſpaſſionate eye, muſt preſent to his readers a faithful copy of human nature. Cicero has given us the whole art of compoſing hiſtory in a very compendious and comprehenſive manner. No one is ignorant, ſays he, that the firſt law in writing hiſtory is, not to dare to ſay any thing that is falſe, and the next, not to be afraid to ſpeak the truth; that on the one hand there be no ſuſpicion of affection, nor of prejudice on the other. Theſe fundamental principles are generally known: but the ſuperſtructure conſiſts partly in things and partly in the ſtyle or language. The former require an order of time, and deſcription of places. And becauſe in great and memorable events, we are deſirous to know firſt their cauſes, then the actions themſelves, and laſtly their conſequences; the hiſtorian ſhould take notice of the ſprings or motives that occaſioned them; and in mentioning the facts themſelves ſhould not only relate what was done or ſaid, but likewiſe in what manner; and in treating of their conſequences, ſhew whether they were the effects of chance, wiſdom, or prudence. Nor ſhould he only recite the actions of great and eminent perſons, but likewiſe deſcribe their characters. The ſtyle ought to be fluent, ſmooth, and even, free from that harſhneſs and poignancy which are uſual at the bar. De Orat. lib. ii. cap. 15.

According to this plan, in the obſervance of which few are ſuperior to Tacitus, an hiſtorian ſhould be not only a man of probity, but free from all paſſion and bias: he ought to unite the ſteadineſs of a philoſopher with the vivacity of a poet or orator. He ſhould alſo poſſeſs a good judgment, to direct him what is proper to be ſaid, and what to be omitted, and to treat every thing in a manner ſuited to its importance. This faculty will enable him to ſelect ſuch facts as are of the greateſt moment; to repreſent them in connection with their cauſes, to trace them to their conſequences and effects, and to unfold them in clear and diſtinct order. Wiſdom is the great end of hiſtory. It is deſigned to ſupply the want of experience; and though it does not enforce its inſtructions with the ſame authority, yet it furniſhes a greater variety of inſtructions than it is poſſible for experience to afford in the longeſt life. Its object is to enlarge our views of the human character, and to give full exerciſe to our judgment on human affairs. It muſt not, therefore, be a tale calculated merely to pleaſe, and addreſſed to the fancy. Gravity and dignity are eſſential characteriſtics of hiſtory; no light ornaments are to be employed, no ſlippery of ſtyle, no quaintneſs of wit. But the writer muſt ſuſtain the character of a wiſe man, writing for the inſtruction of poſterity; one who has ſtudied to inform himſelf well, who has pondered his ſubject with care, and addreſſes himſelf to our judgment rather than to our imagination. At the ſame time, hiſtorical writing is by no means inconſiſtent with ornamented and ſpirited narration. It admits of much high ornament and elegance; but the ornaments muſt be always conſiſtent with dignity; they ſhould not appear to be ſought after; but to riſe naturally from a mind animated by the events which it records.

Induſtry is likewiſe an eſſential quality of an accurate hiſtorian. Thucydides in his Hiſtory of the Peloponneſian War, and Polybius in his Hiſtory of the Roman Affairs, took great pains in procuring neceſſary information. An hiſtorian ſhould be always actuated by a love of truth; to this purpoſe Polybius obſerves, that a good man ought to love his friends and his country, and manifeſt a ſimilar diſpoſition with their's, towards both their friends and enemies. But when he takes upon him the character of an hiſtorian, they muſt all be forgot. In hiſtory, all perſonal conſiderations ſhould be laid aſide, and regard be paid only to their actions. Lib. i. p. 13. See alſo Lucian, De Hiſt. Scrib. p. 366.

Suetonius, Thucydides, and Polybius are much commended for the integrity and ingenuity of their temper. Cicero obſerves, (ubi ſupra,) that hiſtory is converſant in great and memorable actions; and therefore a hiſtorian ſhould always keep poſterity in view, and relate nothing which may not on ſome account or other be worth the notice of future ages. Thoſe who deſcend to trivial and minute matters, which are below the dignity of hiſtory, ſhould be deemed journaliſts rather than hiſtorians. Whenever a prudent hiſtorian thinks it neceſſary or convenient to take notice of things that are in themſelves leſs conſiderable, he either does it with brevity, or for ſome apparent reaſon, or accounts for it by ſome juſt apology. As it is the province of a hiſtorian to acquaint us with facts, he ſhould give a narration or deſcription not only of the facts, or actions themſelves, but likewiſe of ſuch things as are neceſſarily connected with them, *viz.* the characters of perſons, the circumſtances of time and place, in reference to which chronology and geography have been called the two eyes of hiſtory; the views and deſign of the principal actors, and the iſſue and event of the actions which he deſcribes. The proper diſpoſition of theſe various particulars depends on the ſkill and prudence of the writer.

The drawing of characters, ſays Blair, is one of the moſt ſplendid, and at the ſame time, one of the moſt difficult ornaments of hiſtorical compoſition. For characters are generally conſidered as profeſſed exhibitions of fine writing: and an hiſtorian, who ſeeks to ſhine in them, is frequently in danger of carrying refinement to exceſs, from a deſire of appearing very profound and penetrating. He brings together ſo many contraſts, and ſubtle oppoſitions of qualities, that we are rather dazzled with ſparkling expreſſions, than entertained with any clear conception of a human character. A writer who would characteriſe in an inſtructive and maſterly manner, ſhould be ſimple in his ſtyle, and ſhould avoid all quaintneſs and affectation: at the ſame time not contenting himſelf with giving general outlines only, but deſcending into thoſe peculiarities which mark a character in its moſt ſtrong and diſtinctive features. The Greek hiſtorians ſometimes give elogiums, but rarely draw full and profeſſed characters. The two ancient authors, who have laboured this part of hiſtorical compoſition moſt, are Salluſt and Tacitus. In tracing actions and events which the hiſtorian records to their ſprings, and alſo to their effects and conſequences, two qualifications are neceſſary in order to his doing this with ſucceſs: *viz.* a thorough acquaintance with human nature, and political knowledge, or acquaintance with government. The former is neceſſary to account for the conduct of individuals, and to give juſt views of their character: the latter to account for the revolutions of government, and the operations of political cauſes in public affairs. Both muſt concur in order to form a completely inſtructive hiſtorian. With regard to the latter, the materials and means of information, poſſeſſed by the ancient hiſtorians, were more circumſcribed and limited than thoſe of the moderns: far leſs communication and intercourſe ſubſiſted between neighbouring ſtates, by the intervention of eſtabliſhed ports, or of ambaſſadors reſident at diſtant courts. Beſides, they wrote for their own countrymen only; they had no idea of writing for the inſtruction of foreigners, whom they deſpiſed, or of the world in general; and hence they are leſs attentive to convey all that knowledge with regard to domeſtic policy, which we, in diſtant times, would deſire to have learned from them. Perhaps alſo, though in ancient ages men were more abundantly animated with the love of liberty, yet the full extent of the influence of government, and of political cauſes, was not then ſo thoroughly ſcrutinized, as it has been in modern times; when a longer experience of all the different modes of government has rendered men more enlightened and intelligent, with reſpect to public affairs. To the reaſons now ſtated it is owing, that though the ancient hiſtorians ſet before us the particular facts which they relate, in a very beautiful and diſtinct manner, yet ſometimes they do not give us a clear view of all the political cauſes which affected the ſituation of affairs, of which they treat. From the Greek hiſtorians, we are able to form but an imperfect notion of the ſtrength, the wealth, and the revenues of the different Grecian ſtates; of the cauſes of ſeveral of thoſe revolutions that happened in their government; or of their ſeparate connections and interfering intereſts. In writing the hiſtory of the Romans, Livy had ſurely the moſt ample field for diſplaying political knowledge, concerning the riſe of their greatneſs, and the advantages or defects of their government. Yet the inſtruction, in theſe important articles, which he affords, is not conſiderable. He is indeed an elegant writer, and a beautiful relater of facts; but by no means diſtinguiſhed for profoundneſs or penetration. Salluſt, when writing the hiſtory of a conſpiracy againſt the government, which ought to have been altogether a political hiſtory, has evidently attended more to the elegance of narration, and the painting of characters, than to the unfolding ſecret cauſes and ſprings. Inſtead of that complete information, which we might naturally have expected from him of the ſtate of parties at Rome, and of that particular conjuncture of affairs, which enabled ſo deſperate a profligate as Cataline to become ſo formidable to the government, he has given us little more than a general declamatory account of the luxury and corruption of manners in that age, compared with the ſimplicity of former times. It is not meant, however, to cenſure all the ancient hiſtorians as defective in political information. No hiſtorians can be more inſtructive than Thucydides, Polybius, and Tacitus.

Thucydides is grave, intelligent, and judicious; always attentive to give very exact information concerning every operation which he relates; and to ſhew the advantages and diſadvantages of every plan that was propoſed, and every meaſure that was purſued. Polybius excels in comprehenſive political views, in penetration into great ſyſtems, and in his profound and diſtinct knowledge of all military affairs. Tacitus is eminent for his knowledge of the human heart; is ſentimental and refined in a high degree; conveys much inſtruction with reſpect to political matters, but more with reſpect to human nature.

The hiſtorian ſhould alſo introduce pertinent and uſeful reflections in the courſe of his narrations. The beſt hiſtorians, ſuch as Salluſt and Livy, &c. have allowed themſelves this liberty. But the remarks or reflections of the hiſtorian ſhould be brief, and differ in this reſpect from the encomiums or declamations of the orator. When obſervations are to be made concerning human nature in general, or the peculiarities of certain characters, if the hiſtorian can artfully incorporate ſuch obſervations with his narrative, they will have a better effect than when they are delivered as formal detached reflections. To this purpoſe we may obſerve, that, in the life of Agricola, Tacitus, ſpeaking of Domitian's treatment of Agricola, makes this reflection: "Proprium humani ingenii eſt, odiſſe quem læſeris;" *i. e.* "It belongs to human nature, to hate the man whom you have injured." This obſervation is juſt and philoſophical; but the form, in which it ſtands, is abſtract and philoſophical. A thought of the ſame kind has a fine effect elſewhere in the ſame hiſtorian, when ſpeaking of the jealouſies which Germanicus knew to be entertained againſt him by Livia and Tiberius: "Anxius," ſays he, "occultis in ſe patrui aviæque odiis, quorum cauſæ acriores quia iniquæ:" *i. e.* "Uneaſy in his mind, on account of the concealed hatred entertained againſt him by his uncle and grandmother, which was the more bitter, becauſe the cauſe of it was unjuſt." This profound moral obſervation is introduced, without the appearance of making it in form, as a part of the narration, in aſſigning a reaſon for the anxiety of Germanicus. Tacitus excels in a talent of intermixing after this manner with the courſe of his narrative many ſtriking ſentiments and uſeful obſervations. For a more particular account of the diſtinguiſhing properties of hiſtorical narration; ſee NARRATION.

Hiſtorians have enlivened their narration, by introducing, on various occaſions, ſpeeches, which are either oblique or direct; the former recited by the hiſtorian in his own perſon. Of this kind is that of Hannibal in Juſtin, by which he endeavours to perſuade king Antiochus to carry the heat of war againſt the Romans into Italy. (Lib. xxxi. cap. 5.) And in the latter, the perſon himſelf is introduced as addreſſing his audience; and therefore the words, as well as the ſenſe, are to be accommodated to his character. Such is the ſpeech of Eumenes, one of Alexander's captains and ſucceſſors, addreſſed to his ſoldiers, when they had traiterouſly bound him in chains, in order to deliver him up to his enemy Antigonus. Juſtin, lib. xiv. cap. 4.

With regard to direct ſpeeches, there are few ancient hiſtorians who have not adopted them, though ſome of our critics will only admit thoſe which were really ſpoken by the perſons to whom they are aſcribed. The firſt hiſtorian who introduced complete and finiſhed ſpeeches into hiſtory, is ſaid to be Thucydides, thoſe of Herodotus being but ſhort and imperfect. (See ORATION.) Letters are ſometimes met with in hiſtories, as well as ſpeeches: ſuch are thoſe of Alexander to Darius in Q. Curtius, lib. iv. cap. 1. and thoſe of Tiberius and Druſus in Tacitus, Ann. lib. i. 73. iii. 53. 59. Digreſſions alſo, when they are neither too long nor too frequent, may be ſo managed by the hiſtorian, as to afford the reader both delight and profit. (See DIGRESSION.) With regard to the order of hiſtory, the hiſtorian ſhould ſo form his introduction, as to give ſome general view of the ſubject, to engage the reader's attention, and to poſſeſs him with a candid opinion of himſelf and of his performance; this ſhould be natural, and proportioned to the extent of the work. Such are thoſe of Livy, Herodotus, Thucydides, Tacitus, and others. But order is to be principally regarded in the body of the work: for this purpoſe the hiſtoriographer ſhould either attend to the time in a chronological ſeries, which is beſt in biography, after the manner of Plutarch and Cornelius Nepos; in the hiſtory of particular ſtates, after Thucydides, Livy, and Tacitus, and ſometimes alſo in a general hiſtory; though in this latter caſe, the order of time cannot always be preſerved, and therefore the actions of each nation, when ſeveral ſtates are independent of each other, muſt neceſſarily be ſeparated, in order to prevent confuſion. This is the method adopted by Herodotus, Diodorus Siculus, and Juſtin.

There is one circumſtance that deſerves to be particularly mentioned, becauſe it deſerves the firſt attention of the intelligent and inſtructive hiſtorian; and this is, that in the conduct and management of his ſubject he ſhould give it as much unity as poſſible; in other words, his hiſtory ſhould not conſiſt of ſeparate unconnected parts merely, but ſhould be bound together by ſome connecting principle, which ſhall make the impreſſion on the mind of ſomething that is one, whole and entire. Whether pleaſure or inſtruction be the end ſought by the ſtudy of hiſtory, either of them is enjoyed to much greater advantage, when the mind has always before it the progreſs of ſome one great plan or ſyſtem of actions; when there is ſome point or centre to which we can refer the various parts related by the hiſtorian. Of all the ancient general hiſtorians, the one who had the moſt exact idea of this quality of hiſtorical compoſition, though, in other reſpects, not an elegant writer, was Polybius. In his third book he ſketches out his own plan; obſerving, that the ſubject of which he had undertaken to write is, throughout the whole of it, one action, one great ſpectacle; how, and by what cauſes, all the parts of the habitable world became ſubject to the Roman empire. "This action," ſays he, "is diſtinct in its beginning, determined in its duration, and clear in its final accompliſhment; therefore, I think it of uſe to give a general view before-hand, of the chief conſtituent parts which make up this whole." In another place, he congratulates himſelf on his good fortune, in having a ſubject for hiſtory, which allowed ſuch variety of parts to be united under one view; remarking, that before this period, the affairs of the world were ſcattered, and without connection; whereas, in the times of which he writes, all the great tranſactions of the world tended and verged to one point, and were capable of being conſidered as parts of one ſyſtem.

Thoſe who write the hiſtory of ſome particular great tranſaction, confining themſelves to one era, or one portion of the hiſtory of a nation, have ſuch great advantages for preſerving hiſtorical unity, that they are inexcuſable if they fail in it. Salluſt's hiſtories of the Catilinarian and

Jugurthine wars, Xenophon's Cyropædia, and his Retreat of the Ten-thouſand, are inſtances of particular hiſtories, where the unity of hiſtorical object is perfectly well maintained. Thucydides, otherwiſe a writer of great ſtrength and dignity, has failed much, in this article, in his hiſtory of the Peloponneſian war. On this account, he is ſeverely cenſured by one of the beſt critics of antiquity, Dionyſius of Halicarnaſſus. This critic is partial to Herodotus, whom, both for the choice and conduct of his ſubject, he prefers to the other hiſtorian. But we may obſerve, that Herodotus wrote to the imagination, and Thucydides writes to the underſtanding. He was a grave, reflecting man, well acquainted with human life; and the melancholy events and cataſtrophes which he records, but which Dionyſius finds fault with, are often both the moſt intereſting parts of his hiſtory, and the moſt improving to the heart. Indeed, the diſtribution of his ſubject, which, though not deficient in dignity, wants the gaiety and ſplendour of that of Herodotus, is faulty, and the critic's obſervations upon it are better founded, and his preference of Herodotus, in this reſpect, is not unjuſt. With regard to ſtyle, Dionyſius gives Thucydides the juſt praiſe of energy and brevity; but cenſures him, on many occaſions, not without reaſon, for harſh and obſcure expreſſion, deficient in ſmoothneſs and eaſe. The hiſtorian, however, muſt not neglect chronological order, with a view to render his narration agreeable. He muſt give a diſtinct account of the dates, and of the coincidence of facts. But he is not under the neceſſity of breaking off always in the middle of tranſactions, in order to inform us of what was happening elſewhere at the ſame time. He diſcovers no art if he cannot form ſome connection among the affairs which he relates, ſo as to introduce them in a proper train. He will ſoon tire the reader, if he goes on recording, in ſtrict chronological order, a multitude of ſeparate tranſactions, without any other connection beſides coincidence of event. Although the hiſtory of Herodotus be of greater compaſs than that of Thucydides, and comprehend a much greater variety of diſſimilar parts, he has been more fortunate in joining them together, and digeſting them into order. Hence he is a more pleaſing writer, and gives a ſtronger impreſſion of his ſubject; though, in judgment and accuracy, much inferior to Thucydides. He abounds, indeed, with digreſſions and epiſodes; but when theſe have any connection with the main ſubject, and are inſerted profeſſedly as epiſodes, the unity of the whole is leſs violated by them, than by a broken and ſcattered narration of the principal ſtory. Among the moderns, the preſident Thuanus has, by attempting to make the hiſtory of his own times too comprehenſive, fallen into the ſame error, of loading the reader with a great variety of unconnected facts, going on together in different parts of the world;—an hiſtorian otherwiſe of great probity, candour, and excellent underſtanding; but through the want of this unity, more tedious, and leſs intereſting than he otherwiſe would have been.

As hiſtory is a ſpecies of writing deſigned for the inſtruction of mankind, ſound morality ſhould always reign in it. Both in deſcribing characters, and in relating tranſactions, the author ſhould always ſhew himſelf to be on the ſide of virtue. To deliver moral inſtruction in a formal manner, falls not within his province; but both as a good man and as a good writer, it is expected, that he ſhould diſcover ſentiments of reſpect for virtue, and of indignation at flagrant vice. Neutrality and indifference, when occaſions of this kind occur, are inexcuſable; and indicate a culpable deficiency in ſenſibility and moral feeling. For the ſtyle of the hiſtorian, ſee STYLE.

So numerous and conſiderable are the qualifications neceſſary for an hiſtorian, that this province was formerly aſſigned by the eaſtern nations to a particular order of men; and both among the Greeks and Romans it was generally undertaken by perſons of figure, and ſuch as were eminent for learning, knowledge of the world, and other great abilities: and as it is of ſuch ſingular ſervice to mankind to have the records of paſt ages well and faithfully tranſmitted to poſterity, it is to be wiſhed that perſons of ſimilar character would, in all countries, undertake it.

Having illuſtrated the qualities of a good hiſtorian by direct or indirect references to ancient writers, it may not be improper to ſpecify ſome inſtances in which the moderns have excelled in this kind of writing. Dr. Blair ſelects Italy as the country in Europe where the hiſtorical genius has, in latter ages, ſhone forth with the greateſt luſtre. Soon after the reſtoration of letters, Machiavel, Guicciardin, Davila, Bentivoglio, father Paul, became highly conſpicuous for hiſtorical merit. All of them appear to have conceived very juſt ideas of hiſtory; and are agreeable, inſtructive, and intereſting writers. They are not, however, without ſome imperfections, which have been pointed out by critics, and detailed by Blair. Among the French, many hiſtorical writers are ſpirited, lively, and agreeable; and ſome of them not deficient in profoundneſs and penetration. Nevertheleſs, France has not produced any ſuch capital hiſtorians as Italy. In our own iſland, Scotland acquired reputation, at an early period, by means of the celebrated Buchanan. He is an elegant writer, claſſical in his Latinity, and agreeable both in narration and deſcription; but ſuſpected to be more attentive to elegance than to accuracy; and inaccurate and imperfect in his political views; and charged with being deeply tinctured with the ſpirit of party. Among the older Engliſh hiſtorians, the moſt conſiderable is lord Clarendon: more impartial in his relation of facts than might have been expected, and diſtinguiſhed by the ſpirit of virtue and probity which pervades his work. He maintains the dignity of an hiſtorian; and though his ſentences are too long and his general manner prolix, his ſtyle is, upon the whole, manly; and his merit, as an hiſtorian, much beyond mediocrity. He is particularly admirable, and perhaps we may ſay unequalled in the drawing of characters. Some have aſſerted that he was the firſt Engliſhman who ſeems to have attempted to write hiſtory with any degree of dignity. But this aſſertion is not ſtrictly accurate. Sir Walter Raleigh and Knowles made the attempt before him, and with no ſmall ſucceſs, and we may aſſert the ſame, in a great degree, concerning ſir Francis Bacon and lord Herbert of Cherbury. However, Clarendon has, in this reſpect, exceeded all his predeceſſors. Biſhop Burnet is lively and perſpicuous; but his ſtyle is too careleſs and familiar for hiſtory; his characters are marked with a bold and a ſtrong hand, but they are generally light and ſatirical; and he abounds too much in little ſtories concerning himſelf, that he reſembles more a writer of memoirs than of hiſtory. For a juſt appreciation of his character as an hiſtorian, ſee the article BURNET. During a long period, Engliſh hiſtorical authors ſeemed to aim at nothing higher than an exact relation of facts; till of late the diſtinguiſhed names of Hume, Robertſon, and Gibbon, have raiſed the Britiſh character in this ſpecies of writing to high reputation and dignity. Dr. Blair obſerves, that of late years a great improvement has begun to be introduced into hiſtorical compoſition; which conſiſts in a more particular attention than was formerly given to laws, cuſtoms, commerce, religion, literature, and every thing elſe that tends to ſhew the ſpirit and genius of nations. An hiſtorian is now expected to exhibit manners, as well as facts and events ; and it muſt be allowed, that whatever diſplays the ſtate and life of mankind in different periods, and illuſtrates the progreſs of the human mind, is more uſeful and intereſting than the detail of ſieges and battles. The introduction of this improvement into hiſtory has been chiefly owing to the celebrated M. Voltaire, whoſe age of Louis XIV. commanded the attention, and claimed the approbation of all Europe. See farther on this ſubject Ward's Oratory, vol. ii. lect. 42, 43, 44, and 45. Blair's Lectures, vol. iii. lect. 36.

The term hiſtoriographer is chiefly uſed for a perſon who has a peculiar charge and commiſſion to write the hiſtory of his time. The hiſtoriographer to his majeſty is an officer under the lord chamberlain ; his ſalary 200*l.* per annum. There is an office of the ſame kind in Scotland with the ſame ſalary.

HISTORY, a recital or deſcription of things as they are, or have been in a continued orderly narration of the principal facts and circumſtances attending them. The word is Greek, *ἱϛορια*, *hiſtoria ;* and literally denotes a ſearch of curious things, or a deſire of knowing, or even a rehearſal of things we have ſeen ; being formed of the verb *ἱϛορειν*, which properly ſignifies to know a thing by having ſeen it ; though the idea appropriated to the term hiſtory is now much more extenſive, and we apply it to a narration of divers memorable things, even though the relator only takes them from the report of others. The origin of the word is from the verb *ισημι*, *I know ;* and hence it is, that among the ancients ſeveral of their great men were called *polyhiſtores*, *q. d.* perſons of various and general knowledge.

Hiſtory is divided, with regard to its *ſubject*, into the *hiſtory of nature* and the *hiſtory of actions.*

HISTORY *of Nature*, or *Natural Hiſtory*, is a deſcription of natural bodies ; whether terreſtrial, as animals, vegetables, foſſils, fire, water, air, meteors, &c. or celeſtial, as the ſtars, planets, comets, &c. Natural hiſtory is much the ſame with what we otherwiſe call *phyſiology*. See *Natural* HISTORY and PHYSIOLOGY.

HISTORY, with regard to *actions*, is a continued relation of a ſeries of memorable events in the affairs either of a ſingle perſon, a nation, or ſeveral perſons and nations, and whether included in a great or little ſpace of time ; or, it is a narrative of ſuch facts as are fit to be tranſmitted to poſterity for the uſe of mankind and the better conduct of human life. Cicero calls hiſtory the miſtreſs of life, (De Orat. lib. ii. cap. 9.) as it teaches us both what we ought to purſue and what we ought to avoid.

Thus Thucydides, among the ancients, excellently tranſlated by Smith, and among the moderns, Stanyan, Leland, Gillies, Mitford, the abbe Barthelemi in his Travels of Anacharſis, have written the Hiſtory of Greece ; Livy, among the ancients, and among the moderns, Catrou and Rouille, Rollin, Vertot, Hooke, Ferguſon, Monteſquieu, Crevier, Gibbon, &c. that of Rome ; Mezeray and F. Daniel, of France ; Tyrrel, Echard, Rapin, continued by Tindal, Carte, Guthrie, with the ſupplement of Ralph, Hume continued by Smollett, Henry, &c. Kennett, in his complete hiſtory, including the works of ſeveral writers, of whom the moſt diſtinguiſhed, in point of hiſtorical compoſition and merit, are Milton, Daniel, Bacon, lord Herbert, Camden, and Wilſon, &c. the Hiſtory of England ; Buchanan, not to mention John Major and Hector Boethius, whoſe works are now almoſt obſolete, Robertſon, whoſe hiſtory is a claſſic production, and is thought by many to be the doctor's "Palmarium Opus," G. Stuart, ſir D. Dalrymple, lord Hailes, Guthrie, &c. &c. of Scotland ; O'Connor, Valancy, Ferdinando Warner, O'Halloran, Leland, Crawford, Carte in his Life of the Duke of Ormond ; ſir James Ware in his Lives of the Biſhops and Writers of Ireland, improved and enlarged by Mr. Harris, &c. &c. of Ireland ; Dr. Powel, Warrington, &c. of Wales ; Clarendon, the Hiſtory of the Rebellion ; and Thuanus, biſhop Burnet, &c. the Hiſtory of their own Lives and Times.

Euſebius, Baronius, &c. have written the Hiſtory of the Church ; biſhop Burnet that of the Reformation, &c.

Several authors have written on the Method of reading and ſtudying Hiſtory ; among the reſt Lucian, Bodin, Voſſius the Elder, Whear, Patrici, Beni, Maſcardi, De Silhon, F. le Moine, F. Rapin, the abbot De St. Real, F. Thomaſſin, Freſnoy, Prieſtley, &c.

One of the moſt uſeful directions for facilitating the ſtudy of hiſtory, ſays Dr. Prieſtley in his Lectures, (Lect. 17.) is to begin with authors who preſent a "Compendium," or general view of the whole ſubject of hiſtory, and afterwards to apply to the ſtudy of any particular hiſtory, with which a more thorough acquaintance is deſired. The moſt celebrated epitome of univerſal hiſtory written in Latin, is Turſalin's, which is read in moſt of the foreign univerſities. Boſſuet's Epitome of Univerſal Hiſtory, is greatly and deſervedly admired in France ; but it brings the hiſtory no lower than the time of Charlemagne. One of the moſt uſeful epitomes, upon the whole, is that written by baron Holberg in Latin, and tranſlated with improvements into Engliſh by Dr. Gregory Sharpe. Its principal defect is, that too little notice is taken of the hiſtory of Greece, and that other ſubjects are diſpatched with too much brevity. The moſt valuable of the larger kind of epitomes are Rollin's of the ancient hiſtory, and Puffendorf's of the modern. One of the moſt obvious contrivances to reduce hiſtory into a ſhort compaſs, and to make an entire courſe of it eaſy to be comprehended, and at the ſame time to obſerve a proper diſtinction between the parts of it, has been by "Chronological Tables." See CHRONOLOGY.

Much of the perſpicuity of hiſtory depends on conceiving clearly the order of generations and the right of ſucceſſion in regal and other families. In this reſpect, "Genealogical Tables" are of unſpeakable uſe. (See GENEALOGY.) But the moſt ingenious and uſeful contrivance to facilitate the ſtudy of hiſtory, and to aid the imagination in conceiving diſtinctly, and comprehending the whole courſe of it, in all its parts, co-exiſtent and ſucceſſive, is the "Chart of Hiſtory." This is properly a picture of all hiſtory, and is formed by ſuch natural methods of expreſſion, that it renders viſible to the eye, without reading, the whole figure and dimenſions of all hiſtory, general and particular, and ſo perfectly ſhews the origin, progreſs, extent, and duration, of all kingdoms and ſtates that ever exiſted, at one view, with every circumſtance of time and place, uniting chronology and geography, that it not only, in the moſt agreeable manner, refreſhes the memory without the fatigue of reading ; but a novice in hiſtory may learn more from it by a mere attentive inſpection of a few hours, than he can acquire by the reading of many weeks or months. This chart muſt anſwer, in the completeſt manner imaginable, almoſt every uſe of a compendium of hiſtory, proper to be read before a larger and fuller courſe be entered upon ; and it will prevent any confuſion which might ariſe from reading particular hiſtories without a regard to their proper order of time or place, better than any abſtract of univerſal hiſtory whatever. For by caſting our eye for a minute upon this chart, we ſee, at one glance, the contemporary ſtate of the whole world at the period of which we are reading, and the preceding and ſucceeding ſtate of the particular country, the hiſtory of which we are ſtudying. Dr. Prieſtley has conſtructed a chart of this kind, of the ſame ſize with his chart of biography, drawn upon a like ſcale, and made to correſpond to it in all reſpects. Among other methods of illuſtrating and retaining hiſtory, we may mention Mr. Grey's "memorial lines," ſerving to aid us in recollecting dates with exactneſs. To this we may add the uſe of a "common-place book," in which the moſt valuable fruits of hiſtory may be repoſited.

We ſhall here ſubjoin the order in which the principal authors of antiquity ſhould be read, ſo as to obtain from them a regular ſeries of facts, compriſing the hiſtory of Aſia, Africa, Greece, and Rome, till the diſſolution of the empire of Conſtantinople. The oldeſt hiſtory extant, next to the hiſtorical books of the Old Teſtament, is that of "Herodotus," who flouriſhed about 450 years B.C., a little after the invaſion of Greece by Xerxes. His hiſtory compriſes probably every thing which he had an opportunity of learning concerning the hiſtory of the Lydians, Ionians, Lycians, Egyptians, Perſians, Greeks, and Macedonians; and, computing from the earlieſt of his accounts to the lateſt, his hiſtory may be reckoned to commence about 713 years B.C., and to reach to about the year 479 B.C.; a period of about 234 years. A more particular account of ſeveral things in the period of which he treats, may be extracted from the following authors; *viz.* Juſtin (l. i. ii. iii. and vii.), Xenophon's Cyropædia, and the lives of Ariſtides, Themiſtocles, Cimon, Miltiades, and Pauſanias, written by Plutarch and Cornelius Nepos; and thoſe of Anaximander, Zeno, Empedocles, Heraclitus, and Democritus, by Diogenes Laertius. Next to Herodotus, "Thucydides" ſhould be read. Introductory to his hiſtory of the Peloponneſian war, which was his principal and profeſſed ſubject, he gives a ſummary view of the hiſtory of Greece, from the departure of Xerxes to the commencement of that war, which connects his hiſtory with that of Herodotus. To complete the period comprehended by his hiſtory, after his firſt book, the eleventh and twelfth books of Diodorus Siculus ſhould be read, together with Plutarch's Themiſtocles, Ariſtides, Pauſanias, and Cimon, and the ſecond and third books of Juſtin. And, after the whole of Thucydides, the hiſtorical ſtudent ſhould read the lives of Alcibiades, Chabrias, Thraſybulus, and Lyſias, written by Plutarch or Cornelius Nepos, the fourth and fifth books of Juſtin, and the firſt book of Oroſius. After Thucydides, the firſt and ſecond books of "Xenophon's Hiſtory of Greece" ſhould be read. This completes the hiſtory of the Peloponneſian war, with the contemporary affairs of the Medes and Perſians. After this, let the ſtudent proceed to the "expedition of Cyrus," and the return of the Greeks; and laſtly, the remainder of his hiſtory of Greece, which contains an account of the affairs of the Greeks and Perſians to the battle of Mantinæa, which happened in the year 363 B.C.; ſo that all the hiſtorical books of Xenophon compriſe a period of about 48 years. To complete the hiſtory of this period, recourſe may be had to the lives of Lyſander, Ageſilaus, Artaxerxes, Thraſybulus, Chabrias, Conon, and Datames, written by Plutarch or Cornelius Nepos; the fourth and fifth books of Juſtin; and the thirteenth, fourteenth, and fifteenth of Diodorus Siculus. After Xenophon's works let the fifteenth and ſixteenth books of Diodorus Siculus be read; theſe contain the hiſtories of Greece and Perſia, from the battle of Mantinæa to the beginning of the reign of Alexander the Great, in the year 336 B.C. After theſe two books of Diodorus, let Arrian's hiſtory of Alexander be read; and for completing this hiſtory, let the reader recur to Quintus Curtius, the tenth and eleventh books of Juſtin, and Plutarch's life of Alexander. After Arrian, let him peruſe the eighteenth, nineteenth, and twentieth books of Diodorus Siculus, which contain the hiſtory of Greece from the year 323 B.C. to the year 301; and to complete this period, the thirteenth, fourteenth, and fifteenth books of Juſtin, and the Demetrius and Eumenes of Plutarch. After the books of Diodorus, read from the ſixteenth to the twenty-ninth book, incluſive, of Juſtin, which brings down the hiſtory to about the year 195 B.C. After Juſtin, read Plutarch's lives of Pyrrhus, Aratus, Agis, Cleomenes, and Philopœmen. The lives of illuſtrious men written by Plutarch, who flouriſhed about the year 130 after Chriſt, make an excellent ſupplement to univerſal hiſtory. To complete the hiſtory furniſhed by theſe lives of Plutarch, read the fragments of Diodorus. Laſtly, in the regular order of hiſtory, read the thirtieth book of Juſtin, and all that follow till the two laſt, which completes the hiſtory of Greece till it is blended with that of the Romans. All the hiſtories abovementioned are written in Greek, except thoſe of Juſtin, Quintus Curtius, and Cornelius Nepos, which are in Latin.

The following courſe of "Roman Hiſtory" may be conſidered as comprehending all that is now to be learned of the ſubſequent ancient hiſtory of all other nations, beſides Greece and thoſe comprehended in its hiſtory. The writer who treats of the early part of the Roman hiſtory, in the fulleſt and moſt ſatisfactory manner, is "Dionyſius of Halicarnaſſus," who brought down the hiſtory of Rome as far as the beginning of the firſt Punic war. But of his work, which conſiſted of twenty books, the eleven firſt are all that are extant, and they end at the year 341 B.C., the time when the conſuls reſumed the chief authority in the republic, after the diſſolution of the decemvirate. To complete the hiſtory of the period of which he treats, read Livy (l. i. ii. and iii.), Plutarch's Romulus, Numa Pompilius, Valerius Poplicola, Coriolanus, and Camillus. After Dionyſius, read from the fourth to the tenth book incluſive of Livy, which brings the hiſtory of Rome to the year 292 B.C. To ſupply the chaſm between the tenth and twentieth books of Livy, read Polybius, particularly the firſt and ſecond books, which treat chiefly of the firſt Punic war; the epitome of the ſecond decad of Livy, books ſeventeen, eighteen, twenty-two, and twenty-three of Juſtin, fourteen chapters of the fourth book of Oroſius, the fourth and fifth of the third book of the "hiſtoria miſcellanea" of Paulus Diaconus, Plutarch's Marcellus, and Fabius Maximus; the ſecond tome of the Annals of Zonaras, and Appian's Punic and Illyrian wars. After Appian ſhould be read the remainder of Livy, from the twenty-firſt book to the end, which brings the hiſtory to the year 166 B.C., and the epitome to the end. To complete the laſt books of Livy, read Plutarch's Hannibal, Scipio Africanus, Quintus Flamininus, Paulus Æmilius, and Cato Major. After this read his Gracchi, Marius, Sylla, Cato Minor, Sartorius, Lucullus, Pompey, and Brutus. The reader of hiſtory muſt next proceed to Salluſt's hiſtory of the war of Jugurtha, which happened 100 years B.C., and of the conſpiracy of Catiline, which happened 62 years B.C. Next ſhould follow Julius Cæſar's Commentaries of his own wars, and the ſupplement by Hirtius and others. To obtain a clear idea of this important period of time, Cicero's epiſtles, eſpecially thoſe to Atticus, ſhould not be overlooked. The hiſtory of Dio Caſſius compriſed all the time from the building of Rome to the reign of Alexander; but to ſupply the want of the laſt twenty, we muſt be content with what Xiphilinus, who wrote A.D. 1050, has given us in a compendium of them. The period of which Dio Caſſius treats will be made more complete by Velleius Paterculus, who lived

lived under Tiberius. We ſhould then have recourſe to Suetonius's lives of the twelve Cæſars; and next to Tacitus's annals and hiſtory. This hiſtory contains a fund of political knowledge, and, on that account, is very proper to be ſtudied by princes and miniſters of ſtate. Tacitus is the laſt Roman hiſtorian who is worth reading, except barely for thoſe *facts* which we have no other method of becoming acquainted with. Suetonius and Tacitus are generally placed in what is called the "ſilver age" of the Latin tongue; but all the ſucceeding writers are univerſally thrown into the "brazen," or "iron" age. Theſe, in the order according to which they ſhould be read, are, the lives of Nerva and Trajan by Aurelius Victor or Xiphilin, Spartian's Adrian, Capitolinus's Antoninus, Herodian, the Scriptores Romani, or Hiſtoriæ Auguſtæ Scriptores, *viz.* Spartianus, Lampridius, Capitolinus, Vulcatius, Trebellius Pollio, and Vopiſcus ſupplying the chaſm in theſe writers between Gordian III and Valentinian, from Aurelius Victor, and then the hiſtory will be brought down to A.D. 283. Eutropius will furniſh a good epitome of the Roman hiſtory till about this time, in Latin. All the writers of the Roman hiſtory from this time are Greek, except Ammianus Marcellinus; they are Zozimus, A.D. 507; Zonaras, A.D. 1119; Jornandes, A.D. 540; Ammianus Marcellinus, A.D. 375; Procopius, A.D. 502; Agathias, A.D. 567; Nicetas Acominatus, A.D. 1203; Nicephorus Gregoras, A.D. 1341; and Johannes Cantacuzenus, A.D. 1350. In this enumeration we ought not to have omitted a celebrated female hiſtorian, *viz.* Anna Comnena, the daughter of Alexius I., emperor of Conſtantinople, who wrote the hiſtory of the reign of her own father, in which ſhe makes the firſt mention of the arrival of the cruſaders at Conſtantinople, and gives an account of their conduct during their reſidence in that city, and their paſſage into Aſia. Her narration is not very favourable to the cruſaders. The concluſion of the hiſtory of Conſtantinople, with the riſe and progreſs of the Turks, may be learned from Laonicus Chalcondiles, who put an end to it. He begins his hiſtory with Ottoman, the ſon of Orthogul, who began to reign about the year of Chriſt 1300. His work conſiſts of ten books, and brings the hiſtory to the year 1453, in which Conſtantinople was taken by Mahomet II.

Of all the modern compilations, derived from theſe ſources of hiſtorical knowledge, none are ſo uſeful as thoſe which treat of the manners, cuſtoms, and laws of the Greeks and Romans. The moſt complete body of Greek and Roman antiquities is that of Grævius and Gronovius; but this is voluminous and expenſive. A perſon may acquire knowledge enough of this kind, for the purpoſe of reading the Greek and Latin hiſtorians, in Potter's excellent and compendious ſyſtem of Greek antiquities, and in Kennett's Antiquities of Rome. Books which contain collections of coins and inſcriptions ſhould not be neglected; the principal collectors of theſe kinds of records are Gruter, Lipſius, Chiſhul, Montfaucon, Prideaux, Mazochius, and Fleetwood for inſcriptions; and Spanheim, Urſinus, Patin, Vaillant, Hardouin, and Goltzius for coins. In ſtudying the Roman hiſtory, a perſon ſhould become converſant with the civil law, which contains the hiſtory of the domeſtic policy of that great people. He ſhould therefore acquaint himſelf at leaſt with "Juſtinian's Inſtitutes;" which contain an authentic outline of their policy. The modern compilations of ancient hiſtory are very numerous; but the moſt complete are "Rollin's" and the "Univerſal Hiſtory." Rollin's ancient hiſtory has been often recommended to young perſons, and it well deſerves their attention. Though the author is only a compiler, he is eloquent. He always writes on the ſide of virtue, and his moral reflections are uſeful; though he cannot be conſidered as diſtinguiſhed by an extraordinary degree of critical ſagacity. The "Ancient Univerſal Hiſtory" is a work of eſtabliſhed reputation and utility. Its references to original authors are numerous; and though it is, with reſpect to judgment and ſtyle, very unequal, and its chronology is various, as it was executed by different perſons, yet it indicates unqueſtionable traces of labour in reſearch, and impartiality in detail. Its faults, compared with its excellencies, are trifling. The oriental part is particularly entitled to applauſe, as it conveys a variety of knowledge, which could not otherwiſe have been eaſily obtained. One principal advantage is, that it gives a ſeparate hiſtory of every individual nation, however inconſiderable; ſo that we ſee at once its relative importance, and its connection with the greater empires, by which it might, at length, be ſwallowed up. The beſt editions of the ancient univerſal hiſtory are, that in folio, and the firſt which appeared in 8vo.

As for thoſe who wiſh to ſtudy the Engliſh hiſtory by the peruſal of the works of original writers, and who have leiſure for this purpoſe, we would refer them for an account of them to Nicholſon's Engliſh Hiſtorical Library. Hence, and from other ſources of information, they will be led to acquaint themſelves with Gildas, the moſt ancient Britiſh hiſtorian, who was born in the year 520, and publiſhed his treatiſe "De excidio Britanniæ" towards the cloſe of his life; the venerable Bede, who was born in 672 or 673; Nennius in 830; Hoel Dha's laws, enacted about the middle of the tenth century; Geoffrey of Monmouth, about the year 1150, the greater part of whoſe work is fabulous; Caradoc, monk of Lancarvan, contemporary with Geoffrey, who wrote a hiſtory of the petty kings of Wales, tranſlated from the Latin original into Engliſh, by Humphrey Llwyd, and enlarged by Dr. Powel, and again by W. Wyn, &c. The oldeſt hiſtory of the Saxon affairs is the "Saxon Chronicle," firſt publiſhed by Abraham Wheelock, the work of unknown authors, and terminating at various periods from 977 to 1154. The earlieſt account we have of the reign of Alfred is that of Aſſerius, his contemporary: the next Saxon hiſtorian is Ethelward, or Edward Patritius in 1090, who continued his chronicle of the Saxon kings no farther than Edgar. Many things relating to the civil government of theſe times are diſperſed in ſome particular lives of their ſaints and kings; particularly thoſe of Offa, Oſwin, Ethelwolf, and Edward the Confeſſor. Of the later writers of the Saxon affairs we may mention Verſtegan in his "Reſtitution of decayed intelligence in Antiquities," corrected by Sheringham and Somner; Selden in his "Analecta;" and Sheringham in his treatiſe "De Anglorum gentis origine." The "Sachſen Spiegel," or "Speculum Saxonicum," is an excellent manual of the old laws of the ancient Saxons. The hiſtory of Great Britain, in certain periods of it, is much connected with the hiſtories of Norway and Denmark; and therefore the Daniſh antiquities ſhould be inveſtigated, and the Runic characters underſtood. The Daniſh antiquary ſhould alſo be acquainted with the beſt Iſlandic hiſtorians, the moſt ancient of whom is Aras Frode, contemporary with Sæmond, about the year 1124; part of whoſe hiſtory of Iceland was publiſhed in 1689 by the biſhop of Skalholt. There are two Norwegian hiſtories which ſhould be conſulted; the former written ſoon after the year 1130 by Theoderic, a monk, and the other compiled by Snorro Sturleſonius, both of whom draw their materials from the ballads of the Scaldri, whoſe hiſtorical poems, it is generally thought, may be depended upon.

Two Daniſh hiſtorians, of principal importance to the Engliſh antiquary, in the judgment of Mr. Nicholſon, are Saxo Grammaticus, and his contemporary Sweno Agonis, of both which we have an excellent edition by Stephanus. The former died at Roſchild in 1204; and by his own account, he compiled his hiſtory out of the Icelandic ballads; and Sweno declares that he compiled his from the traditions of old people. The great reſtorer of the decayed antiquities of Denmark was Olaus Wormius, in his "Literatura Runica," and "Monumenta Danica," to whoſe diſcoveries an addition has been made by Thomas Bartholine. Much light has lately been thrown on this ſubject by various antiquaries, and particularly by Mr. Jonſtone, profeſſor Thorkelin, and Mr. Pinkerton. The firſt of our Engliſh hiſtorians after the conqueſt was Ingulphus of Croyland, who begins A.D. 626, and ends A.D. 1089. About the ſame time Marianus Scotus brought down our Engliſh hiſtory as low as the year 1083. The earlieſt hiſtory in the 12th century was written by Florentius Bravonius, a monk of Worceſter, whoſe book ended with his life in 1119; but it was continued 50 years farther by another monk of the ſame monaſtery. Our next hiſtorian was Eadmerus, a monk of Canterbury, whoſe "Hiſtoria Novorum, &c." was publiſhed by Mr. Selden, and extends from 1066 to 1122. William of Malmſbury is one of the moſt important and valuable of our ancient hiſtorians. He is highly commended by Leland and others. He wrote "De geſtis regum Anglorum" in five books, with an appendix in two more, which he ſtyles "Novellæ hiſtoriæ." His hiſtory comprehends the affairs of England from the firſt arrival of the Saxons to the cloſe of the reign of king Stephen. Simeon Dunelmenſis, monk of Durham in 1164, author of "De Geſtis Regum," commences with the death of Bede in 732 and ends in 1129. Ealred, abbot of Rievaulx, gives a ſhort genealogy of our kings to Henry II., but chiefly enlarges in praiſe of David king of Scots, founder of many Ciſtercian abbies. About the ſame time flouriſhed Henry, archdeacon of Huntington, whoſe eight books, concluding with the reign of king Stephen, were publiſhed by ſir Henry Savile. William of Newberry begins at the death of Henry I., and ends in the year 1097. The 13th century begins with Gervaſe monk of Canterbury, who is ſaid to have been a judicious antiquary and methodical hiſtorian, and to have made an excellent collection of the Britiſh and Engliſh hiſtory from the arrival of the Trojans to the year 1200. All that is extant commences with the year 1112, the 12th year of Henry I., and ends with the death of Richard I. It bears the character of being executed with great judgment. Cotemporary with theſe two, was Roger de Hoveden, chaplain to king Henry II., who has deduced our hiſtory to the year 1202, the 4th year of king John's reign. The next hiſtorian of note is Ralph de Diceto, dean of London, who, about the year 1210, compoſed two treatiſes, entitled "Abbreviationes Chronicorum," compriſing an abſtract of our hiſtory, chiefly eccleſiaſtical, down to the conqueſt, and "Imagines hiſtoriarum," containing the hiſtory of ſome of our kings, terminating with the firſt year of king John's reign. Selden much admires this author and his works. Theſe writers were ſoon ſucceeded by Matthew Paris, a monk of St. Alban's, who is reckoned the firſt in value and reputation of all our ancient hiſtorians. His hiſtory comprehends a very important period, from the beginning of the reign of William I. to the end of that of Henry III., and the information it contains is equally curious and uſeful. His mode of writing is, on the whole, pleaſing and agreeable, and his compoſition ſimple and perſpicuous. The ſpirit with which he expoſes the pretenſions and conduct of the Roman pontiffs is admirable; and it is no wonder that, on this account, he ſhould be diſparaged by Bellarmine and Baronius. His hiſtory was firſt publiſhed at London in 1571, and at Zurich in 1589. It again appeared in 1606; but the beſt edition is that of Dr. W. Watts in 1640. Watts's edition again appeared in 1684, but this edition is not equal to the firſt impreſſion. The 14th century begins with Thomas Wikes, whoſe hiſtory begins at the conqueſt, and ends at the death of Henry I., A.D. 1304. Nicholas Trivet, who was buried in the year 1328, and his contemporary, Roger Ceſtrenſis, deſerve curſory mention. The chronicle of John Brompton begins with the coming in of Auguſtin the monk in 528, and ends with the death of Richard I. A.D. 1198: this author has given a collection and verſion of the Saxon laws in Latin, made in the time of Edward III. The chronicle of Walter Hemmingford, who flouriſhed in the reign of Edward III. begins in 1066, and ends with the year 1308. Ralph Higden wrote a hiſtory, ſtyled "Polychronicon," chiefly compiled from the writings of other, and old chronicles now loſt. He died in the year 1377. John, vicar of Tinmouth, was a great collector of Engliſh hiſtories, which he digeſted in three very large volumes; they chiefly relate to the miracles of Engliſh ſaints. He was a monk of St. Alban's in 1366. Matthew, a Benedictine monk of Weſtminſter, was a great collector of former hiſtorians, and therefore uſually ſtyled "florilegus." His hiſtory ends at the year 1307, which he probably did not long ſurvive. It was continued by others; chiefly by Adam Merimuth, canon regular of St. Paul's, who begins in 1302, and ends in 1380, probably the year of his death. Henry Knighton wrote a chronicle "Of the Events of England," from the time of Edgar, in 958, to the year 1395, the 19th year of Richard II. in whoſe time he lived. Although he does not rank high as an hiſtorian, he is valuable for the account he gives of the proceedings againſt Richard II. from which it appears how free our conſtitution was underſtood to be at that period, and how great were the prerogative and power of parliament. His "Chronicon, de Eventibus Angliæ," and his "Hiſtoria depoſitionis Ricardi ſecundi," are both preſerved in Twiſden's "Decem Scriptores." The 15th century was one of the moſt rude and illiterate ages. Amongſt the few eminent for learning was ſir John Froiſſart, whoſe work contains a general hiſtory of the affairs of France, Spain, and other parts of Europe; but he alſo particularly inſiſts on the wars between the Engliſh and French, from 1335 to 1400. (See his biographical article.) The next hiſtorian worthy of notice is Thomas Walſingham, a monk of St. Alban's, and probably regius profeſſor of hiſtory in that monaſtery, about the year 1440. His ſhort hiſtory begins at the concluſion of Henry the Third's reign, where Matthew Paris ends, and is continued to the end of Henry V. His "Hypodigma Neuſtriæ," regards the affairs of Normandy from the time of Rollo to the ſixth year of Henry V. in which are many occurrences not elſewhere to be found. William Caxton continued a hiſtory begun by the monks of St. Alban's, which commenced with the firſt inhabitants of this iſland, to the laſt year of Edward IV. 1483. The whole work bears the title of "Fructus Temporum." John Roſs travelled over England, and made collections out of the libraries to which he had acceſs, pertaining to the hiſtory and antiquities of this kingdom. They are preſerved in the Britiſh muſeum; and contain many particulars that illuſtrate the antiquities of our univerſities. Of the hiſtorians above recited, thoſe whoſe works are entitled to diligent peruſal by the hiſtorical ſtudent, are Ingulphus, Eadmerus, William of Malmſbury, Roger de Hoveden, William of Newberry, Matthew of Paris, Matthew of Weſtminſter, Henry Knighton, and Froiſſart. Moſt of our ancient hiſtorians will be found in ſir Henry Savile's "Quinque Scriptores Anglicæ Hiſtoriæ," 1596; in the "Decem Scriptores" of 1629; in the "Decem Scriptores" by Twiſden, in 1652; in the "Rerum Anglicanarum Scriptores," publiſhed at Oxford in 1684; and in the two volumes of Dr. Gale, the firſt containing five, and the ſecond 15 hiſtorical writers. There are ſeparate editions of Merianus and Duodechinus, of Florentius, of Eadmerus, of Matthew Paris, of Trivet, of Matthew of Weſtminſter, of Froiſſart, of T. Walſingham, and of W. Caxton. Of the hiſtorians in the 16th century, we may mention Robert Fabian, who died in 1512, whoſe "Hiſtoriarum Concordantiæ," bring down the hiſtory from Brutus to William the Conqueror, in the firſt ſix books; and in the ſeventh he gives the hiſtory of our kings from the Conqueror to Henry VII.; Polydore Virgil, an accompliſhed writer, who wrote the hiſtory of our nation in Latin to Henry VIII.; Edward Hall, who died in London in 1547, and who wrote a diffuſe account of the wars between the houſes of York and Lancaſter, dedicated to Henry VIII.; Harriſon and Hollingſhead, whoſe chronicle is greatly eſteemed; the ſecond edition of this hiſtory was continued to the year 1586 by John Hooper, alias Vowel. In the 17th century the firſt author who occurs is John Stow, who was an induſtrious ſtudent, and a critical collector; he died in 1605; John Speed wrote a chronicle, which is the largeſt and the beſt, ſays Nicholſon, that is extant; it begins with the firſt inhabitants of this iſland, and ends with the union of the two kingdoms under king James, to whom it is dedicated; Richard Baker, who died in the Fleet, in 1644, publiſhed a chronicle, which was well received; the author himſelf wrote the hiſtory of our kings from the Romans to the end of the reign of James I. and it was continued to the reſtoration by Edward Philip. In later times we have had a great number of hiſtorians, or compilers of hiſtory. Among theſe we may enumerate ſir Winſton Churchill, Sandford, Brady, a zealous advocate for the royal prerogative, Tyrrel, a ſtrenuous defender of the ancient rights and privileges of the people, Echard, now almoſt forgotten; Carte, a non-juror and a Jacobite, whoſe general hiſtory, notwithſtanding his peculiar opinions and attachments, is undoubtedly a production of great merit in point of information; Guthrie, much neglected, but undeſervedly, as he is a faithful and diligent writer, who had recourſe to original evidence, though in the latter part of his work he inclines too much to Tory principles; and Ralph, whoſe critical hiſtory of the reigns of Charles II. and James II. is a ſupplement to Guthrie, and is a curious and valuable performance. The more conſiderable hiſtorians, whom we ſhall mention, are Clarendon, of whoſe hiſtory we have already given an account; Whitelocke, whoſe Memorials contain a rich repoſitory of moſt valuable materials; Ludlow, an honeſt and zealous republican; Burnet (ſee his article, and above); Rapin, who ſpent 20 years in the compoſition of his excellent hiſtory, and who, though tedious, is on the whole faithful and impartial; Tindal, the continuator of Rapin, Hume, Smollet, Henry, Lyttelton, Harris, Macaulay, &c. &c. &c.; and a great number of others, who have written hiſtories of particular lives and reigns, and whoſe names we cannot recite.

Hiſtory, with reſpect to *time*, is divided into *ancient* and *modern*, diſtinguiſhed into ſeveral epochs, periods, and intervals.

The three periods of time into which hiſtory has been divided are the following, *viz.* the *firſt*, from the creation to the deluge, which age is reckoned uncertain, becauſe we know no more than the ſhort account given of it in the holy ſcriptures; the *ſecond*, from the deluge to the firſt Olympiad, which, from the many feigned ſtories related in it, is called the fabulous age; the *third*, from the firſt Olympiad to our own times, is called hiſtorical, becauſe the actions done in that period are recorded by writers of true hiſtory. See AGE and CHRONOLOGY.

The moſt ancient of the Greek hiſtorians now left is Herodotus, who lived, according to ſir Iſaac Newton's Chronology, 157 years after the building of Rome. And as to the Romans, Livy himſelf confeſſes, that there were ſcarcely any certain memoirs of their affairs till the city was taken by the Gauls, which was above 100 years later than Herodotus; the accounts before this time having been preſerved chiefly by tradition.

Hiſtory, with reſpect to its *ſubject*, is divided into *univerſal* and *particular*, *ſacred* and *profane*.

F. Meneſtrier gives us the proper characters of the divers kinds of hiſtory with great accuracy. He diſtinguiſhes hiſtory with regard to both its matter and its form, and gives curious inſtances of each particular.

Hiſtory, with regard to its *matter*, is either *ſacred*, or *natural*, or *civil*, or *perſonal*, or *ſingular*; to which ſome have added *artificial hiſtory*, giving an account of the origin and progreſs of arts; and *miſcellaneous hiſtory*, which recites many various things as they promiſcuouſly occur in human life.

HISTORY, *ſacred*, is that which lays before us the myſteries and ceremonies of religion, viſions, or appearances of the Deity, &c. miracles, and other ſupernatural things, of which God alone is the author. Such are, the book of Geneſis, the Goſpels, Apocalypſe, &c. See MIRACLES, PROPHECY, REVELATION, &c.

To this we may refer *eccleſiaſtical hiſtory*, which gives an account of the riſe and eſtabliſhment of the ſeveral religions and churches, of the riſe and progreſs of various opinions, ſects, &c. In ancient *ſacred* hiſtory, otherwiſe called the hiſtory of the Old Teſtament, there are ſeven remarkable periods. The firſt comprehends 1656 years, from the creation of the world to the deluge; (ſee *Sacred* CHRONOLOGY.) The ſecond period includes 857 years, from the deluge to the going forth of the Iſraelites out of Egypt. (See DELUGE.) The third period begins with the exodus of the Iſraelites in 2513, extends to the times of the kings, and includes 396 years. (See EXODUS.) The fourth period begins in the year of the world 2909, or from the beginning of the government by kings, and extends to the end of the Babyloniſh captivity, or 3468th year of the world, including 559 years. (See CAPTIVITY.) The fifth period amounts to 372 years, from the year of the world 3468 to the year 3840, or to the times of the Maccabees. (See MACCABEES.) The ſixth period begins with Judas Maccabæus, A.M. 3840, and is continued to the year 3964, or to Herod the Great, comprehending 124 years. (See HEROD *the Great*.) The ſeventh, or laſt period reaches from Herod the Great to the deſtruction of Jeruſalem, or the 70th year after the birth of Chriſt, containing 106 years. See JERUSALEM.

In more *modern ſacred* hiſtory, more properly called *eccleſiaſtical* hiſtory, which denotes a clear and faithful narration of the tranſactions, revolutions, and events that relate to the external and internal ſtate of the Chriſtian church, Dr. Moſheim has diſtinguiſhed four remarkable periods. The firſt comprehends the ſtate and viciſſitudes of the Chriſtian church, from its commencement to the time of Conſtantine the Great. The ſecond period extends from the reign of Conſtantine to that of Charlemagne, which produced ſuch a remarkable change in the face of Europe. The third period contains the hiſtory of the church from the time of Charlemagne to the memorable period when Luther roſe in Germany to oppoſe the tyranny of Rome, and to deliver divine truth from the darkneſs that covered it. The fourth period reaches from the time of Luther to the preſent times. On this plan Dr. Moſheim's eccleſiaſtical hiſtory, a work deſervedly held in great eſteem, is divided into four books, containing the hiſtory of the centuries comprehended by the above periods according to the order of time. (See Holberg's Introduction to Univerſal Hiſtory, tranſlated by Dr. Sharpe, with notes, &c., p. 55, &c. ed. 1758; and Moſheim's Eccleſiaſtical Hiſtory, tranſlated by Dr. Maclaine, with notes, &c. compriſed in 6 vols. 8vo. vol. i. p. 12.) To this work Dr. Warburton, the late learned biſhop of Glouceſter, bears the following teſtimony: "Moſheim's Compendium is excellent, the method admirable indeed, the only one deſerving the name of an eccleſiaſtical hiſtory." He adds, "It deſerves frequent notes."

HISTORY, *natural*, is a deſcription of the ſingularities of nature, its irregularities and prodigies, and the alterations it undergoes in the birth, progreſs, end, and uſe of things. Such is Ariſtotle's Hiſtory of Animals, Theophraſtus's Hiſtory of Plants, and the entire body of Natural Hiſtory by Pliny; ſuch alſo are Acoſta's Natural Hiſtory of the Indies, Plott's Hiſtory of Staffordſhire, &c.

HISTORY, *civil*, is that of people, ſtates, republics, communities, cities, &c. Such are thoſe of Thucydides, Halicarnaſſus, Livy, Polybius, Mezeray, F. Daniel, Milton, Buchanan, &c.

Civil hiſtory may again be ſubdivided into *particular* and *general:* the former conſiſts of a number of facts relating to the ſame ſtate, ſuitably connected and laid together in a proper ſeries; ſuch are Thucydides's Hiſtory of the Peloponneſian War, compriſing the events of the firſt twenty years of that war; Salluſt's Hiſtory of the War between the Romans and king Jugurtha in Africa; and Cæſar's Hiſtory of his own Gallic and civil Wars: the latter, or *general* hiſtory, is made up of ſeveral particular *hiſtories*, whoſe ſeparate tranſactions within the ſame period of time, or part of it, ſhould be ſo diſtinctly related as to cauſe no confuſion; ſuch are thoſe of Diodorus Siculus, of Herodotus, of Juſtin, of Xenophon, and of Polybius, among the ancients; and Thuanus's Hiſtory; Lord Littelton's Hiſtory of Henry II; Dr. Robertſon's Hiſtory of Charles V. &c. among the moderns.

Civil hiſtory, in its more unlimited extent, is denominated *univerſal* hiſtory. See HISTORY with regard to *actions*, ſupra.

HISTORY, *perſonal*, is that which gives the portrait or life of ſome ſingle perſon. Such are the lives of Plutarch, Cornelius Nepos, Suetonius, &c. and the lives of the painters, philoſophers, ſaints, &c.

Perſonal hiſtory is the ſame with what we otherwiſe call *biography*, and may be denominated *literary* hiſtory, as it records the lives and productions of learned men, the controverſies that ſubſiſted amongſt them, and the riſe and advancement of ſciences. See BIOGRAPHY.

HISTORY, *ſingular*, is that which deſcribes a ſingle action, ſiege, battle, or even a war or expedition, &c. Such was the conſpiracy of Catiline to ſubvert the Roman ſtate written by Salluſt.

Hiſtory, with regard to its *form*, is either *ſimple*, or *figurative*, or *mixed*.

HISTORY, *ſimple*, is that delivered without any art or foreign ornament; being only a naked and faithful recital of things, juſt in the manner and order wherein they paſſed. Such are the Chronicles of the Eaſtern Empire, the Faſti, Chronological Tables, Journals, &c.

HISTORY, *figurative*, is that which is farther enriched with ornaments, by the wit, ingenuity, and addreſs of the hiſtorian. Such are the political and moral hiſtories of the Greeks, Romans, and moſt of the moderns.

This latter is a kind of rational hiſtory, which, without ſtopping at the ſhell or outſide, the appearances of things, diſcovers the ſecret ſprings and movements of the ſeveral events; it enters into the thoughts, the breaſts of the perſons concerned therein; diſcovers their intentions and views; and, by the reſult of enterprizes and undertakings, diſcovers the prudence or weakneſs wherewith they were laid, conducted, &c. Theſe are much the moſt uſeful and entertaining hiſtories. To this claſs may be particularly referred the Hiſtories and Annals of Tacitus, among the ancients; and thoſe of Guicciardin, Thuanus, and biſhop Burnet, among the moderns.

HISTORY, *mixed*, is that which, beſides the ornaments of figured hiſtory, calls in the proofs and authorities of ſimple hiſtory, furniſhing authentic memoirs, or original letters, maniſeſtoes, declarations, &c. to vouch the truth of what is ſaid. Such are Hiſtories or Collections of Ruſhworth, M. Rapin Thoyras's Hiſtory of England, the Genealogical Hiſtories of Ducheſne, M. De Marca's Hiſtory of Berne, &c.

We ſhall cloſe this article of Hiſtory in general, with a brief recapitulation and illuſtration of the benefits that are likely to reſult from the diligent ſtudy of it; and here we ſhall avail ourſelves of the excellent remarks of Dr. Prieſtley in his "Lectures on Hiſtory." The firſt and loweſt uſe of hiſtory is, that it agreeably amuſes the imagination, and intereſts the paſſions, and, in this view of it, it far ſurpaſſes all works of fiction. The latter reſembles thoſe machines that are contrived to illuſtrate the principles of philoſophy, ſuch as globes and orreries, the uſes of which extend no farther than the views of human ingenuity: whereas real hiſtory reſembles the experiments made by the air-pump, the condenſing engine, or electrical machine, which exhibit the operations of nature, and the God of nature himſelf, whoſe works are the nobleſt ſubject of contemplation to the human mind, and are the ground-works and materials of the moſt extenſive and uſeful theories. Fiction requires a variety of embelliſhments to excite and intereſt the paſſions; whilſt the mere thought that we are liſtening to the voice of truth ſerves to keep the attention awake through many dry and ill-digeſted narrations of facts. The next, and higher uſe of hiſtory, is to improve the underſtanding, and ſtrengthen the judgment, and thus to fit us for entering upon life with advantage. Hiſtory preſents us with the ſame objects which occur to us in the buſineſs of life, and affords ſimilar exerciſe to our thoughts; ſo that it may be called anticipated experience. In ſome reſpects it will be a better guide to us in the conduct of life than experience: becauſe the examples which it preſents to us are generally complete, and we ſee them through a leſs partial medium than that of experience. Hiſtory is, therefore, of great importance not only to the advancement of political knowledge, but to that of knowledge in general, becauſe the moſt exalted underſtanding is merely a power of drawing concluſions, and forming maxims of conduct from known facts and experiments, of which neceſſary materials of knowledge the mind itſelf is wholly barren, and with which it muſt be furniſhed by experience. By improving the underſtanding hiſtory frees the mind from many fooliſh prejudices that tend to miſlead it. Such are thoſe prejudices of a national kind, that have induced an unreaſonable partiality for our own country, merely as our own country, and as unreaſonable to foreign nations and foreign religion, which nothing but the enlarged views reſulting from hiſtory can cure. It likewiſe tends to remove thoſe prejudices that may have been entertained in favour of ancient or modern times, by giving a juſt view of the advantages and diſadvantages of mankind in all ages. To an inhabitant of Great Britain it will be one of the greateſt advantages reſulting from the ſtudy of hiſtory, that, ſo far from producing an indifference to his own country, it will diſpoſe him to be ſatisfied with his own ſituation, and render him, from rational conviction, and not from blind prejudice, a more zealous friend to the intereſts of his country. It is from hiſtory that all future improvements in the ſcience of government muſt be derived, and this ſcience, it will be allowed, is of primary importance and intereſt to thoſe who have ſufficient abilities for the ſtudy of it, and who are friends of mankind. Another very capital advantage of hiſtory is, that it tends to ſtrengthen the ſentiments of virtue. It conduces to this purpoſe by diſplaying the ſentiments and conduct of truly great men, and thoſe of a contrary character, and thus inſpiring us with a taſte for ſolid glory and real greatneſs; whilſt it convinces us that theſe qualities do not conſiſt in the attainments which mankind are too generally purſuing. That true greatneſs does not conſiſt in *riches* may by evinced by the examples of Cincinnatus, Fabricius, Scipio Æmilianus, and other Romans in the early ages of their city, who were honoured for their poverty. The emperors Nerva, Trajan, Antoninus, and Aurelius, ſold their palaces, their gold and ſilver plate, their valuable furniture, and other ſuperfluities heaped up by their predeceſſors, and baniſhed from their tables all expenſive delicacies. Theſe princes, together with Veſpaſian, Pertinax, Alexander Severus, Claudius the ſecond, and Tacitus, who were raiſed to the empire by their merit, and whom all ages have admired as the greateſt and the beſt of princes, were always fond of the greateſt plainneſs in their apparel, furniture, and outward appearance. When the famous Cornelia, daughter of the great Scipio, was importuned by a lady of her acquaintance to ſhew her toilette, ſhe deferred ſatisfying her curioſity till her children, who were the famous Gracchi, came from ſchool, and then ſaid “En! hæc ornamenta mea ſunt.” “Theſe are my ornaments.” Can we think that *honours* and *preferments* conſtitute true greatneſs, when hiſtory teaches us that the moſt worthy men have generally declined them? On the other hand, the extravagances of Alexander the Great in killing his beſt friends, the cruelties of the Spaniards in America, the ruin of Sweden by Charles XII. are certainly more proper to ſhew the folly and madneſs of unbounded ambition, than their victories are to dazzle our minds with their glare. Nothing ſo effectually cures a man of the abſurd pride of *birth* and *family*, as ſeeing ſome of the greateſt men in hiſtory, ſuch as Tamerlane, cardinal Ximenes, and pope Sixtus V. riſe from low beginnings. Even Veſpaſian laughed at thoſe who pretended to derive his deſcent from Hercules. An exceſſive paſſion for *fame*, as an end of action, reduces a man very low in the light of hiſtory. On the contrary, how prodigiouſly does the character of Cato riſe upon us by a few words of Salluſt: “Maluit eſſe, quam videri, bonus;” “He rather choſe to *be*, than to *ſeem*, good.” The vanity of Nero upon his excelling in muſic, and gymnaſtic exerciſes, and of Commodus on his dexterity in killing wild beaſts, completely expoſes the affectation of gaining eminence in what is out of our proper ſphere. The ſame maxim is conveyed by Philip, when he aſked his ſon Alexander, if he was not aſhamed to play on a muſical inſtrument ſo well as he did. A ſimple narration of ſome hiſtorical incidents excites an admiration of true greatneſs of mind more than the moſt elaborate deſcription of it. What can give us a clearer idea of the noble ſentiments of ſtrict honour and integrity, than Marſhal Turenne's refuſing a ſum of money, which was offered him, if he would not march his army through a certain territory, becauſe he had not intended to march that way! Does not every perſon's heart ſtrongly feel the ſentiments of benevolence, when he hears the good Titus exclaiming, that he had “loſt a day,” becauſe he had done no perſon a good office in it! If a perſon be capable of forming any idea of greatneſs of mind in forgiving injuries, he will do it from hearing the following reply made by Lewis XII. to a courtier, who preſſed him to puniſh a perſon who had offended him before he came to the throne; “It belongs not to the king of France to revenge the injuries offered to the duke of Orleans?” Or, what can give ſo juſt an idea of the true ſpirit and magnanimity of a ſoldier, as the reply that viſcount Dorée made to Charles IX. of France, when he received an order from him to maſſacre the Huguenots; “I deſire your majeſty would employ me in what is *poſſible*.” This example ſuggeſts alſo, that hiſtory enables us to form juſt ideas of the dignity and the weakneſs of human nature, both of which are extremely uſeful to us in life. When the earl of Peterborough, at the ſiege of Barcelona, was ſettling the terms of capitulation with the Spaniſh commander, news was brought him that, contrary to the ſuſpenſion of arms ſtipulated between them, a party of the allied troops had broken into the town. The earl, with a noble ſpirit of true honour and heroiſm, told the Spaniſh general, that if he would give him leave to enter the town with his Engliſh troops, he would drive out his allies, and then return to finiſh the capitulation, which he actually performed. Without mentioning the fabulous ſtory of Curtius, who is ſaid to have leaped into a gulph, or of Codrus, who procured his own death to ſave his country, we may obſerve, that at the ſiege of Turin one Mica fired a mine, and purpoſely deſtroyed himſelf with the enemy. And how many commanders of ſhips have blown them up rather than ſtrike their colours! Such facts, together with thoſe which manifeſt the extent of genius, in men like Ariſtotle, Archimedes, and ſir Iſaac Newton, give us high ideas of the dignity of human nature, and the capacity of the human mind. Hiſtory alſo, with equal fidelity, gives us a moſt affecting, and equally inſtructive view, of our deplorable weakneſs and frailty, exemplified in the occaſional conduct of the greateſt of men. What groſs and humiliating ſuperſtitions have been manifeſted by men, in other reſpects, of ſound and clear underſtandings, and of upright honeſt hearts! Paſcal, one of the greateſt geniuſes and beſt men that ever lived, entertained a notion, that God made men miſerable here in order to their being happy hereafter; and in conſequence of this notion, he impoſed upon himſelf the moſt painful mortification. He even ordered a wall to be built before a window in his ſtudy, which afforded him too agreeable a proſpect. He alſo had a girdle full of ſharp points next his ſkin, and while he was eating or drinking any thing that was grateful to his palate, he was conſtantly pricking himſelf, that he might not be ſenſible of any pleaſure. It was through a ſimilar weakneſs that the excellent Fenelon ſubmitted without reſerve to the arbitrary ſentence of the pope, when he condemned a book which he had publiſhed, and even preached in condemnation of his own book, forbidding his friends to defend it. (See the articles FENELON and PASCAL.) Moreover, hiſtory tends to ſtrengthen the ſentiments of virtue, by the variety of views in which it exhibits the conduct of divine providence, and points out the hand of God in the affairs of men.

For whatever ſuggeſts to us the idea of a divine being, either in the end, or means, of great events, muſt be favourable to piety and virtue. Who would have imagined, that the deſire which Henry VIII. had to be divorced from his wife would have brought about the reformation in England? The indiſcretion of a Portugueſe prieſt, who would not give place to one of the king's officers in Japan, and the obſtinacy of the Jeſuits, in refuſing to give up the houſe which a nobleman had given them, when his ſon claimed it back again, occaſioned the extirpation of the Roman Catholic religion in that country. The hiſtory of Joſeph, that of Eſther and Mordecai, and many others that are recorded in the inſtructive pages of the Old Teſtament, ſupply facts to the ſame purpoſes. Great events, under the conduct of providence, are brought about contrary to the intention of the perſons who were the chief inſtruments of them, and by the means which were intended to produce a contrary event. Thus perſecution has been always the means of promoting the perſecuted religion; and thus the well-known adage has been verified: "The blood of the martyrs is the ſeed of the church." Thus, likewiſe, Athens, Lacedæmon, Carthage, Rome, and many other ſtates, have been ruined by their own ſucceſſes. Philip II. of Spain, by his intolerable oppreſſion, was the cauſe of the freedom of the ſtates of Holland. A regard to divine providence is alſo extremely uſeful to heighten our ſatisfaction in reading hiſtory, and throw an agreeable light upon the moſt gloomy and diſguſting parts of it. Moreover, hiſtory, in the miſfortunes and hardſhips to which the moſt diſtinguiſhed perſonages have been reduced, gives us a deep conviction of the inſtability of all human things, and prepares our minds to ſubmit to adverſity with more patience and reſignation, as to a condition from which we ſee none are exempt. What other ſenſation do we feel, while we read that Henrietta, daughter of Henry IV. of France, and wife to Charles I. of England, was reduced to the utmoſt poverty; and that her daughter, afterwards married to a brother of Lewis XIV. is ſaid to have lain in bed for want of coals to keep her warm, while the people of Paris, blind with rage, paid no attention to her ſufferings! Similar ſenſations are felt, when we read the hiſtory of Beliſarius, the great and ſucceſsful general, who is ſaid to have begged his bread, and of Cortez, the renowned conqueror of Mexico, who lived unknown and diſgraced in Spain, and was ſcarcely able to obtain an audience of his maſter, Charles V., though, when the king aſked who was the fellow that was ſo clamorous to ſpeak to him, he cried out, "I am one who have got your majeſty more provinces than your father left you towns." Beſides, the reverſes of fortune, and calamities of men in high ſtations, ſhould diſpoſe thoſe who have no opportunity of riſing above them, to be content with their ſituation. The many who have abdicated royalty, as Chriſtina, queen of Sweden, Charles V. emperor of Germany, Victor Amadeus, king of Sardinia, John Caſimir, king of Poland, and others, convince us that crowns do not always ſit eaſy; and that perſons in high ſtations have need of a ſtrong ſenſe of honour and integrity to make their fatigues and misfortunes tolerable. In many inſtances they are objects, not of envy, but of commiſeration; and they claim the exerciſe of a candid judgment. The examples of diſtinguiſhed perſonages are apt to make a deeper impreſſion on the mind than thoſe of perſons, ſubject to viciſſitude, in the humbler ſtations of life. The inſufficiency of power and riches to bound men's views and to make them happy, is evinced in a thouſand inſtances of almoſt daily occurrence; but the ſentiment makes a deeper impreſſion when we ſee it exemplified in the hiſtory of ſtateſmen and conquerors. It is beautifully exhibited in a converſation which paſſed between Pyrrhus and his miniſter Cyneas, before their expedition into Italy. The miniſter aſked the king what he propoſed to do when he had ſubdued the Romans? He anſwered, paſs into Sicily. What then? ſaid the miniſter. Conquer the Carthaginians, replied the king. And what follows that? ſays the miniſter. Be ſovereign of Greece, and then enjoy ourſelves, ſaid the king. And why, replied the ſenſible miniſter, can we not do this *laſt* now?

Beſides the benefits reſulting from the ſtudy of hiſtory, above briefly recited and illuſtrated, there are other advantages accruing to mankind from it, in a different manner, as only one inſtrument of recording tranſactions. How imperfect, *e. g.* without hiſtory, would be our knowledge of genealogies, and conſequently of the order of important ſucceſſions, and how precarious would be the advantage, reſulting from conventions and treaties of all kinds, if all the articles of them were repoſited only in the memory of the contracting parties. We read that the boundaries of the Grecian ſtates were once determined by a verſe of Homer, who, in his deſcription of Greece, relates what they were in his time.

If hiſtory be of ſuch diſtinguiſhed uſe, we may eaſily anſwer a queſtion that has been ſometimes propoſed; *viz.* at what age it is proper to be read. We need not heſitate in pronouncing, that it can neither be begun too early, nor continued too late. "If hiſtory amuſe the imagination, exerciſe and improve the paſſions, inſpire a taſte for true glory, juſt ſentiments of, and a love for, virtue, and thereby form the *temper,* and prepare man for converſing with the world; what can be more proper for young perſons? And ſince the mind cannot be too well furniſhed in theſe reſpects, and men cannot have too large a ſtock of this *anticipated experience,* the ſtudy of it muſt be uſeful, while there remains any thing of the part we have to act on the theatre of the world. Moreover, ſince hiſtory furniſhes materials for the fineſt ſpeculations, and the moſt important ſciences, it cannot but be of ſervice while we make any uſe of our intellectual faculties." Prudence will direct thoſe who have the conduct of the ſtudies of young perſons to make a proper ſelection. Hiſtories, which tend chiefly to amuſe the imagination, or enforce the plaineſt inſtructions in morals, ought rather to be recommended to perſons in early life; and hiſtories which furniſh greater exerciſe for the judgment ſhould be reſerved for an age in which the judgment is riper. However, there can be no great inconvenience in young perſons' being indulged in reading almoſt all hiſtories promiſcuouſly. No general hiſtory is better calculated for the uſe of ſuch than that of Rollin.

As to the advantages that reſult from the ſtudy of *eccleſiaſtical hiſtory,* they are *general* or *particular.* In a general view of them, the hiſtory of the church preſents to our view a variety of objects that are every way adapted to confirm our faith. When we contemplate, by the aid of it, the diſcouraging obſtacles, the united efforts of kingdoms and empires, and the dreadful calamities which Chriſtianity, in its very infancy, was obliged to encounter, and over which it gained an immortal victory, this will be ſufficient to fortify its true and zealous profeſſors againſt all the threats, cavils, and ſtratagems of profane and impious men; the great and ſhining examples, alſo, which diſplay their luſtre, more or leſs, in every period of the Chriſtian hiſtory, muſt have an admirable tendency to inflame our piety, and to excite, even in the coldeſt and moſt inſenſible hearts, the love of God and virtue. Thoſe amazing revolutions and events that diſtinguiſhed every age of the church, and often ſeemed to ariſe from ſmall beginnings and cauſes of little conſequence, proclaim, with a ſolemn and reſpectable voice, the empire of providence,

vidence, and alſo the inconſtancy and vanity of human things. And among other numerous advantages that reſult from the ſtudy of eccleſiaſtical hiſtory, it is none of the leaſt, that we ſhall thus ſee the origin and occaſions of thoſe ridiculous rites, abſurd opinions, fooliſh ſuperſtitions, and pernicious errors, with which Chriſtianity is yet disfigured in too many parts of the world. This knowledge will naturally lead us to a view of the truth in its beautiful ſimplicity, will engage us to love it, and render us zealous in its defence; not to mention the pleaſure and ſatisfaction that we muſt feel in reſearches and diſcoveries of ſuch an intereſting kind. But in a more particular view of this ſubject, thoſe who are appointed to inſtruct youth in the public univerſities, and alſo thoſe who are ſet apart for the ſervice of the church, will derive from this ſtudy the moſt uſeful leſſons of wiſdom and prudence, to direct them in the diſcharge of their reſpective offices. The inconſiderate zeal and temerity of ſome, pourtrayed in their pernicious conſequences, will teach circumſpection; and the miſtakes into which men of eminent merit and abilities have been betrayed will point out the errors to be avoided, and the ſacrifices to be made, in order to maintain peace and concord in the church; and, on the other hand, illuſtrious examples and ſalutary meaſures will furniſh a rule of conduct, a lamp to ſhew them the paths they muſt purſue. Beſides, if we except the arms which ſcripture and reaſon ſupply againſt ſuperſtition and error, nothing can enable us to combat them with more efficacy than the view of their deplorable effects, as they are repreſented to us in the hiſtory of the church. Moſheim's Eccl. Hiſt. vol. i. Introduction.

HISTORY is alſo uſed for a *Romance*, or a fabulous but probable relation of a ſeries of actions or adventures feigned or invented by the writer. See ROMANCE.

Such is the Hiſtory of the Civil Wars of Grenada, the Hiſtory of Don Quixote, the Ethiopic Hiſtory of Heliodorus, &c.

HISTORY, in *Painting*. See HISTORICAL *Painting*.

HISTRIA, a peninſula, N.E. of the gulf of Venice. The firſt inhabitants of this country were probably Thracians, or more anciently Celtes. The Greeks called the part of the Danube with which they were acquainted "Iſter," and it is probable that thoſe who peopled Hiſtria were more anciently known on the banks of the Iſter. The principal place of Iſtria was Pola.

HISTRIO, in the *Ancient Drama*, ſignified an actor or comedian; but more eſpecially a pantomime, who exhibited his part by geſtures and dancing. See PANTOMIME.

Livy informs us that the hiſtriones were brought to Rome from Etruria in the year of the city 391, Dec. i. lib. 7. See HISTER.

HISTRIO, in *Ichthyology*. See LOPHIUS *Compreſſus*.

HISTRIX, in *Zoology*. See HYSTRIX.

HIT, in *Geography*, a town of the Arabian Irak, on a river of the ſame name, which ſoon after joins the Euphrates; near it is a ſpring of naphtha and bitumen; 100 miles W. of Bagdad.

HITCH, on *Ship-board*, a word denoting a ſort of knot or nooſe, by which one rope is faſtened to another, or to ſome other object, and hence uſed for catching hold of any thing with a hook or a rope, and to hold it faſt. Thus, when the boat is to be hoiſed in, they ſay, hitch the tackles into the rings of the boat; and, when about to weigh anchor, hitch the fiſh-hook to the fluke of the anchor.

HITCH, in *Mining*, ſignifies a fault in ſome diſtricts, and has been defined to be a narrow fiſſure whoſe up-throw or down-caſt does not much exceed five feet; others have ſaid that a hitch never entirely ſeparates a coal-ſeam, or never deranges as much as its thickneſs; we believe, however, that the miners are not more conſiſtent or agreed on theſe diſtinctions, than in the meaning of near 70 names which they have among them for the highly curious phenomenon called a *fault*. See that article.

HITCHEL, the ſame with hatchel.

HITCHER, in *Nautical Affairs*, is a pole, armed with an iron point and hook, which is uſed on board of barges or boats for either pulling or ſhoving them to or off each other, or a wharf, ſhip, &c. On moſt canals pointed hitchers are prohibited to the boatmen, on account of the damage they do to the lining of puddle in the bottom of the canal to retain its water, as mentioned in our article CANAL.

HITCHIN, in *Geography*, a large and ancient market-town and pariſh in the hundred of Hitchin and Pirton, Hertfordſhire, England, is ſituated in a fertile valley, and ſurrounded by conſiderable eminences. It appears to have had its origin in the Saxon times, and was granted by Edward the Confeſſor to earl Harold, by the appellation Hitche. In the Doomſday book it is called Hiz, a name that, according to Chauncy, it received from the little river Hiz, which flows through it. At the period of making that ſurvey it belonged to the king, and was rated at five hides; two of which are deſcribed as lying "in monaſterio hujus villæ." Hitchin church is a handſome edifice of ſtone, occupying the ſcite of a more ancient fabric near the centre of the town, and apparently of the age of Henry VI. or Edward IV. The interior is ſpacious, and conſiſts of a nave, chancels, and ſide aiſles: its length is upwards of 150 feet; its breadth 67. The ſepulchral monuments are very numerous. An inſcription for ſir Robert de Kendale, knight, and three effigies greatly mutilated, which are now placed under windows of the north aiſle, are of more ancient date than the preſent ſtructure. The firſt or moſt weſtward of theſe effigies repreſents a knight croſs-legged, in chain armour; and was probably deſigned for one of the Baliols, who were lords of this manor during the 12th and 13th centuries. The other two figures are the effigies of ſir Edward de Kendale, knight, lord of Hitchin, and his lady, who both died towards the end of the reign of Edward III. Some very fine braſſes, of the 15th and 16th centuries, occur in different parts of the church; and the windows contain much painted glaſs. At a ſhort diſtance ſouth-eaſt of the church was formerly the priory of Biggin, founded for nuns of the Gilbertine order; but at what period is uncertain. The ſcite is now occupied by the ſchool-houſe, and the appendant-eſtate is veſted in truſtees for charitable uſes. Hitchin priory was founded for white Carmelites in the time of Edward II.: very few traces of it remain; on the immediate ſcite is now a family manſion. The market at Hitchin, held on Tueſdays, has exiſted from an early period, and very large quantities of wheat and other grain are ſold in it; probably in ſome degree from being free of toll, by preſcriptive right. Two fairs are held annually for the ſale of cattle, ſheep, &c. Formerly the wool trade was very flouriſhing here; this town having become the reſidence of many merchants on the removal of the ſtaple from Calais by Edward III. The town is divided into three wards, *viz.* Bancroft, Bridge, and Tilehouſe wards, and is governed by a bailiff, four conſtables, and two headboroughs for each ward. Among numerous charitable donations in this pariſh, are thoſe of John Skynner, gent. who, in the year 1668, beſtowed 300*l.* to build almſhouſes; 300*l.* to purchaſe lands for their endowment; 100*l.* to apprentice poor children; and 100*l.* towards the further endowment of the free-ſchool. Hitchin is 34 miles diſtant from London: and, according to the returns under the population act of 1801, contained 674 houſes (moſtly irregular buildings),

buildings), and 3161 inhabitants. Chauncy's Hiſtorical Antiquities of Hertfordſhire.

HITCHING, in *Horſemanſhip*, is to wriggle or move forwards by degrees, or to knock the legs together in walking.

HITHE, in *Geography*. See HYTHE.

HITSACKER, a town of the principality of Luneberg-Zelle, ſituated on an iſland in the Jetze; 29 miles E. of Luneburg. N. lat. 53° 17′. E. long. 14° 12′.

HITTERO, or HITTEREN, an iſland in the Northern ocean, near the coaſt of Norway. N. lat. 63° 32′. E. long. 8° 20′.

HIU, a city of China, of the ſecond rank, in the province of Honan. N. lat. 34° 5′. E. long. 113° 35′.

HIVE, in *Rural Economy*, the name of a well known repoſitory for bees. Bee-hives, in different places, and on different occaſions, are of very different materials. In ſome places the hollow trunk of a tree ſerves the purpoſe; in others they are made of four boards nailed together in the ſhape of a long box, and placed with one end upon the ground, or upon a frame of wood-work erected for that purpoſe. The moſt uſual form of them, however, is conic and bell-faſhioned; and the common materials of which they are made are twiſted oſier or ſtraw, nicely matted together, and made into a ſort of thick cords, bound round with oſier-bark. The laſt is the moſt common kind, and ſerves perfectly well for all the purpoſes of the bees, and of the perſons who make their profits of the honey. The lodgment is ſufficiently warm and cloſe for the bees, and a thin frame of boards defends it from being injured by the wet. But perſons of ſpeculative diſpoſitions have at all times been deſirous of ſeeing what paſſed in the hive, and of obſerving theſe induſtrious inſects at their work: for this purpoſe the ancients contrived a method of placing certain ſquares or panes of a tranſparent matter, ſuch as horn, or the lapis ſpecularis, or iſinglaſs, in ſome parts of the ſides of the hive, through which they might ſee all that paſſed within. This is mentioned by Ariſtotle, Pliny, and others; but it ſoon ſunk into diſuſe, and in later ages it has been ſuppoſed to be an idle attempt. Mouffet in particular ridicules it, and ſays, that the bees within would immediately ſpoil the tranſparence of any materials thus employed.

This practice of the ancients ſeems to have been firſt revived in our country by Mr. Jeddie, who, in the year 1665, publiſhed his invention of boxes for preſerving the lives of bees, and obtained a patent from king Charles. Theſe were improved by Joſeph Warder, phyſician at Croydon, who enriched his account of the ſtructure and uſe of theſe boxes, with ſeveral other curious circumſtances concerning bees, in his work entitled "The true Amazons, or the Monarchy of Bees." But this method was far from being generally known in the year 1680, ſince Swammerdam ſeems to have been altogether unacquainted with it; and to this we are to impute the imperfections of that author's account of bees, becauſe, though a moſt accurate and faithful writer, he had no opportunities of ſeeing what has been ſince diſcovered with this advantage.

Of late, however, this invention has been commonly practiſed. A tranſparent ſort of bee-hive may eaſily be made, by leaving certain ſquares in a wooden hive open, and afterwards faſtening clear glaſs in theſe vacant ſpaces; a frame of wood may cover the whole, ſo that the light is not always let in upon the bees, and the covering may be removed when the obſerver is to examine their operations. By this means it is found, that the ſquares of glaſs, when properly placed, will keep clean and tranſparent for many years; and when they are ſullied, there are eaſy methods of cleaning them, by taking them out and replacing them when they have been wiped. When the obſerver places himſelf behind the hive, and has one of theſe ſquares of glaſs before his eye, he ſees exactly all that paſſes within, without incommoding or interrupting the creatures at their work. Theſe glaſs hives, however, are chiefly objects of curioſity, though, in ſome inſtances, they have led to diſcoveries that muſt gradually contribute to the improvement of the economy of theſe uſeful inſects.

The principal advantage derived from hives of modern conſtruction, is that of obtaining the honey and wax without recurring to the barbarous expedient of deſtroying the bees. In the common method, a hole is dug near the hive, (generally in the month of September,) and a ſtick, at the end of which is a rag that has been dipped in melted brimſtone, is fixed in the hole; and, when the rag is ſet on fire, the hive is immediately put over it, and the earth thrown up round it, ſo that none of the ſmoke can eſcape; and thus the bees are inhumanly and needleſsly deſtroyed. The heavieſt and lighteſt hives are treated in this manner; the former, becauſe they yield the greateſt profit, with an immediate return; and the latter, becauſe the bees in them would not be able to ſurvive the winter. Thoſe hives which weigh from fifteen to twenty pounds are thought to be the fitteſt for keeping. The method of preſerving the lives of bees has been brought to a conſiderable degree of perfection by the late Mr. Thorley of Oxfordſhire, and Mr. White of Suffolk. Mr. Thorley, who takes the lead in this improvement, prefers colonies to hives for the following reaſons: 1. The more certain preſervation of many thouſands of theſe uſeful inſects. 2. Their greater ſtrength, conſiſting in their number, and their correſponding ſecurity from robbers. 3. Their greater wealth, ariſing from their united labours. To this purpoſe he tells us, that he has, in ſome ſummers, taken two boxes filled with honey (moſt of it being pure virgin honey of the beſt kind) from one colony, and left ſufficient ſtore for their maintenance: add to theſe advantages, the pleaſure of viewing them, with the greateſt ſafety, at all ſeaſons, even in their buſieſt time of gathering, and their requiring much leſs attendance in ſwarming time. The bees thus managed are alſo more effectually ſecured from wet and cold, from mice, and other injuries.

Mr. Thorley's boxes are made of deal, which, being ſpongy, ſucks up the breath of the bees ſooner than a more ſolid wood would do; and yellow dram-deal, thoroughly ſeaſoned, he ſays, is the beſt.

The beſt form of theſe boxes is an octagon, which, being nearer to a ſphere, allows the bees in winter to lie in a round body near the centre of the hive; and thus a due heat is conveyed to all the exterior parts, and the honey is kept from candying. The dimenſions, which he recommends, after long trial, are ten inches deep in the inſide, the top-board a full inch, and the breadth within twelve or fourteen inches. He has tried boxes containing a buſhel or more, but found them not to anſwer the deſign like thoſe of a leſs ſize. The top of the box ſhould be made of an entire board, or of two boards well glued together, which ſhould be a full inch thick after it has been planed, and project on all ſides at leaſt an inch beyond the dimenſions of the box. In the middle of this top there muſt be a hole five inches ſquare, for a communication between the boxes; and this hole ſhould be covered with a ſliding ſhutter of deal or elm, running eaſily in a groove, over the back-window. The eight pannels, nine inches deep, and three quarters of an inch thick when planed, are to be let into the top, ſo as to keep them in their proper places; to be ſecured at the corners with plates of braſs, and to be cramped with wires at the bottom, in order to keep them firm. There ſhould be a glaſs window behind, fixed in a frame, with a thin deal cover, two ſmall braſs hinges, and a button to faſten it: this window will ſerve for inſpecting the ſtate and operations of the bees. Two braſs handles, one on each ſide, are neceſſary to lift up the box; theſe ſhould be fixed in with two thin plates of iron, near three inches long, ſo as to turn up and down with the box, and put in three inches below the top-board, which is nailed down cloſe with ſprings to the other parts of the box. Thoſe who chooſe a frame within, to which the bees may faſten their combs, need only uſe a couple of deal ſticks of an inch ſquare, placed acroſs in the box, and ſupported by two pins of braſs; one an inch and a half below the top, the other two inches below it; by which means the combs will quickly find a ſtay. There muſt alſo be a paſſage, four or five inches long, and leſs than half an inch deep, for the bees to go in and out at the bottom of the box.

The boxes, thus prepared, ſhould be kept in a houſe, or under a ſhed, the diſpoſition and ſtructure of which Mr. Thorley has particularly deſcribed. He alſo recommends to paint the apertures of the boxes, which are the habitations of the ſeveral colonies, with different colours, as red, white, blue, yellow, &c. in form of a half-moon or ſquare, that the bees may the better know their own home. For the method of furniſhing theſe colonies with inhabitants, ſee Hiving.

Mr. Thorley, ſon to the above-mentioned gentleman, has, by long experience, improved his father's method of managing bees. The bee-hive of his conſtruction, preſented to the Society of Arts, &c. is exhibited in *Plate* XX. *Miſcellany, fig.* 1.

The bottom part, marked *a*, is an octangular bee-box, made of deal-boards, about an inch in thickneſs, the cover of which is externally 17 inches in diameter, but internally only 15½, and its height 10 inches. In the middle of the cover of this octangular box is a hole, which may be opened or ſhut at pleaſure, by means of a ſlider *d*. In one of the pannels is a pane of glaſs, covered with a wooden door *e*. The entrance *f*, at the bottom of the box, is about three and a half inches broad, and half an inch high. Two ſlips of deal about half an inch ſquare, croſs each other in the centre of the box, and are faſtened to the pannel by means of ſmall ſcrews: to theſe ſlips the bees faſten their combs. In this octangular box the bees are hived, after ſwarming in the uſual manner, and there ſuffered to continue till they have built their combs and filled them with honey; which may be known by opening the door, and viewing their works through the glaſs pane, or by the weight of the hive.

When the bee-maſter finds his laborious inſects have filled their habitation, he is to place a common bee-hive of ſtraw, repreſented at *b*, made either flat at the top, or in the common form, on the octangular box, and drawing out the ſlider, a communication will be opened between the box and the ſtraw hive; in conſequence of which the bees will fill this hive alſo with the product of their labours.

When the ſtraw hive is well filled, the ſlider may be puſhed in, and the hive taken away, and another placed in its room, with the ſlider drawn out. This new hive will alſo be filled in the ſame manner.

By proceeding in this method, Mr. Thorley aſſured the ſociety, that he had taken three ſucceſſive hives filled with honey and wax, from a ſingle hive, during the ſame ſummer, and that the food ſtill remaining in the octangular box was ſufficient for the ſupport of the bees during the winter. He adds, that if this method was purſued in every part of the kingdom, inſtead of the cruel method of deſtroying theſe uſeful inſects, he is perſuaded, from long experience, that wax would be collected in ſuch plenty, that candles made with it might be ſold as cheap as thoſe of tallow are ſold at preſent.

Mr. Thorley has alſo added another part to his bee-hive, which cannot fail of affording the higheſt entertainment to a curious and inquiſitive mind. This part conſiſts of a glaſs receiver, 18 inches high, eight inches in diameter at the bottom, and in the greateſt part 13; this receiver has a hole at the top, about an inch in diameter, through which a ſquare piece of deal is extended nearly to the bottom of the veſſel, having two croſs-bars, to which the bees faſten their combs. Into the other end of this ſquare piece is ſcrewed a piece of braſs, which ſerves for a handle to the receiver or glaſs hive. When the bees have filled their ſtraw hive, which muſt have a hole in the centre covered with a piece of tin, Mr. Thorley places the glaſs receiver upon the top of the ſtraw hive, and draws out the piece of tin. The bees, now finding their habitation enlarged, purſue their labours with ſuch alacrity, that they fill this glaſs hive likewiſe with their ſtores; and as this receptacle is wholly tranſparent, the curious obſerver may amuſe himſelf with viewing the whole progreſs of their works. It will, however, be neceſſary to cover the glaſs with an empty hive of ſtraw, or at leaſt with a cloth, which may be eaſily removed when the bees are inſpected, leſt too much light prevent their working. In this way Mr. Thorley, in a good ſeaſon, has had a glaſs filled in thirty days, containing 38 pounds of fine honey.

When the glaſs is completely filled, ſlide a tin plate between the glaſs and the hive or box, ſo as to cover the paſſage, and in half an hour the glaſs may be taken away with ſafety. The few bees that remain will readily go to their companions.

Mr. Thorley has added a glaſs window to his ſtraw hives, in order to obſerve the progreſs of the bees; and this contrivance is uſeful, eſpecially if one hive is to be removed whilſt the ſeaſon continues favourable for their collecting of honey; for when the combs are filled with honey, the cells are ſealed up, and the bees forſake them, and reſide moſtly in the hives in which their works are chiefly carried on. Obſerving alſo, that the bees were apt to extend their combs through the paſſage of communication into the upper hive, which rendered it neceſſary to divide the comb when the upper hive was taken away, he puts in that paſſage a wire ſcreen for netting, the meſhes of which are large enough for a loaded bee to paſs eaſily through them; and thus he prevents the junction of the combs from one box to the other, and conſequently obviates the neceſſity of cutting them, and of ſpilling ſome honey, which running down among a crowd of bees, incommoded them much.

Mr. White, in his directions for making the bee-boxes of his invention, tells us, ſpeaking of the conſtruction of a ſingle box, that it may be made of deal or any other well-ſeaſoned boards, which are not apt to warp or ſplit. The boards ſhould be near an inch thick; the figure of the box ſquare, and its height and breadth nine inches and five-eighths every way, meaſuring within. A box of theſe dimenſions will contain near a peck and a half. The front part muſt have a door cut in the middle of the bottom edge, three inches wide, and near half an inch high. In the back part a hole muſt be cut with a rabbet in it, in which is to be fixed with putty a pane of the cleareſt and beſt crown glaſs, about five inches long, and three broad; and let the top of the glaſs be placed as high as the roof withinſide, that the upper part of the combs may be ſeen; and thus the ſtate and ſtrength of the bees may be judged better of than if the glaſs were fixed in the middle. The glaſs muſt be covered with a thin piece of board, as a ſhutter, which may be made to hang by a ſtring, or turn upon a nail, or ſlide ſideways between two mouldings. The glaſs may be made large, or another pane of glaſs may be fixed on the top and covered with a ſhutter, for the convenience of obſerving the bees at their work. The ſide of the box, which is to be joined to another box of the ſame form and dimenſions, as it will not be expoſed to the external air, may be made of a piece of ſlit deal not half an inch thick. This Mr. White calls the ſide of communication, becauſe it is not to be wholly incloſed: a ſpace is to be left or cut at the bottom through the whole breadth of the box, and a little more than an inch in height, and a hole or paſſage is to be made at the top, three inches long, and more than half an inch wide. Through theſe the bees are to have a communication from one box to another. In the next place a looſe board is to be provided, which board is to be half an inch thick, and large enough to cover the ſide of communication; and likewiſe ſeveral little iron ſtaples, an inch and a half long, with the two points or ends bending down more than half an inch: the uſe of this part of the apparatus will appear under the article Hiving. Moreover, let two ſticks be fixed in the box tranſverſely and croſſing each other, in order to be a ſtay to the combs; one about three inches from the bottom, and the other at the ſame diſtance from the top; and when the hole is painted, in order to render it more durable, the box is finiſhed. This box, ſays the inventor, is as plain as poſſible: it is little more than five ſquare pieces of board nailed together, ſo that any poor cottager may make his own boxes, without the help or expence of a carpenter.

The other box muſt be exactly of the ſame form and dimenſions; and the two boxes differ only in this, that the ſide of communication of the one muſt be on the right hand, and of the other on the left. The two boxes, with their openings of communication ready to be joined to each, are repreſented in *Plate* XX. *Miſcellany*, *fig.* 2.

In *fig.* 3, is exhibited the front of a frame for twelve colonies; *a*, *a*, are two ſills of oak, lying flat on the ground, more than four feet long: in theſe ſills are fixed four oaken poſts, about the thickneſs of ſuch as are uſed for drying linen. The two poſts *b*, *b*, in the front, are about ſix feet two inches above the ſills; the other two, ſtanding backward, five feet eight inches. You are next to nail ſome boards of ſlit deal horizontally from one of the fore-poſts to the other, in order to ſcreen the bees from the ſun: let theſe boards be ſeven feet ſeven inches in length, and nailed to the inſide of the poſts, and be well-ſeaſoned, that they may not ſhrink or gape in the joints: *c*, *c*, are two ſplints of deal, to keep the boards even, and to ſtrengthen them.

Fig. 4, repreſents the back of the frame: *d*, *d*, *d*, *d*, are four ſtrong boards of the ſame length with the frame, on which the boxes are to be placed; let the upper ſide of them be very ſmooth and even, that the boxes may ſtand true upon them, or it may be more adviſeable to place under every pair of boxes a ſmooth thin board, as long as the boxes, and about a quarter of an inch wider. The bees will ſoon faſten the boxes to this board in ſuch a manner, that you may move or weigh the boxes and board together, without breaking the wax or reſin, which, for many reaſons, ought to be avoided.

Theſe floors muſt be ſupported by pieces of wood or bearers, *e*, *e*, &c. which are nailed from poſt to poſt at each end: they are likewiſe to be well nailed to the frame, to keep them from ſinking with the weight of the boxes: *f* repreſents the roof, which projects backwards about ſeven or eight inches beyond the boxes, to ſhelter them from the rain.

You have now only to cut nitches or holes in the frame over-againſt every entrance into the boxes, as *h*, *h*, *h*, *fig.* 3, let theſe nitches be near four inches long, and under each nail a ſmall piece of wood for the bees to light upon. The morning or evening ſun will ſhine upon one or both ends of the frame, let its aſpect be what it will; but you may prevent its over-heating the boxes, by a looſe board ſet up between the poſts, and kept in by two or three pegs.

In order to take away part of the honey, without deſtroying or much diſturbing the bees, Mr. White adviſes to examine the ſtate of the colonies about the latter end of Auguſt through the glaſſes; and he obſerves, that ſuch as have filled a box and a half with their works may ſpare the half box; but the honey-comb ſhould be particularly examined, and about eight or nine pounds left for their winter ſtore. When this is done, open the mouth of the box you intend to take; then, with a thin knife, cut through the reſin with which the bees have joined the boxes to each other, till they are ſeparated; and, after this, thruſt a ſheet of tin gently between the boxes. The communication being thus ſtopped, the bees in the fulleſt box, where moſt probably the queen is, will be a little diſturbed; but thoſe in the other box, where there is no queen, will be in the utmoſt confuſion, running to and fro with a kind of mournful cry, and iſſuing out at the newly opened door in great diſorder: however, when they have got abroad, and diſcover their companions, they eagerly join them at the mouth of the other box. By this means, in an hour or two, you will have a box of pure honey, without a living bee to moleſt you, or any dead bees to waſte or damage the honey.

Mr. White's boxes are convenient for feeding poor ſtocks, in order to preſerve them, and alſo for removing moths and inſects from any colony that is in danger of being injured by them.

Mr. Wildman recommends the following method of taking the wax and honey, without deſtroying the bees: remove the hive, from which you would take the wax and honey, into a room, into which little light is admitted: invert the hive gently, placing it on any ſupport, and cover it with an empty hive, keeping the ſide next the window of the empty hive raiſed a little, to give the bees ſufficient light to find their way into it; while you hold the empty hive ſteadily ſupported on the edge of the full hive, between your ſide and your left arm, keep ſtriking with your hand all round the full hive from top to bottom, in the manner of beating a drum, ſo that the bees may be frightened by the noiſe, and mount out of the full hive into the empty one. As ſoon as all the bees are out of the full hive, which will generally be in about five minutes, the other hive, in which they are collected, muſt then be placed on the ſtand from which the full hive was taken, in order to receive the abſent bees as they return from the fields.

If this be done early in the ſeaſon, the operator ſhould examine the royal cells; for if any of them contain young bees, they, as well as all the combs that have young bees in them, muſt be preſerved in the hive. Take out the other combs with a long, broad, and pliable knife, cutting them from the ſides and crown as clear as poſſible, to prevent the future labour of the bees, who muſt lick up all the honey ſpilt, and remove every grain of wax. The ſides of the hive ſhould then be ſcraped with a table ſpoon, to clear away what was left by the knife.

Having thus taken the wax and honey, let a table, covered with a clean cloth, be placed near the ſtand, and giving the hive, in which the bees are, a ſudden ſhake, ſtriking at the ſame time with a conſiderable degree of force, the bees will be ſhaken on the cloth. Put their own hive upon them immediately, raiſed a little on one ſide, that the bees may the more eaſily enter; and when all are entered, place it on the ſtand as before. If the hive in which the bees are be turned uppermoſt, and their own hive placed over it, the bees will immediately aſcend into it, eſpecially if the lower ſide be ſtruck to alarm them; for the effects of fear, impreſſed on the bees by the continual noiſe, renders them, for a conſiderable time, ſo mild and tractable, that they will bear any handling, which does not hurt them, without any ſigns of reſentment.

Mr. Thorley objects to the method of driving bees, in order to obtain their honey, becauſe the honey will be foul and corrupted, and great numbers of the young brood will thus be utterly deſtroyed, and the ſtocks much reduced and endangered.

Mr. Iſaac, ſecretary to the Apiarian Society in the weſt of England, has publiſhed a ſmall treatiſe, entitled "The General Apiarian," in which, among other things, he has deſcribed the ſtructure of two hives, one called the "Moreton Hive," and the other the "Cottage Hive." The former is intended for a houſe or ſhed, and the latter for the open garden. The Moreton-hive is made of reed, ſtitched with the ſplits of willow or bramble; it is of a cylindric form, twelve inches clear in diameter, and ſix inches high; it is beſt made upon a narrow hoop with whimble bit-holes in it to receive the ſtitches of the firſt liſt or round of reed, and a mortiſe-hole in the fore-part for entrance, $2\frac{1}{2}$ inches in horizontal length by $\frac{1}{4}$th of an inch in perpendicular height: this entrance ſhould be near $\frac{1}{4}$th of an inch above the lower edge of the hoop, which edge ſhould be ſo planed as in every part to touch a plain board. The hive, thus conſtructed, ſhould be laid upon a level board, with another board upon it, which ſhould be ſo thick as not to bend under a weight of 56 pounds, which ſhould remain upon it for a day or two, till it is ſettled in a cloſe ſtate. When the hive is taken off, two of the middle liſts ſhould be cut oppoſite to the entrance for receiving a pane of glaſs, near three inches long, and as wide as the part of the two liſts taken out. The ends of the liſts, or coils, ſhould be ſecured by ſtitches made with ſoftened mole-ſnap wire. When the glaſs is faſtened with putty, the ſtitch-holes of the hoop ſhould be filled with the ſame; and then a ſmall ſtick ſhould be made to paſs *in* through the middle liſt from right to left, and *out* at the other ſide of the hive to ſerve as a ſupport for the combs. This hive ſhould have a ſet of bars cut in a round deal board, 14 inches in diameter, and $\frac{1}{2}$ an inch thick, nearly rounded to fit the hive. Of theſe bars there are ſix, and their width is $1\frac{3}{8}$ths of an inch. The openings between them, called "ſtreets," muſt be $\frac{1}{2}$ an inch wide, and extend to within an inch of the circumference of the board, which by theſe openings is converted into bars to ſupport the combs. Acroſs theſe bars, on the under ſide, it may be right to ſpring a ſmall ſtay of wood, to keep them from dividing farther, in caſe the circumference ſhould ſplit at any time. The bars muſt be faſtened on the top of the hive with deal pins, entering through the firſt into the ſecond or third liſt; then a round flat top of reed, 14 inches in diameter, muſt be faſtened to them: in this cover, and near the front of the hive, the curious may have a hole made, five inches in diameter, covered by a ſmall board, which may be turned off at pleaſure, for placing over the hole a bell-glaſs, in which the bees may, in a good ſummer, be tempted to work. For a good ſwarm there ſhould alſo be provided two other hives, with bars of the ſame ſort; but without a top. On the bars of one of them the firſt hive ſhould be placed, with the glaſſes or windows, entrances and bars, perpendicularly over each other. There ſhould alſo be four hoops, of mole-ſnap wire, faſtened about nine inches aſunder, in one of the liſts of the under hive, through which to paſs a cord over the top hive, to keep both firmly together till the ſwarm is hived and placed in the bee-houſe. It is the cord that muſt keep them together. When the bees have filled the firſt and ſecond, let them be raiſed on the third.

The "Cottage-hive" is compoſed of two parts; the higher part is like the common hives, but ſomewhat leſs in dimenſions; $11\frac{1}{4}$ inches within, from the centre of the crown to the edges; the diameter at the edges is $13\frac{1}{4}$ inches; the entrance is horizontally two inches long, and $\frac{1}{4}$ of an inch high; oppoſite to the entrance, three liſts above the edge or ſkirt is a pane of glaſs, like that in the Moreton-hive, and acroſs the line of viſion from the glaſs to the entrance, a ſtick is paſſed *in* at the right and *out* at the left. The other part is the ſection of a cone, $13\frac{1}{4}$ inches diameter in the clear, at the higher edge, and $11\frac{1}{4}$ inches at the lower edge, or mouth, which is formed by a hoop, like the Moreton-hive, with the firſt liſt ſewed in the holes of it with willow, or bramble ſplits. Over the entrance is a piece of ſloped deal, tacked to the hoop and front of the hive, to make it ſuit the front of the ſhed, or bee-houſe; but this piece ſhould not be united to it when it is to ſtand in the garden. Oppoſite to the entrance is the window for inſpection. But this part, called a "tranſit," becauſe it ſerves as a paſſage between a common hive and one of Wildman's hives, wants no croſs-ſtick to ſtrengthen the combs, as it is two inches wider at the higher than it is at the lower edge or bottom. On the higher edge of the tranſit there muſt be fixed bars, made of a round deal board, $\frac{1}{2}$ an inch thick, and $15\frac{1}{4}$ inches in diameter. The bars are 6, $1\frac{3}{8}$ inch wide; the ſtreets are five, half an inch wide, and there are two outſide ſtreets $\frac{3}{4}$ths of an inch wide, or rather more. The tranſit, when the bars are fixed, ſhould be preſſed by the weight of half a hundred, on a ſmooth ſtrong board, for a day or two, to ſettle it. The perpendicular height of the tranſit is about eight inches; and it will hold as much as the Moreton-hive. The two parts of the cottage-hive muſt be faſtened together, like the firſt and ſecond Moreton-hives, to receive the bees; and when the ſecond parts are united, it will hold nearly ſeven gallons. This is called the cottage-hive, becauſe it is the cheapeſt ever ſeen by the inventor, as it is of ſufficient dimenſions for the largeſt ſwarm, will admit of being eaſily divided and deprived, and may be reduced to accommodate a ſmall or poor ſtock, by taking off the under part againſt winter; and by means of a good cap, hoop, and cord, it may be ſecured on an open ſtand, firmly fixed on the ground, againſt all the common aſſaults of wind and weather. Its form, being nearly that of an egg, with a part of the ſmall end cut off, is more friendly to the bees, in reſpect to warmth in winter, and, therefore, better calculated for breeding in the ſpring than any other. It poſſeſſes all the advantages, without the inconveniences, of the large hive, recommended by the ingenious Mr. Butler, the father of the Engliſh Apiarians.

See on the ſubject of this article, Thorley's Inquiry into the Nature, Order, and Government of Bees, 1774; White's Collateral Bee-Boxes; Wildman, &c. on Bees; Key's Ancient Bee-Maſter's Farewell, 1796; Iſaac's General Apiarian, 1803. See Bee.

HIVE *droſs*, a name ſometimes given to crude or rough wax. See WAX.

HIVING, the placing of a ſwarm of bees in a hive, in order to have the profit of their labours. When the ſwarm of bees has left an old hive, and is placed in form of a cluſter hanging down from the branch of ſome ſhrub or low buſh, the hiving is extremely eaſy, and may be done in half an hour after the time of their being ſtill and calm in the cluſter; or it may be let alone till an hour or two before ſunſet, provided that the ſun do not ſhine too vehemently upon the place where they are, for that would diſquiet them, and force them to riſe; and, in that caſe they uſually take a long flight before they ſettle again, and are very often loſt; this, however, may at any time be prevented by placing an artificial ſcreen before them, compoſed either of coarſe cloth, or of a few branches of trees well covered with leaves.

It is commonly the branch of ſome ſhrub or tree that they ſettle upon, and we always find that they mean this as their ſettled habitation; for, however ſoon they are hived, the rudiments and beginnings of combs are found on it. It is true, they always leave theſe places, if left to themſelves, in five or ſix days; but this is not till they find them ſo inconvenient that they cannot keep them, either from their being too much ſcorched by the ſun, or expoſed to winds and rain. The quantity of wax and honey left in theſe places, when they have quitted them, abundantly proves, however, that they had meant them for their fixed abode.

When they are placed in a hive, they very ſoon find themſelves much better lodged than in the place they had provided for themſelves; and they uſually ſtay in it, and begin to work the next morning.

It might appear a very difficult taſk to get ſo large a number of bees into a hive, but it is much leſs ſo than it appears to be. They will often take poſſeſſion of the hive of their own accord when it is hung over them; but the ſhorteſt way is to hold the hive under the branch where they are, and then ſweep them down into it. This may be done with a branch of a tree with its leaves on it, or with the hand armed with a ſtrong glove, and the face covered. But there are country fellows who will go without any ſort of defence, and with their naked hand ſweep them carefully off the bough into the hive, which they hold in the other hand underneath.

It is not to be expected that the whole ſwarm will be thus ſwept peaceably into the hive; many will fly away, and many cluſters will fall beſide the hive to the ground. All this, however, creates no difficulty; for the hive being turned bottom upwards, and ſet on the ground near the tree, with its edges a little raiſed above the ſurface, thoſe bees which fell in cluſters to the ground will ſoon crawl to their companions in the hive, and ſoon after, thoſe which flew off, will deſcend and follow their example. If it happen, however, that ſome bees will obſtinately keep to the place where they at firſt fixed themſelves, the branch is to be rubbed over with the juice of ſuch plants as the creatures hate the ſmell of; ſuch are elder, rue, and ſome others; and if this does not ſucceed, there muſt be linen rags burnt under them, the ſmoke of which will ſoon drive them off, and make them join their companions, who find themſelves more at eaſe in the hive.

As it is neceſſary to render the places diſagreeable to the bees from which they are to be taken into the hive, ſo, many people think it very proper to prepare the hive for their reception, by ſcenting it with ſuch things as they love the ſmell of. To this purpoſe they rub the inſide of it with baum and bean-flowers, and daub a little honey in ſome parts of it. This, however, does not ſeem neceſſary, thoſe hives having been found to ſucceed full as well where it was not done, as thoſe where it was. Reaumur's Hiſt. Inſ. vol. x. p. 205.

Another method of getting a ſwarm from a branch of a high tree, is to cut off the branch with a ſaw, as gently and with as little diſturbance to the bees as poſſible. In this caſe, when the branch is off, a man may carefully deſcend with it, and the bees will not quit their hold, but will be all carried where he pleaſes with it, and may by that means be very eaſily put into a hive.

Sometimes the bees, which go out in a ſwarm, fix upon a hole in a wall, or a hollow in the trunk of a tree, for the aſſembling themſelves. This is a much better choice for them than the branch of a tree, but it is much worſe for the perſon who is to hive them, for they are very difficult to be got out of theſe places. The common way of the country people is to attack theſe ſwarms in the middle of a cold night, and then they enlarge the opening from without, and placing the hive under it, ſcoop the bees out of their neſt with a ladle, and put them into the hive.

Mr. Thorley tells us, that the beſt time to plant colonies of bees is either in March or April with new ſtocks, or in May or June with ſwarms. If ſwarms are uſed, procure, if poſſible, two the ſame day, and put them together in two boxes, or in a hive and a box; at night place them in your houſe, and with a knife and a little lime and hair, ſtop cloſe the mouth of the hive or upper box, ſo that not a bee may be able to go in, or out, except at the front door. If boxes are employed, you will, in a week or ten days, ſee the combs appear in them; but in a hive nothing can be obſerved till the bees have wrought down into the box. Never plant a colony with a ſingle ſwarm, as Mr. Thorley ſays he has ſometimes done, but with little ſucceſs.

When the ſecond box, or the box under the hive, appears full of bees and combs, it is a proper time to raiſe the colony in the duſk of the evening, which ſhould be done in the following manner: place your empty box, with the ſliding ſhutter drawn back, behind the houſe, near the colony that is to be raiſed, and at nearly the height of the floor, by the help of another empty box upon the ground; then lifting up the colony with as much expedition as poſſible, ſet it down upon the empty box, with the aperture of the colony cloſe to the piece of wood nailed upon it, ſo that no ſingle bee may get out: when this is done, lift the hive and two boxes, or the three boxes, into the houſe again, putting them in their proper place.

Mr. Thorley farther adds, that the moſt effectual method of preſerving bees in common hives is, incorporating or uniting two ſtocks into one, by the help of a peculiar fume or opiate, which will put them entirely in your power for a time, ſo that you may diſpoſe of, and diſtribute them at pleaſure. The queen, in this operation, is immediately to be ſearched for and detained. Hives or ſtocks, which have ſwarmed once or twice, and are conſequently reduced in their number, are the fitteſt to be joined together, as they will be thus greatly ſtrengthened and improved. However, if you have a ſtock both rich in honey and full of bees, you may take it, by dividing the bees into two parts, and putting them into two other hives inſtead of one. But be careful to examine, whether the ſtock to which you deſign to join the bees of another, has honey enough to maintain the bees of both; for which purpoſe it ſhould be full twenty pounds in weight.

The ſtupifying fume uſed in this proceſs is the fungus maximus or pulverulentus, or large muſhroom, commonly known by the name of bunt, puckfiſt, or frog-cheeſe: it is as big as a man's head, or bigger: when ripe, it is of a brown colour, turns to powder, and is exceeding light. Put one of theſe pucks into a large paper, preſſing it to two-thirds or nearly half its bulk, and tying it very cloſe; then place it in an oven ſome time after the houſhold bread is drawn, and let it remain there all night; when it is dry enough to retain fire, it is fit for uſe in the following manner: cut off a piece of the puck as large as a hen's egg, and fix it in the end of a ſmall ſtick ſlit for the purpoſe, and ſharpened at the other end, and place this ſo that it may hang near the middle of an empty hive; this hive muſt be ſet with the mouth upward, in a pail or bucket, near the ſtock you intend to take: then ſet fire to the puck, and immediately place the ſtock of bees over it, tying a cloth round the hives, that no ſmoke may eſcape. In a little while you will hear the bees fall like drops of hail into the empty hive. You may then beat the top of the hive gently with your hand, to get as many out as you can: after this, looſening the cloth, lift off the hive to a table, knock it ſeveral times againſt the table, and ſeveral more bees will tumble out, and perhaps the queen among them; ſhe is often one of the laſt that falls: if ſhe is not there, ſearch for her among the main body in the empty hive, ſpreading them for this purpoſe upon a table. You muſt proceed in the ſame manner with the other hive, with the bees of which theſe are to be united.

One of the queens being found, you muſt put the bees of both hives together; mingle them thoroughly, ſprinkling them at the ſame time with a little ale and ſugar, and put them among the combs of the latter hive, ſhaking them down in it. When they are all depoſited, cover the hive with a cloth, bound cloſe about it, and let them remain ſhut up all that night and the next day. Some time after this you will be ſenſible that they are awakened out of ſleep. The ſecond night after their union, in the duſk of the evening, gently remove the cloth from the mouth of the hive (taking care of yourſelf), and the bees will immediately ſally forth with a great noiſe; but it being too late for them to take wing, they will ſoon return again: then inſerting two pieces of tobacco-pipes to let in air, ſtop them cloſe as before, and keep them thus confined for three or four days longer, after which the door may be left open.

The beſt time of the year for uniting them is when the young brood are all out, and before they begin to lodge in the empty cells, which they do in great numbers in cold weather and in winter. The operation ſhould be performed early in the afternoon, that, having the greater light, the queen may be more eaſily found. The few bees that are left in the hive ſhould be ſuffocated with ſulphur.

Mr. Thorley obſerves, that he never knew ſuch combined ſtocks conquered by robbers, and that they will either ſwarm the next ſummer, or yield a hive full of honey.

Mr. White's method of hiving a ſwarm into one or more of his boxes is as follows: take the looſe board, mentioned under the article Hive, and faſten it to one of the boxes, ſo as to ſtop the communication; this may be done by three of the ſtaples there mentioned, one on the top of the box near the front, the two others on the back near the top and near the bottom; let one end of the ſtaple be thruſt into a gimblet-hole made in the box, ſo that the other end may go as tight as poſſible over the looſe board, to keep it from ſlipping when it is handled. Be careful to faſten the ſhutter ſo cloſe to the glaſs that no light may enter through it; and cover the box as ſoon as the bees are hived, with a linen cloth thrown looſely over it, or with green boughs to protect it from the heat of the ſun. If the ſwarm be larger than uſual, inſtead of faſtening the looſe board to one box, you may join two boxes together with three ſtaples, leaving the communication open from one to the other, and then hive your bees in both. In all other reſpects they are to be hived in boxes after the ſame manner as in common hives. The door of the ſecond box ſhould be carefully ſtopped up and kept conſtantly cloſed, in order that the bees may have no entrance but through the firſt box.

In the ſwarming ſeaſons, ſays Mr. Iſaac, hives ſhould be in readineſs for the ſwarms. Three iron hooks ſhould be faſtened to as many cords, tied together at ſuch a diſtance from the hooks as to admit the hive between them, ſo that the hooks may be faſtened in the ſides of the hive at equal diſtances. The cords ſhould be looped above the knot, ſo that the hive may be ſupported by them on a forked ſtick, eight or ten feet long, and pointed at the lower end. When a ſwarm riſes, take ſome balm leaves and rub the inſide of the hive with them, and place them on the outſide under one of the cords; then by means of the long ſtick, wave the hive amongſt the bees as they float in the air, and thruſt the ſtick into the ground to ſupport the hive; then walk off, and uſe your tinkling bell till you ſee them beginning to enter, at which time the noiſe ſhould ceaſe. If they are not allured into the hive by theſe means, they will either pitch elſewhere or go off, in which caſe they ſhould be followed if poſſible. If they pitch on the ground, put the hive over them, and ſhade them with boughs of trees. If they ſettle on a buſh, hold the hive with one hand and ſhake the buſh with the other, juſt ſtrong enough to make them fall into the hive, and put it down on the ground acroſs a ſtick, with the entrance a little elevated towards the ſouth; but if they have fixed where this mode cannot be uſed, the manner of hiving will be more difficult and the ſucceſs leſs certain. Mr. Iſaac ſays, that he has ſometimes been obliged to tie ſeveral ſticks together to make a long crook, and to aſcend a ladder ſo as to hold the hive on the points of a long pitch-fork, while an aſſiſtant ſhook with the crook the branch of a high tree on which a ſwarm had fixed, and the bees ſeemed glad to be hived. If the bees ſeem uneaſy in the hive, the queen is not with them, or they are determined to go off. If they return to the ſtock they may ſwarm again ſoon; but if they go off and you can follow them, give the old ſtock another hive, and look about for the queen till they have ſettled, and avoid treading on any bees left you deſtroy the queen, or miſtake the bees. If you find her, place her at the entrance, and you will thereby ſecure the ſwarm. Thorley, White, and Iſaac, ubi ſupra. See Swarm.

HIWASSEE, in *Geography*, a river of America, which diſcharges itſelf into the Teneſſee, after paſſing through the Cherokee town, about 40 miles below the mouth of the Clinch. N. lat. 35° 38′. W. long. 85° 3′. It is navigable till it penetrates the mountains on its S. ſide. Theſe mountains, when poſſeſſed by the Britiſh, yielded ore, from which gold was extracted. A branch of the Hiwaſſee, called Amoia, almoſt interlocks a branch of the Mobile. The portage between them is ſhort, and the road firm and level.

HLINKA, a town of Bohemia, in the circle of Chrudim; 12 miles S. of Chrudim.

HLIWINO, a town of Lithuania, in the palatinate of Minſk; 44 miles E. of Minſk.

HLUBOKI, a town of Ruſſian Lithuania; 40 miles S.E. of Breſlaw.

HLUMCZA, a town of Poland, in the palatinate of Volhynia; 60 miles N.N.W. of Zytomiers.

HO, a town of China, in Se-tchuen. N. lat. 30° 8′. E. long. 105°.—Alſo, a city of the ſecond rank, in Chen-ſi. N. lat. 35° 48′. E. long. 102° 34′.—Alſo, a city of the ſecond rank, in Kiang-nan. N. lat. 31° 42'. E. long. 117 54'.

HOA, a city of China, of the ſecond rank, in Quang-tong. N. lat. 21° 38. E. long. 109' 49'.

HOACHE, in *Natural Hiſtory*, a name given by the Chineſe to a peculiar kind of earth, which they have found very uſeful in the manufacture of their China-ware. It is called hoache from the word *hoa*, which ſignifies *ſoft* and *glutinous*, and is deſcribed to us as being an earth approaching to the nature of chalk, but harder, and feeling like ſoap to the touch. There is great reaſon to believe, that this is either the ſame earth with our ſoap-rock of Cornwall, or ſomething very like it. But we are to learn, in regard to the Chineſe way of uſing it, that it is only one of the ingredients of their fine ware, not the whole matter of which it is made.

The Chineſe phyſicians had long uſed this earth as a medicine, giving it in diſorders of the lungs; but it is only of late times that the workmen in porcelain attempted to uſe it inſtead of kaolin. It ſucceeds, however, ſo well, that the porcelain made of it ſells dearer in the Indies than any other kind. The grain of this porcelain is remarkably fine and even, ſo that it is fitter for receiving the fineſt pencilling than any other, and it may be made ſurpriſingly light. But there is this diſadvantage, that the whole is more brittle than ordinary china, and the juſt degree of baking it is very difficult to hit; without which it is never ſtrong. The Chineſe ſometimes make the body of their veſſels of the common China-ware, and dip them when dry into a thick liquor like cream, in which the hoache is diſſolved; this gives a new and beautiful coat to the veſſel. They give the common varniſhing over this, and it ſucceeds to a very great perfection.

The manner in which the Chineſe uſe it for this purpoſe is this: they firſt waſh it clean with river water, to ſeparate a yellow ſort of earth, which lies near it in the mine where they dig it, and is often brought up with it. When it is thus cleaned, they beat it to powder, and mix in it large quantities of water; they ſtir the mixture well, and then letting the coarſer part ſettle, they pour off the thick liquor, and let it ſtand till a ſubſtance like cream ſubſides, which they keep moiſt, and uſe, as before mentioned, to dip the veſſels in, or elſe they dry it, and uſe it with the petunſe inſtead of the kaolin in the common manufactures.

It is ſaid that a good porcelain-ware may be made with this earth alone without any other mixture; but the workmen themſelves are unwilling to do this, and always chuſe, if they do not work in the common way, to add at leaſt two parts of the petunſe to eight of the hoache, and with this mixture they make a very good ware, working it in the ſame manner as they do the petunſe and kaolin.

The hoache, though ever ſo proper to ſupply the place of the kaolin, could not be uſed in the common works, becauſe it coſts three times the price, it being much ſcarcer, and brought much farther.

There is another very elegant ſort of China-ware, which depends entirely on the hoache for its beauty; it is all white, but though the ſurface is perfectly ſmooth and poliſhed, there are ſeen flowers and other ornaments on it in a very delicate manner. The method of making this is as follows: they make the veſſels of the common matter of the porcelain-ware; they then diſſolve, in a ſufficient quantity of clear water, as much of the refined hoache as will give it the conſiſtence of a ſyrup. With this they pencil out the figures they intend on the ſurface of the veſſel while not yet quite dry; this penetrates the ſurface, and the lines and ſtrokes all appear very determinate. They let this dry thoroughly, and then cover the whole veſſel with the common varniſh of the porcelain.

When it has been baked the whole appears white, but the figures are very diſtinctly ſeen, and appear extremely beautiful. They are of a brighter white than any of the reſt, and ſeem formed of a thin white vapour, running with regularity juſt under the ſurface of the veſſel. They have a way of doing this with another ſort of earth, which they call *chekao;* but this requires more trouble, as it muſt be roaſted and powdered before it is fit for uſe. The white of this alſo is not ſo fine when done as the other. Obſerv. ſur les Coutumes de l'Aſie, p. 300, &c. See Porcelain.

HOACTLI, in *Ornithology*, a ſpecies of *Ardea*. See Heron.

HOACTZIN. See Phasianus *Criſtatus*.

HOADLEY, Benjamin, in *Biography*, was born at Weſterham, in Kent, in the year 1676. He was educated in grammar learning under his father, who was a clergyman, and maſter of a private ſchool in his native place, and in the year 1691 he was entered a penſioner of Catharine Hall, Cambridge. Here, in due time, he took his degrees, and became a tutor in the college, the duties of which office he diſcharged with great reputation. As a divine he was firſt ſettled lecturer of St. Mildred, in the Poultry, London. Here he continued ten years; during this period he held other preferment in the church, which he obtained through Dr. Sherlock, dean of St. Paul's. In 1703 he publiſhed "The Reaſonableneſs of Conformity to the Church of England repreſented to the Diſſenting Miniſters, in anſwer to the tenth Chapter of Mr. Calamy's Abridgment of Mr. Baxter's Hiſtory of his Life and Times." This was the occaſion of a controverſy between Mr. Hoadley and Mr. Calamy, which was carried on with that moderation which did credit to both parties. In 1705 Mr. Hoadley preached a ſermon before the lord mayor of London, which gave offence to the high-church party, and was followed by a long controverſy, in which many very eminent clergymen took a ſhare. After it had been continued a conſiderable time, the houſe of commons addreſſed the queen requeſting her to ſhew a regard for the ſignal ſervices which Mr. Hoadley had rendered to the cauſe of civil and religious liberty, by beſtowing upon him ſome dignity in the church. In anſwer to this addreſs the queen ſaid, that ſhe would take a proper opportunity of complying with their deſire, which, however, ſhe never did. Though neglected by his ſovereign he was not forgotten, but was preſented, in 1710, by Mrs. Howland, grandmother of the duke of Bedford, to the rectory of Streatham. Of this, he ſays, "When fury ſeemed to be let looſe, and to diſtinguiſh me particularly, ſhe herſelf, unaſked, unapplied to, without my having ever ſeen her, or been ſeen by her, choſe, by preſenting me to the rectory of Streatham, then juſt vacant, to ſhew, in her own expreſſion, that ſhe was neither aſhamed, nor afraid, to give me that public mark of her regard at that critical time." Almoſt as ſoon as king George aſcended the throne Mr. Hoadley was nominated one of the chaplains to his majeſty, having been created doctor of divinity by archbiſhop Wake. This was a prelude to higher honours and a more elevated place in that church to which his learning and talents gave him a juſt title. In 1715 he was raiſed to the ſee of Bangor. In 1717 he preached before the king his celebrated ſermon on "The Nature of the Kingdom or Church of Chriſt," which excited againſt him no little clamour among the clergy of the high-church party, and led to the controverſy which bears the biſhop's name. No ſooner had this ſermon been printed by ſpecial command, than it was detertained to proceed againſt the author in convocation, as ſoon as it ſhould ſit. The lower houſe drew up their repreſentation, but before it could be brought into the upper houſe, that aſſembly was prorogued by the king's order, nor was it permitted to ſit to do buſineſs till the heat of their reſentment had ſubſided. Dr. Hoadley's ſermon ſtruck at the root of civil and eccleſiaſtical tyranny: he ſhewed, in the moſt deciſive manner, that Chriſt was alone king in his own kingdom and the ſole law-giver; that his kingdom is not of this world, and that conſequently all encouragements and obſtacles of this world were not what Chriſt approved, tending to make men of one profeſſion, not of one faith; hypocrites not Chriſtians. Another very important tract publiſhed by Dr. Hoadley in this controverſy was entitled "The common Rights of Subjects defended, and the Nature of the Sacramental Teſt conſidered: in anſwer to Dr. Sherlock's Vindication of the Teſt and Corporation Acts." The argument maintained in this piece is, that it is a proſtitution of the holy ſacrament to apply it to a purpoſe of a different nature from what the inſtitutor ſolemnly appropriated to it, and to make that the tool of this world, which he ordered to have reſpect only to another: and that the teſt and corporation acts are repugnant to reaſon and to juſtice. In 1720 Dr. Hoadley was tranſlated to the ſee of Hereford, and in 1723 he was raiſed to the much more valuable biſhopric of Saliſbury: ſtill he employed his pen in vindicating the cauſe of liberty, which was ever near his heart. In 1732 he drew up a memoir of Dr. Samuel Clarke, which was prefixed to the poſthumous works of that eminent divine. In the year 1734 he ſucceeded to the ſee of Wincheſter, and ſhortly after publiſhed a very uſeful treatiſe, entitled "A plain Account of the Nature and End of the Sacrament of the Lord's Supper, &c." This work, which was intended to repreſent one of Chriſt's inſtitutions in its primitive ſimplicity, has been abridged by Dr. Diſney, and publiſhed under the title of "The national Chriſtian's Aſſiſtant to the worthy receiving of the Lord's Supper." Dr. Hoadley attained to the advanced age of eighty-five, when he died at his palace at Chelſea. He had ever diſtinguiſhed himſelf by conſiderable learning and uncommon talents, which he conſecrated in the moſt honourable manner to the ſervice of mankind. He had at all times ſhewn himſelf ready to ſeize every opportunity to defend the cauſe of truth, virtue, and religion, and the principles of our excellent conſtitution, in whatever quarter attacked; and to aſſert and vindicate, on the moſt intereſting occaſions, and againſt the greateſt names, the rights of the throne and thoſe of Engliſhmen. An account of all the works of this great man may be found in the Supplement to the Biographia Britannica, to which the reader is referred.

Hoadley, Benjamin, M.D. eldeſt ſon of the biſhop of Wincheſter of that name, was born in Broad-ſtreet, on the 10th of February, 1705. He received his early education at the ſchool of Dr. Newcome at Hackney, and was admitted a penſioner of Bene't college, Cambridge, under the worthy archbiſhop Herring, who was at that time tutor. He determined to purſue medicine as a profeſſion; and he was diſtinguiſhed by the progreſs which he made in mathematical and philoſophical ſtudies, under the celebrated blind profeſſor Saunderſon. He was created M. D. in 1728 by royal mandamus, and ſettled in London as a phyſician. He was early received into the Royal Society; and was made regiſtrar of Hereford, while his father held that ſee. In 1737 he read the Gulſtonian lectures in the College of Phyſicians, which he publiſhed in 1740. It was very honourable to his character that he held, for ſome years, the appointment of phyſician to both the houſholds, being nominated to that of the king in June, 1742, and to that of the prince of Wales in January, 1745, at a time when the two families were not upon the beſt terms with each other. He died at his houſe at Chelſea, on the 10th Auguſt 1757, leaving no iſſue, although twice married. He left the following works: the lectures, above alluded to, under the title of "Three Letters on the Organs of Reſpiration, read at the College, &c. To which is added an Appendix containing Remarks on ſome experiments of Dr. Houlſton, publiſhed in the Tranſactions of the Royal Society for the year 1736;" 1740, 4to. This work is characterized by Haller, as a very ingenious defence of a bad cauſe. 2. An Harveian Oration, "Oratio Anniverſaria &c," 1742, which has been eſteemed an elegant piece of Latinity. 3. "Obſervations on a Series of Electrical Experiments," by himſelf in conjunction with Mr. Wilſon. 4. But Dr. Hoadley will be principally remembered as the author of the pleaſing comedy, "The Suſpicious Huſband," written in 1747, which, by its own gaiety, and the admirable performance of Garrick, in the part of Ranger, became extremely popular, and it ſtill affords freſh pleaſure, whenever repreſented. He afterwards gave ſome aſſiſtance to his friend Hogarth, in the compoſition of his "Analyſis of Beauty." Dr. Hoadley was a man of both elegant and ſolid accompliſhments, poſſeſſed of conſiderable learning in his profeſſion, and an agreeable and ſprightly companion. Hutchinſon Biog. Med. Gen. Biog.

HOAI-KING, in *Geography*, a city of China, of the firſt rank, in the province of Ho-nan, abounding with medicinal plants. N. lat. 35° 6′. E. long. 112° 34′.

HOAI-NGHAN, a city of China, of the firſt rank, in the province of Kiang-nan. It is ſituated in a marſh, and encloſed within a triple wall; the ground on which it ſtands being lower than the bed of the canal, the inhabitants live in a conſtant dread of inundation. The ſuburbs extend to the diſtance of a league on each ſide of the canal, and form at their extremity a kind of port on the river Hoang-ho. This place is very populous, and carries on an active and briſk trade. One of the great mandarins, who inſpect the canals, and ſupply the court with proviſions, reſides here. This city has two of the ſecond and nine of the third claſs, under its juriſdiction. N. lat. 53° 30′. E. long. 118° 47′.

HOAI-YU-KEOU, a town of Chineſe Tartary. N. lat. 40° 54′. E. long. 117° 22′.

HOANG, Hoan-ho, or *Yellow river*, ſo called from the yellow colour of the mould and ſand at its bottom and ſides, a river of China, which has its ſources in two lakes, among the mountains ſituated in that part of Tartary called Kokonor, about N. lat. 35°, E. long. 97°, and, after a very winding courſe of 2150 miles, through Tartary and China, diſcharges itſelf into the Eaſtern or Yellow ſea, N. lat. 34 5′. E. long. 119° 44′. It is broad but ſhallow, ſo as to be hardly navigable; it is rapid in its courſe, and often overflows its banks, ſo that it has been found neceſſary to raiſe dykes in many places on its ſides, and even round many towns in the province of Ho-nan. At about ſeventy miles from the ſea, where it is croſſed by the Imperial canal, the breadth is little more than a mile, and the depth about nine or ten feet, but the velocity is about ſeven or eight miles in the hour. Yu, ſurnamed the *Great*, directed its courſe acroſs the provinces of Chan-ſi, Chen-ſi, Ho-nan, and Pe-tcheli; and towards its mouth, in order to check its rapidity, he divided it into nine channels, by which it diſcharged itſelf into the ſea, near the mountain of Kia-che-chan, which then formed a promontory. Since Yu, to the preſent time, *i. e.* in the interval of about 3950 years, the river Hoang-ho has departed ſo much from its ancient courſe, that its mouth is at preſent ſix degrees farther ſouth. It flowed into the ſea formerly under the fortieth degree of N. lat.; at preſent nearly under the thirty-fourth. Beſides, the mountain Kia-che-chan, which was formerly united to the main land of Yong-ping-fou, ſtands at preſent in the ſea, at the diſtance of 50 leagues to the S. of that city.

HOANG-TCHEOU, a city of China, of the firſt rank, in the province of Hou-quang, ſituated on the Yang-tſe, and having under its juriſdiction one city of the ſecond rank, and eight cities of the third. N. lat. 38° 28′. E. long. 114° 26′.—Alſo, a town of Corea, in Hoan-hi, 85 miles N.W. of King-ki-tao. N. lat. 38° 42′. E. long. 125° 52′.

HOAPINSU, a ſmall iſland in the Chineſe ſea, belonging to the group called "Lieou-Kieou." N. lat. 25° 44′. E. long. 123° 34′.

HOAR FROST, *Pruina*. See FROST.

HOARE, WILLIAM, in *Biography*, was born in the year 1707, of reſpectable parents, at Eye in Suffolk, and received the advantages of education in a ſchool, at that time of high repute for claſſical inſtruction. He diſcovered an early diſpoſition for painting, and gave ſuch inconteſtible proofs of a natural talent for that art, at an annual prize exhibition, that, after his completion of the uſual ſtudies of the ſchool, his father carried him to London, and placed him under the tuition of Griſoni, an Italian painter. From the ſkill of Griſoni the ſcholar could derive little profit; but it is probable, that from his converſation he imbibed that ardent deſire of viſiting the works of the Italian maſters, which prompted him to ſet the example of a ſyſtem afterwards purſued with ſo much avidity and ſucceſs by moſt of our young ſtudents in painting. The name of William Hoare ſtands firſt on the liſt of thoſe Engliſh painters who have reſorted to Italy with a view to profeſſional improvement.

Arriving at Rome, he placed himſelf in the ſchool of Franciſco Imperiali, and was the fellow pupil of Pompeo Battoni. During a reſidence of nine years in Italy, he made numerous copies of the hiſtorical works of the great maſters, and he returned to England, filled with viſionary hopes, and an ardent love of his profeſſion, which did not deſert him even at the lateſt period of an extended life.

Finding himſelf a ſtranger in London, and without the means of rendering his talents known, he accepted an invitation from ſome of his friends who reſided at Bath, in Somerſetſhire, and there found ſuch conſtant employment in painting portraits, that he was induced to ſettle in that city.

From the ſtudy of Roſalba's pictures, he added the practice of crayons to that of oil-painting, and carried it to a degree of excellence ſecond only to the powers of that celebrated paintreſs.

He maintained at Bath a very high character as a portrait painter, and he enjoyed ſcarcely leſs reputation for taſte and literature; and, as to theſe attractive qualities, he added the moſt unblemiſhed integrity, his houſe became the continual reſort of men of rank and genius. In the courſe of fifty years of profeſſional attention, he pourtrayed moſt of the diſtinguiſhed characters of the age.

Amidſt this eaſy affluence, he employed the earlieſt moments of his leiſure in the indulgence of his favourite wiſh of higher achievement in his art. He gave to the altar of St. Michael's church, at Bath, a figure of Our Saviour, as large as, or larger than, life; and afterwards painted for the octagon chapel, in that city, an hiſtorical compoſition, repreſenting, "The Miracle at the Pool of Betheſda." Theſe exertions procured him commiſſions for a few hiſtorical pictures, the principal merit of which conſiſts in the diſplay of an elegant taſte, and faithful ſtudy of nature.

Reſiding at a diſtance from the metropolis, where the competition of younger artiſts was continually accelerating the advance of Engliſh art, he retained to the laſt the ſtyle which he had adopted in the Italian ſchool. His drawing was more correct than that of moſt of his contemporaries; but his works are deficient in the richneſs of colour and effect, which began generally, in his time, to prevail in the ſchool of this country, and by which it is now ſo eminently diſtinguiſhed.

His portraits of men were faithful reſemblances of their originals, but they are ſeldom ſufficiently diveſted of the formal air which was long thought requiſite to the decorum of portraits. His portraits of women, particularly in crayons, have frequently much grace and ſoftneſs; his moſt celebrated portrait in oil is a half-length of William Pitt, the firſt earl of Chatham.

On the formation of the Royal Academy he was elected one of the original members, and was a conſtant exhibitor for many years. He died at Bath in 1792.

HOARSENESS, in *Medicine*, *raucedo*, an alteration in the voice, which gives it a preternatural roughneſs and diſſonance, and generally a lower or graver tone. The word is ſometimes alſo applied, though incorrectly, to a diminution or loſs of the voice. It is called by Sauvages Paraphonia catarrhalis. Noſol. Method. Claſs VI. Gen. 16.

The ancient phyſicians agree in referring hoarſeneſs to a roughneſs in the internal ſurface of the trachæa or windpipe; and the moderns, before the time of Sauvages, attributed that ſuppoſed roughneſs to the enlargement of miliary glands in the part, conſequent upon the action of cold, in the ſame manner as the cutis anſerina, or gooſe-ſkin appearance, is produced in the ſkin by the ſame agent. But that noſologiſt remarks, that if a German flute be wetted within, and afterwards ſand thrown into it ſo as to roughen the internal ſurface of the tube, the tone is not rendered either flat or rough, as thoſe phyſiologiſts ſuppoſe. It cannot be doubted, indeed, from what we know of the effects of inflammation in membranous parts, that this alteration of the voice ariſes from the thickened condition of the membrane lining the larynx, by which the diameter is altered and rendered irregular, and which, extending alſo to the muſcles of vocality, prevents them from contracting the aperture regularly or ſufficiently. In other caſes, where there is both a diminution of the power of voice, and a hoarſe tone, and theſe of conſiderable duration, the affection originates probably from ulceration and partial loſs of ſubſtance about the larynx or glottis. In ſome inſtances, a loſs of the voice ſeems to be dependent upon a degree of paralyſis in the muſcles of the larynx, by which they are diſabled from opening and cloſing that paſſage. This variety of the diſorder ſometimes continues for months, or even years; and the voice generally returns very ſuddenly, even ſo as to alarm the patient. (Darwin's Zoonomia, Claſs III. 2. 1. 5.) A temporary hoarſeneſs ariſes often from ſhouting or long and loud talking, by which a tranſient degree of inflammation appears to be produced in the larynx, and is accompanied by a ſenſation of ſoreneſs in the throat.

The hoarſeneſs, accompanying a common catarrh, is, of courſe, the effect of expoſure to cold; that which is occaſioned by ulceration in the organs of the voice is commonly occaſioned by the ſyphilitic virus, or ſome other chronic affection, to which the term ſcrofulous is ſometimes applied.

The cure of hoarſeneſs will neceſſarily be various according to the nature and origin of it; and as it is commonly only ſymptomatic of ſome other diſeaſe, will conſiſt in removing that primary affection. When it is connected with a common cold and cough, or ſore throat, it will ceaſe with the inflammation accompanying them; but it may be much relieved by inſpiring the ſteam of water alone, or of water and vinegar, or of water and ether. Bliſters to the external fauces often relieve the catarrhal hoarſeneſs, and ſometimes alſo the paralytic hoarſeneſs. In the latter variety, and in the hoarſeneſs attendant on chronic coughs in old and feeble people, as well as in ſome chronic ulcerations of the mouth and throat, certain warm and ſtimulant gargles and linctuſes have been uſed with advantage. In ſuch caſes Dr. Cullen recommended the juice of the hedge-muſtard (Eryſimum officinale) mixed with an equal quantity of honey or ſugar. When the eryſimum was not at hand, Dr. Cullen ſubſtituted a ſyrup of horſe-radiſh (cochlearia armoracia.) "I have found one drachm of the root," he obſerves, "freſh ſcraped down, was enough for four ounces of water, to be infuſed in a cloſe veſſel for two hours, and made into a ſyrup with double its weight of ſugar. A tea-ſpoonful or two of this ſyrup, ſwallowed leiſurely, or at leaſt repeated two or three times, we have found often very ſucceſsful in relieving hoarſeneſs." Cullen Mat. Med.

In the complete loſs of voice, Dr. Darwin recommends electric ſhocks to be paſſed through the larynx, by which two young ladies were cured in a fortnight. He likewiſe ſuggeſts the adminiſtration of emetics, gargles of decoction of ſeneka, and frequent endeavours to ſhout and ſing,—friction externally, and ſea bathing.

HOASE, in *Sea Language,* is a long flexible tube, formed of leather or tarred canvas, but chiefly of the latter, and employed to conduct the freſh water, which is hoiſted aboard a ſhip, into the caſks that are ranged in the hold; and to paſs the water, or other liquors, out of one caſk into the other.

HOATCHIT, in *Geography*, a country of Chineſe Tartary, governed by a Mongul prince, tributary to the empire, formed into two ſtandards; ſituated to the N. of Peking. N. lat. 45°.

HOATH. See HOWTH.

HOA-TSIANG, a town of Thibet; 30 miles E.S.E. of Hami. N. lat. 40° 55′. E. long. 99° 19′.

HOBAL, in *Mythology*, an idol of the ancient Arabs, the worſhip of which at Mecca was deſtroyed by Mahomet.

HO-BASCH, in *Geography*, a town of Arabia, in the province of Yemen; 44 miles E. of Zebid. N. lat. 4° 18′. E. long. 44°.

HOBBIES KEYS, a ſmall cluſter of iſlets, and rocks, in the Spaniſh Main, near the Moſquito ſhore. N. lat. 12° 18′. W. long. 82° 50′.

HOBBIMA, MINDERHOUT, in *Biography*, a moſt excellent landſcape painter, born at Antwerp about the year 1611. It is not exactly known under whom he learnt the principles of his art; but that nature was his ultimate guide to the perfection he attained, is very evident in his pictures, than which none were ever painted more true.

His choice of ſubjects, for they generally appear to have been portraits of particular places, is exceedingly pictureſque, though of a low and common kind. The border of a wood with a few ſcattered huts and fields viſible through the trees; a narrow lane with a cottage and hedge-rows; a corn-field, and village at a ſhort diſtance, in his hands, became intereſting, from the ſkill with which he arranged the chiaro-ſcuro and colouring, and the brilliancy and freedom of touch whereby he gave the full character of each object, and its local place in the perſpective of the picture. The forms of his trees are purely imitated from nature, without any apparent attempts to idealize them, to give them a more compact maſs in their extreme parts, as Claude, with a more exalted taſte, has effected. Hobbima appears to have taken nature as he found her, and been contented with repreſenting her truly; and he has certainly acquired the firſt name amongſt thoſe who have taken this line of ſtudy, which his own countrymen have generally done. Ruyſdael had better ſelections than he, but was not ſo rich in colour, nor ſo powerful in effect. Many of his pictures are ſupplied with figures by Oſtade, A. Vandevelde, and other ſkilful maſters, which gives them additional value; and they are now very highly valued and eagerly ſought after.

HOBBISM, or *Philoſophy of Hobbes*, in the *Hiſtory of Literature*, denotes the metaphyſical, moral, religious, and political opinions of Thomas Hobbes, a celebrated Engliſh writer, who was born at Malmeſbury, in Wiltſhire, in the year 1588.

Having diſtinguiſhed himſelf in early life by his genius, application, and improvement, he was taken into the ſervice and protection of the Devonſhire family, which continued, with little interruption, as long as he lived, and which gave him an opportunity of purſuing his ſtudies, and of forming connections with perſons of the firſt reputation for learning and ſcience both at home and abroad.

His firſt work was an Engliſh tranſlation of the "Hiſtory of Thucydides," which he publiſhed with a view to the ſtate of his country, in order to ſhew the fatal conſequences of inteſtine broils.

Having acquired a thorough aquaintance with the Latin and Greek languages, he applied himſelf to the ſtudy of mathematics; and particularly to the works of Euclid, which he read and admired, principally on account of the clearneſs of his reaſoning, the connection of his arguments, and the wonderful perſpicuity of his method. He alſo devoted his leiſure hours to natural philoſophy, and eſpecially to mechanics and the cauſes of animal motion.

In 1640 he retired to Paris, where he became acquainted with the famous Des Cartes, with whom he afterwards correſponded, and whoſe doctrine concerning innate ideas he ſtrenuouſly oppoſed.

In 1642 he printed a few copies of his book "De Cive," a more complete edition of which was printed in Holland in 1647, by the care of Dr. Sorbiere. To this edition two recommendatory letters are prefixed; one written by Gaſſendi and the other by Merſenne, with whom Mr. Hobbes was on terms of intimate friendſhip.

In 1650, two other treatiſes were publiſhed at London; one entitled "Human Nature," and another entitled "De Corpore Politico," or the Elements of Law. During this time he had been digeſting his religious, political, and moral principles, into a complete ſyſtem, which he entitled "Leviathan;" and which was printed in Engliſh, at London, in that and the following year. Soon after this publication he returned to England, and joined in communion with a congregation where the ſervice of the church of England was uſed, and continued to reſort thither.

In 1654 he publiſhed his letter upon "Liberty and Neceſſity," which occaſioned a long controverſy between him and Dr. Bramhall, afterward lord primate of Ireland. About this time he likewiſe began a controverſy with Dr. Wallis of Oxford, which laſted as long as he lived, and in which he had the misfortune to have all the mathematicians againſt him. This controverſy did him no credit; for though he was once and again refuted, and his miſtakes were clearly pointed out, yet, ſuch was the obſtinacy of his temper, he adhered as pertinaciouſly as ever to his old opinions, and rendered that a perſonal quarrel, which ought to have continued a literary diſpute. He was no leſs poſitive and imperious in maintaining his moral, religious, and political ſentiments; and he ſeems to have diſcovered, on a variety of occaſions, a very unbecoming opinion of his own abilities, and a ſupercilious contempt for thoſe of other men.

After the reſtoration, in 1660, the king ſettled upon him a penſion of a hundred pounds a year; but notwithſtanding this favour, his Leviathan and his treatiſe De Cive were cenſured by parliament in 1666, a circumſtance which much alarmed him. At the ſame time a bill was brought into the houſe of commons to puniſh atheiſm and profaneneſs, which, it is ſaid, induced Mr. Hobbes to write or enlarge his book concerning Hereſy.

In 1675, he publiſhed his Engliſh edition of the Iliad and Odyſſey; in 1676 his diſpute with Dr. Laney, biſhop of Ely, concerning Liberty and Neceſſity, was printed; in 1678, appeared his “Decameron Phyſiologicum,” or ten Dialogues of Natural Philoſophy; and about the ſame time a new edition of the “Art of Rhetoric,” to which he added a Dialogue between a Philoſopher and a Student of the Common Law of England; in the ſame year he alſo publiſhed his “Behemoth,” or Hiſtory of the Civil Wars from 1640 to 1660.

Mr. Hobbes retained his underſtanding to his laſt ſickneſs; inſomuch that he was not only capable of ſtudying mathematics when above eighty-ſix years old, but alſo of writing very long poems. It has been ſaid, that he was afraid of apparitions and ſpirits; but his friends call this a fable, though they acknowledge that he was afraid of being alone, and aſcribe it to a fear of being aſſaſſinated. Mr. Bayle obſerves, that he meditated much more than he had read, and that he never cared to collect a large library; and Mr. Hobbes ſays of himſelf, that if he had beſtowed as much time on reading as other men of letters, he ſhould have been as ignorant as they. He was a great admirer of Homer, Virgil, Thucydides, and Euclid; but he made no account of large libraries, obſerving that men, for the moſt part, following one another's ſteps like ſheep, have ſeldom the courage to go out of the trodden paths and roads which are preſcribed to them by their guides. Mr. Hobbes died at the houſe of his patron, the earl of Devonſhire, in the year 1679. For a fuller account of his life and writings, the reader may conſult Bayle, or the Biographia Britannica, article *Hobbes*.

Mr. Hobbes's religious and political ſentiments are chiefly contained in his book De Cive and his Leviathan; and it is certain, that there have been few perſons whoſe writings, by the extraordinary abilities of their author and the ſingularity of his notions, for the dogmatical manner in which they are delivered, and the agreeableneſs of their ſtyle, that have had a more pernicious influence in ſpreading infidelity and irreligion, though none of them are directly levelled againſt revealed religion.

Mr. Hobbes has been unjuſtly charged with atheiſm; for he expreſsly acknowledges the exiſtence of God, and that we muſt neceſſarily ariſe from the effects which we behold, to the eternal power of all powers, and cauſe of all cauſes; and he blames the abſurdity of thoſe, who call the world, or the ſoul of the world, God: nevertheleſs, he denies that we know any more of him than that he exiſts, and ſeems plainly to make him corporeal; for he affirms, that that which is not body is nothing at all: “Dantur nomina inſignificantia; hujus generis eſt ſubſtantia incorporea.” Religion, he ſays, ariſes from the fear of power inviſible, feigned by the mind, or imagined from tales publicly allowed, as ſuperſtition ariſes from thoſe that are not allowed; and he elſewhere reſolves religion into opinions of ghoſts, ignorance of ſecond cauſes, devotion to what men fear, and taking things caſual for prognoſtics. He takes pains in many of his works to prove man to be a neceſſary agent (if theſe contradictory terms can be properly joined), and expreſsly aſſerts the materiality and mortality of the human ſoul; alleging, againſt the well-known maxim of Des Cartes, “I think, therefore, I am,” another maxim of his own, “I think, therefore, matter can think.” And he repreſents the doctrine concerning the diſtinction between ſoul and body in man to be an error, contracted by the contagion of the demonology of the Greeks. The belief of a future ſtate, he ſays, is grounded upon other men's ſaying that they knew it ſupernaturally, or that they knew thoſe that knew them, that knew others, that knew it ſupernaturally.

With regard to revealed religion, he treats the pretence to inſpiration as a ſign of madneſs; he alleges that the books of Moſes, and the hiſtorical writings of the Old Teſtament, were not written by thoſe whoſe names they bear; and that they are derived to us from no higher authority than that of Ezra. As to the books of the New Teſtament, he acknowledges, that they are the true regiſters of thoſe things which were done and ſaid by the prophets and apoſtles; but he pretends, that they were not received as of divine authority in the Chriſtian church, till they were eſtabliſhed by the council of Laodicea, in the year of Chriſt 364. Though he ſometimes ſeems to ſpeak with veneration of the ſacred writings, and to make the laws of ſcripture the laws of God, yet he expreſsly aſſerts, that we have no aſſurance of the certainty of ſcripture but the authority of the church, or the authority of the commonwealth; that the precepts of ſcripture derive all their obligation from the will of the magiſtrate; and that the magiſtrate is the authoritative interpreter of all ſcripture doctrines, to whom we are bound to ſubmit. On the ſame principle he maintains, that the private reaſon muſt ſubmit to the public, *viz.* to God's lieutenant; that a ſubject may be allowed to deny Chriſt in words, provided he retains the faith of Chriſt in his heart, when commanded by his ſovereign; and that idolatry, to which a man is compelled by the terror of death, is no idolatry.

Mr. Hobbes's opinions with regard to natural religion and civil government are equally erroneous and extravagant; he aſſerts, that by the law of nature every man has a right to all things, and over all perſons, and that the natural condition of man is a ſtate of war, a war of all men againſt all men; that every man acts reaſonably, who endeavours, as far as poſſible, to maſter all the perſons of others, till he ſees no other power great enough to endanger him; that the civil laws are the only rules of good and evil, juſt and unjuſt, honeſt and diſhoneſt, and that antecedently to ſuch laws every action is in its own nature indifferent; that there is nothing good or evil in itſelf, nor any common laws conſtituting what is naturally juſt or unjuſt; that all things are eſtimated by what every man judgeth to be fit, where there is no civil government, and by the laws of ſociety, where ſociety is eſtabliſhed; that the power of the ſovereign is abſolute, and that he is not bound by any compact with his ſubjects; that nothing the ſovereign can do to the ſubject can properly be called injurious or wrong; and that the king's word is ſufficient to take any thing from any ſubject, if there be need, and the king is judge of that need. “Non veritas, ſed auctoritas facit legem.” And yet he elſewhere ſays, “Obligatio civium erga eum qui ſummam habet poteſtatem tandem nec diutius permanere intelligitur, quam manet potentia cives protegendi.”

Wood, in his Athenæ Oxon. vol. ii. p. 646, has aſſerted, that Mr. Hobbes, in advanced life, retracted many of his opinions publiſhed in his Leviathan, &c. and compoſed an apology for himſelf and his writings; but the authenticity of this apology has been diſputed. Leland's View of the Deiſtical Writers, vol. i. letter iii. Moſheim's Eccl. Hiſt. by Dr. Maclaine, vol. v.

HOBBY was a name formerly given to ſtrong active horſes of a ſmaller ſize; they are reported to have been originally natives of Ireland, and were much liked and uſed. Nags anſwer the ſame deſcription as to ſize, qualities, and employments.

HOBBY, in *Ornithology*, the Engliſh name of a hawk of the long-winged kind, the falco ſubbuteo of Linnæus, called by many authors, by the name *ſubbuteo*, the name by which others expreſs the ring-tail and hen-harrier. See FALCO.

HOBBYHORSE-HEAD, in *Mining*, ſignifies part of the pulley geer of a coal gin, fixed over the drawing-ſhaft.

HOBGOBLIN is a name vulgarly applied to fairies or apparitions. Skinner calls the word *robgoblins*, and derives it from *Robin Goodfellow*, Hob being the nick-name of Robin; but Wallis and Junius, with greater probability, derive it from *hopgoblins*, *empuſæ*, becauſe they are ſuppoſed to *hop* without moving both their feet. Johnſon.

HOBITS, in *Gunnery*. See HOWITZER.

HOBLERS, or HOBILERS, HOBELARII, in our *Ancient Cuſtoms*, were men who, by their tenure, were obliged to maintain a light horſe or hobby, (whence their name,) for the certifying any invaſion towards the ſea-ſide.

The name was alſo uſed for certain Iriſh knights, who uſed to ſerve as light-horſemen upon hobbies. (18 Ed. III. ſtat. 1. c. 25, and ſtat. 5, c. 8.) The term, according to Spelman, continued till the time of Henry VIII. or that of queen Mary; when theſe troops were diſtinguiſhed by the name of demilaunces and light horſe. They are mentioned as part of the Britiſh army that attended king Edward II. into Scotland in the year 1322. Sometimes archers were mounted on light horſes; and they were hence ſtyled hobiler archers.

HOB-NAIL, a nail with a thick ſtrong head, uſed in ſhoeing a hobby or little horſe. Johnſon.

HOB-NOB, or HAB-NAB, a cant word formed from *hap ne hap*, and denoting an event which happens at random or by mere chance. Johnſon.

HOBOO, a name given by the people of Otaheite, and in the neighbouring iſlands of the South Sea, to their ſuperfine cloth. It is the thinneſt and moſt finiſhed preparation of the *aouta*, which ſee.

HOBRECHT, JACOB, in *Biography*, or as the Italians write it, *Obrecht*, or *Obreth*, the moſt ancient compoſer of maſſes, in correct counter-point of four parts, that are come down to us. He was a Netherlander, and the muſical preceptor of Eraſmus, as Damon was formerly of Socrates. Glareanus, the diſciple of Eraſmus, ſays, that he had frequently heard his preceptor ſpeak of Hobrecht as a muſician who had no ſuperior, and ſay, that he had ſuch a rapid and wonderful facility in writing, that he compoſed an excellent maſs in one night, which was very much admired by the learned. Indeed, in ſcoring his maſs "Si Dedero," which was printed at Venice in 1508, it appears, though the movements are ſomewhat too ſimilar in ſubject, that the counterpoint is clean, clear, and maſterly. And this is the chief praiſe that is juſtly due to moſt of the compoſitions of the ſame period; which, in other reſpects, ſo much reſemble each other, that a few ſpecimens would exhibit almoſt all the variety of melody and meaſure which the productions of a whole century can furniſh. Indeed, as air and grace were not at this time the objects of a compoſer's purſuits, they ſhould not be ſought or expected. Thoſe, however, who have heard modern melody, harmony, and modulation, to a degree of ſatiety, and admire the fugues, canons, and other ingenious contrivances of the ſixteenth and ſeventeenth centuries, would have great pleaſure in the performance or contemplation of ſuch muſic as this, which is become *new* by exceſs of antiquity. Few or none of the paſſages have been retained in modern muſic; and the harmony and modulation having been regulated by the eccleſiaſtical tones, or modes, which have been ſo long exploded in this country, every thing would be as new to a *dilettante* of the preſent age, as if he only now heard muſic for the firſt time; ſo that, thoſe who can tolerate nothing but what is *ancient*, and thoſe, who are in conſtant ſearch of *ſomething new*, will, in theſe authors, find muſic equally adapted to their ſeveral taſtes, and be likewiſe furniſhed with an excuſe for their faſtidiouſneſs.

HOBROE, in *Geography*, a town of Denmark, in North Jutland, and dioceſe of Wiborg; 16 miles N.E. of Wiborg. N. lat. 56° 38'. E. long. 9° 49'.

HOBSON'*s*-CHOICE, a vulgar proverbial expreſſion, applied to that kind of choice in which there is no alternative. It is ſaid to be derived from the name of a carrier at Cambridge, who let out hackney horſes, and obliged each cuſtomer to take in his turn, that horſe which ſtood next the ſtable door. Scott.

HOBY, in *Geography*, a town of Sweden, in Sudermania; 15 miles N.W. of Nikioping.

HOCHAUS, a town of Auſtria; nine miles S.S.W. of Aigen.

HOCHBERG, a marquiſate of Germany, annexed to the margraviate of Baden, deriving its name from an ancient caſtle, ſituated two miles N.E. from Emendingen, which is the principal town.

HOCHENAU, a town of Auſtria; nine miles E.N.E. of Ziſterſdorff.

HOCHFELDEN, a town of France, in the department of the Lower Rhine, and chief place of a canton, in the diſtrict of Saverne; 12 miles N.W. of Straſburg. The place contains 1620, and the canton 11,954 inhabitants, on a territory of 150 kiliometres, in 30 communes.

HOCHLAND, HOGLAND, or *Highland*, an iſlet or rock in the the middle of the gulf of Finland, of an oblong form, about 8 miles in circumference, having upon it two lighthouſes, and about 30 families of Finns. In the heart of the iſle is a deep and gloomy vale about 100 fathoms wide. The ſoil of this iſland is generally ſwampy; but it is not deſtitute of wood, ſuch as pines, firs, birch, alder, &c. On the higheſt rocks are three lakes, which are not without fiſh. Of domeſtic animals here are a few cattle and a flock or two of ſheep. Of wild fowl there are various ſpecies. Seals abound and herrings are plentiful. N. lat. 60° 3'. E. long. 27°.

HOCHST, a town of Germany, ſituated on the Maine; 6 miles W. of Francfort.

HOCHSTADT, a town of Bohemia, in the circle of Boleſlau; 11 miles from Turnau.

HOCHSTATT, or HOCHSTETT, a town of Bavaria, in the principality of Neuberg, on the Danube. Near this place was fought the famous battle of Blenheim (ſee BLENHEIM); 19 miles N.W. of Augſburg.

HOCHSTETT, a town of the biſhopric of Bamberg, on the Aiſch; 13 miles S. of Bamberg. N. lat. 49° 46'. E. long. 10° 47'.

HOCHWEISH, a town of Hungary; 20 miles W.S.W. of Kremnitz.

HOCK. See HAM.

Hock-*Tueſday money*. See Hoke-*day*.

HOCKHEIM, in *Geography*, a town of Germany, ſituated near the conflux of the Rhine and Maine; celebrated for its excellent wine; 16 miles N. of Francfort on the Maine.

HOCKHOCKING, a river of America, in the ſtate of Ohio, about 25 miles below the Muſkingum, which it reſembles, though inferior to it in ſize. It riſes near a branch of the Scioto, and purſuing a S. W. courſe enters the Ohio, at Bellpré, in N. lat. 38° 57′. It is navigable for large flat-bottomed boats, between 70 and 80 miles; and on its banks are fine meadows, ſeldom overflowed, and on its borders are rich upland. Its banks ſupply inexhauſtible ſources of free-ſtone, iron-ore, lead, and coal. Here are alſo productive ſalt-ſprings, with beds of white and blue clay of excellent quality. Red bole, and many other uſeful foſſils, have been found on its banks.—Alſo, a poſt-town in Roſs county, Ohio; 440 miles from Waſhington.

HOCKQUAR, or Hockquart, an iſland of Upper Canada, on the E. ſide of lake Superior.

HOCKSENBERG, a town of Pruſſia, in Pomerelia; 30 miles W. of Dantzic.

HOCKSTETT, a town of the biſhopric of Bamberg; 12 miles S. of Bamberg.

HOCUB, in *Botany*, a name given by Vaillant to a genus of plants, called by Tournefort and other authors gundelia.

HOCUS POCUS, a cant term applied to a juggle or cheat. Dr. Tillotſon derives it from the form of conſecrating the ſacramental bread in the Romiſh church, *hoc eſt corpus*. Junius derives it from the Welch *hocced, a cheat*, and *poke*, or *pocus, a bag;* the jugglers uſing a bag for conveyance. The etymology, however, is uncertain. Johnſon.

HOD, a ſort of tray for carrying mortar, in uſe among bricklayers.

HODAL, in *Geography*, a ſea-port town of Sweden, in Weſt Gothland, on the coaſt of the North ſea; 45 miles N. N.W. of Uddevalla.

HODAM, a town of Scotland, in the county of Dumfries; 10 miles E. of Dumfries.

HODDESDON, a market-town and chapelry in the pariſhes of Amwell and Broxbourn, in the hundred and county of Hertford, England, is ſituated near the river Lea; 17 miles diſtant from London. It conſiſts principally of one ſtreet, and, in the year 1801, contained 227 houſes, and 1227 inhabitants. The privileges of a weekly market, held on Tueſdays, and a three days annual fair, were granted by Henry VIII. The original market-houſe, a curious edifice of wood, ſupported on arches, is yet ſtanding, and is decorated with a number of rude and groteſque figures, carved on different parts. The chapel, a neat brick building, was erected about the year 1786, on the ſcite of an ancient ſtructure. Near the market-houſe is a conduit of good water, which is ſupplied by pipes from a ſpring at ſome diſtance; it was built by the Rawdons, a reſpectable family in this town; and is kept in order purſuant to the will of Marmaduke Rawdon, eſq. who, in 1679, bequeathed an annual proviſion for that purpoſe. The town is poſſeſſed of an incorporated grammar-ſchool; and in the vicinity is a large cotton-mill. Near the ſouthern extremity of the town is a large houſe, which preſents, both externally and internally, various ſpecimens of curious architecture, ſculpture, and carving. See Chauncy's "Hiſtory, &c. of Hertfordſhire," and Lyſons's "Environs of London," 4to. 1811.

HODEGOS, a term purely Greek, ὁδηγός, ſignifying *guide*. The word is chiefly uſed as the title of a book compoſed by Anaſtaſius the Sinate, toward the cloſe of the fifth century; being a method of diſputing againſt the heretics, particularly the Acephali.

Mr. Toland has alſo publiſhed a diſſertation under the ſame title. Its ſubject is the pillar of fire, &c., which went before the Iſraelites as a guide in the deſert.

HODEIDA, in *Geography*, a ſea-port town of Arabia, on the Red ſea, with a harbour fit only for ſmall veſſels. The juriſdiction of the Dola, who is accountable only to the Imam, is confined to this city. His revenue conſiſts in part of the duties upon coffee exported. The manſion-houſe of the Dola, the cuſtom-houſe, and the houſes of the principal merchants, are conſtructed of ſtone; the reſt of the town is compoſed of huts built in the ordinary ſtile. Near the ſea ſtands a ſmall citadel, incapable of affording a very ſtrong defence. This city has its patron ſaint Scheick "Sadik," who is honoured with due veneration. At the diſtance of 1½ mile from Hodeida is a well of excellent water, which ſupplies the inhabitants.

HODEN, a town of Africa, in the Sahara. N. lat. 19° 25′. W. long. 12°.

HODENSTEIN, in *Natural Hiſtory*. See Enorchis.

HODGE-PODGE. See Hotch-pot.

HODGES, Nathaniel, in *Biography*, a phyſician, the ſon of Dr. Thomas Hodges, dean of Hereford, was born at Kenſington. He was educated at Weſtminſter ſchool, and was elected a ſtudent of Chriſt-church, Oxford, in 1648. He obtained the degree of M. D. in 1659, and ſettled in practice in London. He remained in the metropolis during the continuance of the plague in 1665, when moſt of the phyſicians, and Sydenham among the reſt, retired to the country: and, with another of his brethren, he viſited the infected during the whole of that terrible viſitation. Theſe two phyſicians, indeed, appear to have been appointed by the city of London to attend the diſeaſed, with a ſtipend. Dr. Hodges was twice taken ill during the prevalence of the diſeaſe; but by the aid of timely remedies he recovered. His mode of performing his perilous duty was this: he received early every morning, at his own houſe, the perſons who came to give reports of the ſick, and convaleſcents, for advice; he then made his forenoon viſits to the infected, cauſing a pan of coals to be carried before him with perfumes, and chewing troches while he was in the ſick chamber. He repeated his viſits in the afternoon. His chief prophylactic was a liberal uſe of Spaniſh wine, and cheerful ſociety after the buſineſs of the day. Having thus had ample opportunities of aſcertaining the phenomena of the diſeaſe, he publiſhed, in the year 1672, a work under the title of "Loimologia; ſive Peſtis Nuperæ apud Populum Londinenſem graſſantis Narratio Hiſtorica," 8vo.; which contains the moſt authentic account of that memorable calamity. He ſubjoined the bills of mortality of the plague-year, 1665, amounting in all to 97,306 deaths, of which 68,596 were occaſioned by the peſtilence. This volume was tranſlated into Engliſh by Dr. Quincy, and publiſhed, with ſome additional tracts upon the ſubject, in 1721, when the occurrence of the plague at Marſeilles excited conſiderable alarm in the commercial cities throughout Europe. It is to be lamented, that a man, who had performed thoſe dangerous duties among his fellow-citizens with ſo much intrepidity and fidelity, ſhould have ultimately been ſo far reduced in his circumſtances, as to be confined in the priſon of Ludgate for debt, where he died in 1684. His body was interred in the church of St. Stephen, Walbrook, where a monument is erected to his memory. The only other work publiſhed by Dr. Hodges, was entitled "Vindiciæ Medicinæ et Medicorum," and printed in 1660, 8vo. See Gen. Biog. Hutchinſon, Med. Biog.

Hodges, William, R. A. a landſcape painter, who received his tuition in the art from Wilſon, whom he aſſiſted for ſome time, and under whom he acquired a good eye for colouring, and great freedom and boldneſs of hand; but unluckily, like too many pupils, he caught the defects of his maſter more powerfully than his beauties; and was, in conſequence, too looſe in his definition of forms, by which means, that which added grace to the works of the maſter, became ſlovenlineſs in the pupil. "Hodges had the boldneſs and neglect of Wilſon, but not genius enough to give authority to the former, or make us forgive the latter: too inaccurate for ſcene-painting, too mannered for local repreſentation, and not ſublime or comprehenſive enough for poetic land-ſcape; yet, by mere deciſion of hand, nearer to excellence than mediocrity; and, perhaps, ſuperior to ſome who ſurpaſſed him in perſpective, or diligence of execution." He accepted an appointment to go out draughtſman with Capt. Cook on his ſecond voyage to the South ſeas, from which he returned after an abſence of three years, and painted ſome pictures for the admiralty, of ſcenes in Otaheite and Ulietea. Afterwards, under the patronage of Warren Haſtings, he viſited the Eaſt Indies, where he acquired a decent fortune. On his return home, after practiſing the art ſome time, he engaged in commercial and banking ſpeculations; which, not proving ſucceſsful, he ſunk under the diſappointment, and died in 1797, aged 53.

HODMAN, a cant term formerly uſed for a young ſcholar admitted from Weſtminſter-ſchool to be ſtudent in Chriſt-church, in Oxford.

HODOMETRICAL (of ὁδὸς, *way*, and μέτρω, *I meaſure,*) *method of finding the longitude at ſea,* is that of the computation of the meaſure of the way of a ſhip between place and place, *i. e.* obſerving the ſeveral rhumbs or lines in which the ſhip ſails, what way ſhe has made, or how many leagues and parts of a league ſhe has run. This method is liable to great errors.

HODY, Humphrey, in *Biography*, was born at Odcombe, in Somerſetſhire, in 1659, of which place his father was rector. He was educated at a grammar-ſchool, and completed his ſtudies at Wadham college, Oxford, where he took his degrees, and was afterwards choſen fellow and tutor. In 1681, and 1682, he wrote his learned diſſertation on Ariſteas's Hiſtory of the Seventy-two Interpreters, which was intended to ſhew, that it was the invention of ſome Helleniſtical Jew, and written on purpoſe to recommend and give greater authority to the Greek verſion of the Old Teſtament, which, from this ſtory, has received the name of Septuagint. In 1689, Mr. Hody wrote the prologomena to John Malela's "Chronicle," which was publiſhed at Oxford two years afterwards. In 1692, he took his degree of D. D., and ſoon after publiſhed a treatiſe entitled "The Reſurrection of the ſame Body aſſerted." After this he obtained ſome conſiderable preferment in the church, and in the beginning of the reign of queen Anne when the controverſy concerning the powers and privileges of an Engliſh ſynod, or convocation, was warmly agitated, Dr. Hody publiſhed "A Hiſtory of Engliſh Councils and Convocations, and of the Clergy ſitting in Parliament, in which is alſo comprehended the Hiſtory of Parliaments, with an Account of our ancient Laws." This work brings down the hiſtory from the firſt ſynod, which is mentioned to have been held in this iſland, *viz.* that of Verulam, in 446, to the beginning of the reign of Henry VIII. Dr. Hody was author of many other learned works, and left behind him, which was publiſhed in 1742, a work in MS. entitled "De Græcis illuſtribus Linguæ Græcæ Literarumque Humaniorum Inſtauratoribus, eorum Vitis, Scriptis et Elogiis." This work conſiſts of two books, of which the firſt treats of the learned Greeks who came to Italy before, and the ſecond, of thoſe who came after the taking of Conſtantinople. Dr. Hody died in 1706, in the 48th year of his age.

HOE, in *Agriculture*, the uſual name of a tool employed in tillage huſbandry, well known to the modern farmer, and which is conſtructed in different modes and forms, in order to ſerve different purpoſes in cultivation. Tools of this nature are principally diſtinguiſhed into two kinds, from the differences in the methods in which they are made uſe of; as *hand* and *horſe* hoes, the former ſort being uſed by the hands of the labourer, while the latter are wholly employed by the powers of the horſe. Hand-hoes are, likewiſe, chiefly had recourſe to where the crops are put into the ground in the broad-caſt, or narrow-row ſyſtems, but horſe-hoes in ſuch as are ſown in diſtant drills in a regular manner in regard to the rows or lines. Thoſe of the latter ſort are far more powerful in their work than thoſe of the hand kind, and capable of executing the buſineſs with much greater diſpatch.

Hoe, *Hand.* The variations in the ſhape and conſtruction of this kind of hoe are numerous, but the old ſquare hand-hoe, which is in uſe for a great variety of purpoſes, ſuch as thoſe of common hoeing, thinning, and ſetting out different crops of the turnip and other ſimilar kinds ſown in the broad-caſt mode, as well as occaſionally for ſtriking out the ſupernumerary plants in ſuch as are cultivated in the row or drill method, is commonly well known to the farmer. It is in general conſtructed of a ſquare piece of thin iron, which has a hole and ſort of ſocket formed in the middle, on the upper ſide, into which the handle is faſtened; though in ſome inſtances a kind of hoop is formed, which is attached to each extremity of the ſquare part, the middle conſtituting a ſort of ſocket which receives the handle. Some conſider this as forming an improvement in the tool, by admitting the mould to paſs through the part which conſtitutes the bow.

Theſe kinds of tools are alſo made of different dimenſions, in order to their more ready application to different ſorts of crops and grounds. The moſt uſual ſizes are thoſe given below:

Dimenſions of Hand-Hoes.

2 inch hand-hoes.	8 inch hand-hoes.
3 inch ———	9 inch ———
4 inch ———	10 inch ———
5 inch ———	12 inch ———

It is uſual to employ the two firſt deſcriptions of hoes in the more early growth of ſeveral ſorts of field crops, ſuch as thoſe of the carrot and parſnip kinds, as well as occaſionally for wheat and other grain crops. The four-inch ſize is alſo ſometimes uſed for theſe, as well as the firſt hoeings of turnip crops and others of the ſmall ſeed kind. Eight and nine-inch hand-hoes are more commonly made uſe of for the later turnip crops, and for thoſe of the pea and bean ſorts, on moſt kinds of ſoil.

The laſt two ſizes of hand-hoes are for the moſt part employed for the early turnip crops, on ſuch ſoils as are of a ſandy or loamy quality and free from ſtones; and, likewiſe, occaſionally on ſuch as are of a flinty nature.

For the purpoſe of thinning out ſuch plants as ſtand in a very cloſe ſtate, in a more perfect and effectual manner than by the common hoe, in various kinds of crops, a triangular tool of this ſort has been conſtructed and had recourſe to, which is found to anſwer well. In it one of the points of the angles is placed in a downward direction, by which means the workman is enabled to cut out the uſeleſs plants with a conſiderable degree of exactneſs.

And another tool of this nature, which has two cutting points for breaking up and dividing the ground, has been found very beneficial in different intentions. It is ſaid to be in great uſe in Portugal, and that, from its weight and conical ſhape, as well as the circumſtance of the handle being light and ſhort, it executes its work to a good depth, without any unuſual exertion of the perſon who makes uſe of it. It is in that country chiefly had recourſe to in breaking up the ſtrong grounds of their vineyards, which could not, it is ſuppoſed, be effected by our common hand-hoes. This hoe has, likewiſe, been ſuggeſted as capable of being of great utility in the digging and cultivating of ground in ſteep hilly and mountainous tracts, as well as in the making of compoſt manures of lime and earth, in the corners of fields where the plough is incapable of being made uſe of for the purpoſe; and in all ſteep ſituations where the ſpade cannot be employed. It is not improbable but that it may alſo be beneficially uſed in digging over the head-lands in arable fields, as well as in orchard grounds, and among plantations of trees in various caſes.

However, in order to effect the work of field culture in a more perfect and expeditious manner, than by means of common hand-hoes, other improved ſorts of them have been lately invented by Mr. Ducket, junior, which execute the buſineſs on ſeveral rows at the ſame time, and which are capable of being varied ſo as to ſuit different objects and purpoſes of huſbandry. They have been had recourſe to on ſuch lands as are of the more light quality with very conſiderable ſucceſs. They conſiſt of a kind of *double* and *treble* hoes. By the firſt of the latter deſcription three rows are capable of being finiſhed at the ſame inſtant, the labourer who employs it advancing in the ſame manner as with the common hoe. Its weight, when furniſhed with the three heart hoes, is 7lb. 9oz. but which is capable of being wrought by even a woman who is accuſtomed to ſuch labour. By this means, it is ſuggeſted, a much finer tilth is ſtricken into drills for receiving different kinds of ſeeds, and more expeditiouſly than by the angle of the common hoe on any line of direction; and that when one drill has been correctly opened, the others will of courſe be formed with accuracy.

In a ſecond form of this improved hoe, the ſhares are diſtributed in the manner for drawing, the workman in uſing it moving backward; and in the intention of adding more preſſure without ſubjecting the wriſt to fatigue, the contrivance of a rope is had recourſe to, which paſſing round the workman's waiſt, draws from the part where the hand would have acted.

Its weight, with two twelve-inch hoes, is 7lb. 3oz. It has another diſpoſition of the hoes, which is moſtly employed in the making of trenches in mellow fine lands, for the reception of manure in the planting of potatoes and other ſimilar crops. Theſe drills or trenches are formed with much expedition by ſtriking in a line, bringing the mould up into a ſort of half ridge, and then finiſhing it by turning and going back. Its weight, with three ſtraight ſix-inch hoes, is 6lb. 11oz.

There is ſtill an additional form of this improvement of the common hand-hoe, in which there are two outward hoes, a ſpace being left in the middle betwixt them, by which the tool is enabled to execute its work on each ſide of a drill or row of any kind of crop without difficulty or danger of hurting it.

It is aſſerted by the inventor, that by the uſe of this hoe two acres of barley are capable of being hoed in the courſe of a day, and that good work is made with it on wheat and oat crops.

The *double* hand-hoe is ſtill occaſionally in uſe in ſome places, and is a tool that is ſimple in its conſtruction, and capable of being had recourſe to with benefit on ſoils of the more open and light deſcription.

Hoe, *Breaſt*. This is a tool of the hoe kind that has been adviſed by ſome, as more adapted to particular uſes than thoſe of the ordinary hand ſort, as for the hoeing between the rows of ſuch grain crops as are diſtributed at narrow diſtances, as performing the work not only with more expedition, but in a more effectual manner.

Hoe, *Macdougal's*. This is a tool of the hoe deſcription, which bears the name of its inventor or improver, and which has ſomewhat the form of a ſmall light plough, being drawn by a labourer, who is attached to it by a proper contrivance before, and directed by another behind. It is a very convenient and uſeful implement in many inſtances, eſpecially where the crops ſtand at conſiderable diſtances in the rows, ſo as to permit it to work freely. As open wheels are conſtantly liable to clog and fill up, it might probably be an advantage in this caſe to have the wheel made perfectly ſolid.

Hoe, *Horſe*. This is a very powerful implement of the hoe ſort, which is now much in uſe for the cultivation of moſt ſorts of crops, that are ſown in the drill or row method.

The tools of this deſcription that are employed in the different counties of the kingdom, are extremely various in their nature, form, and conſtruction, according to the uſes and purpoſes for which they are deſigned, as well as the peculiar ſtates and circumſtances of the lands on which they are to be employed, and the nature of the drill machines by which the crops are put into the ground. They alſo differ greatly in their weights and ſizes, as well as in the ſhapes of the cutting parts or hoes.

But all the different kinds of hoes of this nature have a very great ſuperiority and advantage over thoſe of the hand kind when properly formed, not only in point of diſpatch from their working upon a great number of rows at the ſame time, but from their executing the buſineſs to a better depth, and in a much more perfect manner. It is obvious, that by means of this deſcription of hoe, the earth can be much more completely ſtirred and looſened about the roots of the plants, and the ground be kept far more clean and free from weeds than by the hand method, while the ſaving in labour and expence is very conſiderable. There can, therefore, be no doubt of the propriety of uſing them as much as poſſible in the buſineſs of modern huſbandry.

Among the numerous implements of this kind which have been lately invented, the *expanding horſe-hoe*, and ſix-ſhared horſe-hoe, deſcribed in Mr. Amos's work on drill-huſbandry, are deſerving of notice, as being practical tools. The former has a ſuperiority in many caſes from the circumſtance of its being formed with expanding ſhares, which can be regulated to ſuch diſtances as may be proper within the limits of twelve and thirty inches. It is found extremely beneficial in the hoeing of bean crops, whether ſown in drills or equi-diſtant rows. Likewiſe, in crops of the potatoe and cabbage kinds. The inventor has had much recourſe to it for theſe purpoſes in the county of Lincoln.

The ſix-ſhared horſe-hoe may likewiſe be very uſeful in different ſorts of grain-crops, which have ſmall intervals, ſuch as thoſe of nine inches, from its being capable of regulation in ſo far as the rows are concerned. It has alſo been found capable of application in the preparation and cultivation of lands of the ſtiff, ſtony, and gravelly deſcriptions, as well as in ſuch as are greatly over-run with weeds and other ſimilar trumpery, by means of having recourſe to teeth, tines, or other coulters, in the room of the triangular hoes; which ſhould be fixed in the tool in ſuch a manner as that they may not only cut and divide the more ſuperficial parts of the ſoil, but alſo effectually ſtir it below.

A convenient horſe-hoe, for the purpoſe of hoeing a number of rows at the ſame time, is capable of being furniſhed by the drill-machine, improved by Mr. Cook, merely by removing the drill-coulters, and ſupplying their places with proper ſhares for hoeing. But in doing this it muſt be obſerved, that ſoils of different qualities and textures will require ſhares of different forms and ſizes, but which can only be regulated by means of experience in any particular ſort of land. In ſandy, loamy, and all light ſorts of ſoil, or ſuch as have been perfectly broken down and reduced by tillage, ſhares from five to ſix inches in breadth for nine-inch drills, and thoſe of eight inches in breadth for twelve-inch drills, will perform their buſineſs in a ſafe and effectual manner. But in ſtrong clays, which are intermixed with pebbles, the ſhares of the hoes muſt not have ſo much breadth; and it is not improbable but that there may be ſome ſoils wholly incapable of flat-hoeing. Where, however, the texture of the ſoil in the intervals of the rows of grain is capable of being torn and ſtirred by long narrow plates of iron, having the forms of points or chiſſels introduced into the ſhanks of the hoe-ſhares, inſtead of the hoe-plates, there will be very great advantage obtained in the work. The hoe-plates are capable of being regulated ſo as to operate to a greater or leſs depth by different contrivances. It is found that ground cannot lie in too level a ſtate on the ſurface for the work of effectual and expeditious horſe-hoeing. In caſes, however, where the ridges or lands are in ſo convex or rounded a ſtate, as that the whole of the hoe-plates are incapable of performing the work in an equally deep manner in the ſame operation; ſuch as cannot be rendered uſeful may be taken out and laid by.

It is ſuggeſted by the improver of this horſe-hoe, that it is capable of being applied to ſeveral other beneficial purpoſes, in addition to that of hoeing drilled corn crops, ſuch as cutting up the rows of ſtubble as ſoon as the produce has been removed, with all ſuch weeds as may have eſcaped the hoe, and the ſtirring of ſummer-fallows, &c. With one man, two horſes, and a boy, it is ſaid that ten acres are capable of being wrought over in the courſe of a day; which is a great convenience, eſpecially in the buſy harveſt ſeaſon, when it would be wholly impoſſible to ſpare ſuch a number of men and horſes as would be neceſſary to effect the buſineſs with common ploughs. The ſame expeditious method is alſo capable of affording very great advantages, in cutting up the ſtubbles, either before or directly after the crops have been taken away, as time may be thereby gained for a ſecond ſowing of graſs-ſeeds where the firſt may have miſſed, and on cole, rape, and turnips, for the food of ſheep or neat-cattle, during the winter or ſpring.

Another ſimple and convenient tool of this deſcription, which has been lately employed with ſucceſs, is the *drill horſe-hoe*. It has been uſed in hoeing and cleaning drilled wheat crops with conſiderable advantage, in the practice of I. C. Curwen, eſq., in Cumberland, who ſtates, that "the ſimplicity and eaſe with which it is worked, has enabled him this ſeaſon to give his wheat-crop, which exceeds one hundred acres, two cleanings, at an expence ſomewhat leſs than a ſhilling per acre each operation; a man and boy, with one horſe, being able to clean above ſeven acres per day. The direction of the harrow, to prevent its injuring the grain, is effected by an alteration of the chain, by which it is attached to the wheels. The diſtance of the other teeth from the centre tooth muſt be regulated by the width of the drills. In caſe they exceed a foot, the harrow ſhould be broader, to admit of another row of teeth. To clean at nine inches, two inches and a half are allowed on each ſide of the centre tooth, by which means every part of the earth is cut between the rows of grain. The ſize and ſtrength of the teeth muſt be regulated by the nature of the ſoil."

Upon the utility of this hoe, Mr. Dykes has remarked, "that its effects appeared to him moſt highly beneficial, in clearing away in the ſpring all the weeds that had grown during the winter, amongſt the wheat, without the leaſt injury to the grain; and alſo in raiſing up the top ſoil, which had become ſad and heavy, and thus enabling the ſpring ſhoot to take root more eaſily; and, at the ſame time, it covers the roots of the corn with freſh ſoil, which are often left quite bare by the waſhing of the rains in winter, and ſubject to be killed by the froſts. It alſo enables the farmer to ſow his barley much earlier than he could broad-caſt, as it will both clear the corn previous to ſowing the graſs-ſeeds, and afterwards harrow them in." Indeed the advantage has appeared ſo great, that he has been induced to ſow the corn on his fallows by means of the drill.

A practical implement of this ſort has likewiſe been lately contrived by Mr. Waiſtell, which he denominates a *horſe-hoe*. In this tool, by combining the powers of the hoe and harrow a convenient and uſeful machine is afforded for working the intervals of drilled turnip, and other crops, that have ſufficient widths in the rows for admitting its action.

Its various uſes are, that "it enables the farmer to cultivate thoſe intervals as completely as a well-wrought fallow, ſo long as the horſe can travel therein without injury to the growing crop. It is not aſcertained who was the original inventor of this tool, but the firſt Mr. Waiſtell ſaw was at Weſt Park, in the vicinity of Barnard Caſtle. That in his poſſeſſion was brought from Carliſle, and great numbers have been ſince made from it. They anſwer perfectly for turnip crops, ſown at twenty-ſeven inches diſtance in the rows, and are greatly in uſe for that ſort of culture.

There are ſtill a great many other ſorts of horſe-hoes, but it is not neceſſary to take notice of them in this place, as they will be conſidered in ſpeaking of the operations which they are particularly calculated to ſerve.

Hoes of theſe ſeveral kinds may be ſeen by conſulting the figures in the plate belonging to this article.

Hoe, in *Gardening*, the common name of an uſeful and well-known garden implement.

Theſe tools are of different kinds, as *drawing* and *ſcuffling*, each of which has different ſizes or dimenſions.

The firſt ſort is fixed with its edge inclining a little inward; the workman, in uſing it, drawing it towards him. It is one of the moſt uſeful implements of gardening for many purpoſes, both for general hoeing, and in drills for ſowing many ſorts of ſeeds, looſening the earth about the plants, and moulding up the ſtems of them, as well as hoeing down weeds between all ſorts of plants that ſtand diſtant enough to admit it. It is the beſt adapted of any kind for thinning out eſculent crops to proper diſtances, to acquire their proper growth, ſuch as onions, carrots, parſnips, turnips, ſpinach, &c. And of this kind there ſhould be three or four different ſizes, from ſix inches width down to two inches, or leſs.

The firſt ſize is a large hoe for common uſe, about ſix inches long in the plate, by three or four broad, fixed on a long handle for both hands, and is the proper ſort to uſe for all common hoeing-work, and for drawing drills for ſowing peas, beans, kidney-beans, &c. It is the moſt eligible ſized hoe of any for broad-hoeing, between rows of all thoſe kinds of plants, and all others that ſtand diſtant enough, either in rows or otherwiſe, for the hoe to paſs between them, both to cut down weeds and looſen the ground, and to earth up the ſtems of the plants, and for all other purpoſes of hoeing where the plants ſtand diſtant, both in the kitchen and pleaſure-garden.

The ſecond ſize ſhould be about four inches in the plate longways, and the ſame breadth as the above. It is uſeful for drawing drills, and for hoeing among various plants, where the former ſort of hoe cannot be commodiouſly employed; as well as to thin ſome ſorts of eſculent crops that require moderate diſtances, ſuch as Dutch turnips, general crops of carrots, parſnips, &c. It is alſo a proper ſized hoe for hoeing common flower-beds and borders, &c. in moſt inſtances.

The third ſize ſhould be two inches and a half, or not more than three inches broad in the plate; and be fixed on a ſhort handle to uſe with one hand in ſmall hoeing, thinning out ſeveral ſorts of eſculent crops, and other work among cloſe-growing plants. A ſmaller one ſhould alſo be fixed on a longer handle, to uſe two-handed in hoeing borders, and other compartments of ſmaller plants ſtanding near together, both in the kitchen-ground, flower-garden, &c. This ſized hoe, on a ſhort one-handed handle, is likewiſe particularly uſeful for ſmall-hoeing, moulding, and thinning out many kitchen-garden crops in young growth, ſuch as onions, leeks, carrots, parſnips, ſpinach, &c. to cut them out to the proper diſtances. It is alſo a very convenient ſize for uſe on many other occaſions of hoeing; and for drawing ſmall drills for ſowing many kinds of ſeeds, and hoeing up flower-beds, &c. where the larger hoes cannot be readily admitted between the plants, ſo as to ſtir the mould effectually about them.

The fourth ſize ſhould be about two inches wide, and fixed in a ſhort handle. It is proper for ſmall-hoeing onions and ſmall crops of carrots, radiſhes, &c. the firſt time where they ſtand pretty cloſe, and where it is not deſigned to thin them out at once to their full diſtance, but to leave them rather thickiſh for culling, &c.

The edges of the hoes ſhould conſtantly be kept ſharp by occaſional grinding, that they may cut clean and freely.

The ſecond ſort, or ſcuffling-hoe, is commonly called a *Dutch-hoe.* It is fixed with the edge outward, on the end of a long handle, ſo as that the perſon uſing it may puſh it from him going backward, and never treading on the hoe-ground, as with the drawing-hoe. In regard to ſize, it ſhould be from about four to ſix or eight inches wide, open in the middle, for the mould and weeds to paſs through, ſo as not to be drawn in heaps; having a long ſocket at the back part, in which to fix the handle, which may be five or ſix feet in length.

This is very proper for ſcuffling over any piece of ground to deſtroy weeds, that is clear from crops, or between crops that ſtand wide, with which a perſon may make conſiderably more expeditious work than with a drawing hoe, eſpecially when the weeds are not ſuffered to grow large; in which caſe, one man can often do as much as two with the other ſort. It is not proper for hoeing out crops of eſculent plants, or for earthing up the ſtems of plants, nor for hoeing where the plants ſtand cloſe. But it is very uſeful for cutting down weeds in ſhrubberies and wilderneſs quarters, where the ſhrubs ſtand diſtant from one another. And it is the beſt ſort of any for ſcuffling over ſand-walks, or others made of looſe materials, in order to deſtroy weeds, moſs, &c.

When of a ſmall ſize, it is alſo found uſeful to run over flower borders, to cut up ſtraggling weeds; as, being fixed on a long handle, the work may be effected by ſtanding in the walks, without treading on the borders or walks, and thereby doing injury.

There is alſo a ſort of triangular hoe, which has been lately found very uſeful in hoeing many ſorts of ſmall crops that ſtand rather cloſe.

HOEDIC, in *Geography*, a ſmall French iſland in the Engliſh channel, near the coaſt of the department of Morbihan; about 9 miles E. of Belle-iſle, and 12 S.E. from the peninſula of Quiberon; on it are a town and village of the ſame name, and a fort. In 1746, this iſland was taken by the Britiſh. N. lat. 47° 41′. E. long. 2° 46′.

HOEING, in *Agriculture,* the work of breaking down, dividing, and rendering the particles of the mould or ſoil fine, by the uſe of tools contrived for the purpoſe, between the rows of drilled grain crops, or thoſe of other ſorts, ſet in rows at ſtill larger diſtances.

It is one of the moſt uſeful and important proceſſes, where crops are ſown or ſet in the drill or row method, and which ſhould conſtantly be well attended to, and executed.

The advantages of the hoe culture are, in general, conſidered to be extremely numerous; it completely deſtroys weeds; increaſes the means of the plants ſupplying themſelves with food, greatly promotes the fertility of the land; forwards the proceſs of vegetation; and leaves the ſoil in a great part prepared for ſucceeding crops. As rain, ſnow, and dews are capable of being taken up with avidity by the mould of the ſoil, while it is preſerved in a looſe, porous, and open condition, though in the contrary ſtate, or that of its being in a hard-bound, firm ſituation, they ſeldom reach much below the ſurface, being ſpeedily again taken up into the atmoſphere by the effects of the ſun and wind, producing little or no benefit; the work of hoeing muſt obviouſly, in this point of view, be of great utility. And accordingly it is found highly efficacious on ſtrong, ſtiff, loamy ſorts of land; while in thoſe of a very light open texture it is often hurtful, by ſuffering the moiſture and other elaſtic matters to eſcape too freely, when too much employed.

In conducting the work of hoeing, the ground ſhould be in a medium ſtate of dryneſs. Light dry ſoils are moſtly capable of being hoed at any ſeaſon; but ſuch as are of an adheſive compact quality, can only be hoed with benefit, at particular periods, when the mould of them is in a looſe friable ſituation.

In the hoeing proceſs, it is neceſſary to execute the buſineſs in different ways, according to the nature and circumſtances of the land. Upon the more ſtiff, heavy, loamy ſorts of ſoil, which are very apt to produce abundance of weeds, it will be found neceſſary to repeat it more frequently than on others of the more light and open deſcriptions. The hoes ſhould likewiſe be heavier, and the ſhares ſtronger, for the former than the latter. In grain, and ſmall ſeed crops, when drilled at narrow diſtances, the work of hoeing ſhould be performed by means of ſmall ſhares that bear a due proportion to the width between the rows. But for other larger ſorts of crops that are drilled or ſet at much wider diſtances, larger and ſtronger tools are proper.

Many farmers are of opinion that hoeing is greatly more beneficial when executed with horſe-hoes, than any of thoſe of the hand kind, from their looſening the ſoil more deeply;

and thereby providing more nouriſhment for the uſe of the crops. Hence, it is ſuppoſed, ariſes "the vaſt importance of the operation of horſe-hoeing, during continued drought in the ſpring or ſummer; and to this cauſe, in a great part at leaſt, it may probably be owing that lucern, uſually ſowed and horſe-hoed, is ſaid to endure drought ſo much better than natural graſſes, and to appear green and flouriſhing whilſt theſe are withered and burnt up. The almoſt inſtantaneous benefit conferred, by this operation, upon cabbages, which are root-bound from a baked ſoil, or upon wheat which appears yellow and ſickly in the ſpring, is its beſt recommendation." Theſe crops may, it is ſaid, "be ſeen, after being worked in the rows, from a withered ſickly hue, and flagging condition, turn erect, and change their colour to a deep and flouriſhing green within twenty-four hours. Nay, of ſuch importance is the operation of deep and effectual hoeing held by experienced people, that a Kentiſh farmer has been known, in a time of great drought, to ſend his men with their ſpades into the alleys of peas, being afraid of damage from horſe-work."

With regard to the number of hoeings that may be neceſſary for different ſorts of crops under the drill ſyſtem, it muſt of courſe vary greatly according to the particular circumſtances of the different caſes. It is uſually, however, about three, four, or even five, in remarkable inſtances. But it is chiefly to be regulated by the diſpoſition of the land to throw up weeds; where this is conſiderable, more hoeings will conſequently be required, as no weeds ſhould ever be allowed to riſe.

In reſpect to the proper periods of hoeing, there is conſiderable diverſity of opinion, eſpecially as to grain crops, and thoſe of ſome other kinds.

In wheat, when ſown ſufficiently early to admit of the work being done in the autumn, the firſt hoeing is adviſed never to be executed until the plant has acquired more than one blade, and it may be delayed till it has four or five leaves, in caſe that no particular occaſion for it is ſeen, and that it be performed before the winter ſets in.

The method of hoeing is differently executed in different caſes. The author of the horſe-hoeing huſbandry recommends, that the firſt operation ſhould be performed from the rows of the plants, in one bout of the machine, by which means a ridge is left in the middle of the interval, and a furrow or channel on each ſide of it, having the row of plants between, by which the ſnow and rains are caught in the winter, and much benefit thereby produced, as well as by the greateſt poſſible ſurface of the ſoil being expoſed to the influence of the atmoſphere. It has been contended by the above writer, that, for the firſt time, the work can ſcarcely be done to too great a depth, or too near to the rows, provided that the plants are not injured, or rooted up, as by laying the roots almoſt bare in this way, and expoſing them to the action of the froſts, no ſort of harm is ſuſtained by them. This is, however, a practice, the utility of which may be juſtly diſputed, as it is more natural to ſuppoſe that benefit may be derived from the mould being ſtirred and laid up to the ſtems of the plants, than by expoſure during the rigours of ſuch ſeaſons. And it is even admitted, that much caution is neceſſary in approaching the rows of plants, in performing this ſort of work on very light ſoils. It is alſo ſuggeſted, as a common fault among workmen in employing the hoe plough, that they merely ſkim up and down the middle of the intervals between the rows without going ſufficiently near them, or ſufficiently deep; and it is adviſed, as a great improvement of the cuſtom, to trench or draw another furrow to a proper depth, if practicable, immediately, or otherwiſe before the ridge be turned back in the ſpring. In this way the plants are left, as it were, on the brink of a trench, by which means they are preſerved conſtantly dry and free from ſtagnant moiſture, being, at the ſame time, ſheltered by the ridge thrown up in the alley.

In uſing the drill huſbandry on ſtrong ſoils, there may often be danger in protracting the firſt horſe-hoeing to too late a period, on account of the ground being apt to become too moiſt for performing the buſineſs in an effectual manner.

The work of horſe-hoeing in the ſpring may be begun "as ſoon as the froſts are out of the ground, and the ſurface mould is ſufficiently firm to ſupport the animals without injury in its execution; the ridges between the rows are now to be divided and turned back, the finely reduced mould from the action and influence of froſt and ſnow being laid to the roots of the plants, by which an abundant ſupply of nutritious matter is taken up. It is not believed that even the ſmalleſt injury is done to the roots, by the breaking and tearing of the innumerable threads and filaments which branch out on every ſide, as nature, in a very ſhort time, not only remedies the miſchief, but provides abſorbing mouths in proportion to the ſupply of nouriſhment that is made. It is ſuggeſted that the farmer muſt conſtantly be the judge of the neceſſity for light harrowing and rolling, before the work of ſpring-hoeing the rows is begun.

The number and diſtances of the ſucceeding horſe-hoeings muſt, in a great meaſure, be governed by the circumſtances of the land, and the convenience of the cultivator, but they have chiefly two objects in view; firſt, that of turning in the weeds the moment they are in the proper condition; and ſecondly, that of moving the ſurface mould before it becomes too much baked, and impervious to the dews: the latter of theſe points muſt be carefully attended to in dry parching ſeaſons, as the weight of the crop depends greatly upon it. The advantages of the drill ſyſtem are here likewiſe clearly evident. There may be a ſtill further neceſſity for an additional ſtirring, in ſuch ſoils as are much exhauſted or impoveriſhed, ariſing from the crops having taken up the chief of the nouriſhment which was provided by the former hoeings, conſequently a new earthing up of freſh mould near the period of their coming to perfection may be of great ſervice. It is conceived that ſlight hoe-ploughing can never be in the leaſt injurious, at whatever ſeaſon it may be executed; but deep working in this way ſhould never be permitted near the rows of the plants either in the ſpring or the ſummer months. However, the middle part of wide intervals may be wrought to a good depth, as, in this caſe, the plants are left well earthed up at the laſt hoeing.

In reſpect to the modes of executing the work of horſe-hoeing, it is hinted, that "the old method of very wide intervals for the horſe-hoe, whilſt the ſeven-inch rows upon the ridges were truſted entirely to the operation of the hand-hoe, ſeems now to be exploded, and to have given way to the improvement of horſe-hoeing the rows in a conſiderable number at one time." It is probable that this expeditious method was firſt introduced by Ellis and Ducket. The ſuperiority of ſuch a practice over hand labour cannot be diſputed; but when had recourſe to on ſtrong rough lands, its powers may be queſtioned with propriety, and a preference be juſtly given to the regular and effective working of the hoe-plough. Upon ſuch clayey grounds, deep and effective pulverization is of great conſequence, ſlight ſurface working producing but little benefit, the earth below being left in a hard unreduced ſtate, almoſt wholly unfit for the purpoſes of vegetation.

The work of horſe-hoeing muſt, however, in a great meaſure, be regulated, in all caſes, by the circumſtances of the ſoils, and the particular modes of drill-ſowing that may have been employed.

It is ſtated by a late able writer, that "early in March Mr. Coke uſes the hand-hoe, which, for hoeing the rows of wheat and peas, is about ſix inches wide; and for hoeing thoſe of barley, about four inches wide. By this hoe, the ſurface is not only turned over, and the weeds between the rows rooted up, but the mould is alſo accumulated about the roots of the growing corn, and covers, and conſequently deſtroys, the low growth of poppies amongſt them, which are a very frequent weed in that part of the country. A ſecond hoeing is performed about the middle of May, and the ſoil is again not only cleared from weeds, but accumulated againſt the riſing corn, each of which hoeings coſt about twenty pence per acre. Nevertheleſs, it is ſuggeſted, that ſome attentive agricultors uſe the horſe-hoe belonging to Mr. Cook's drill machine, though the rows of corn are but nine inches from each other; and aſſert that this occaſional trampling of the horſe on the young plants is of no very ill conſequence, a circumſtance well worth obſerving, as it removes the principal diſadvantage of the horſe-hoe, which conſiſts in the too great diſtance of the alternate rows of the corn plants." It is further ſtated, that "by the earth being thus accumulated againſt the roots of the corn, it is ſaid to tillure, or tellure, much; that is, to throw out four or ſix ſtems, or more, around the original ſtem, and thus to increaſe the number of ears, like tranſplanting the roots; inſomuch that Mr. Coke obtains by this method between four and five quarters of wheat on every acre, which, in the broad-caſt, did not yield more than three quarters an acre, beſides ſaving a ſtrike and a half of the ſeed corn, unneceſſarily conſumed in the broad-caſt method of ſowing. To this ſhould be added another advantage, that as the land is thus kept clear from weeds, and has its ſurface twice turned over, and thus expoſed to the air, it is found to ſave one ploughing for the purpoſe of a ſucceeding crop of turnips." But whether this tilluring of the plants may be really beneficial, without hurting their roots by too much exhauſtion, has not been hitherto ſatisfactorily ſhewn.

A late writer, who objects to the proceſs of hoeing, as practiſed by Tull, Chateauvieux, and others, as being very imperfect, by leaving the roots of the plants too much expoſed and ſubject to the effects of the drying ſummer winds, as well as various other cauſes, in the firſt operation of the buſineſs, ſuppoſes, that all the different proceſſes of horſe-hoeing may be performed in an equally effectual manner, by the common ſwing-plough, as by any of the hoe-ploughs which are generally employed. The mode of uſing the ſwing-plough in this ſort of work, is deſcribed and explained in the ſecond volume of "Recreations in Agriculture," at conſiderable length, with a plate.

But notwithſtanding the eaſe, convenience, neatneſs, and diſpatch with which the work of hoeing may be executed, either by means of ploughs of the common hoe or ſwing deſcriptions in ſuch ſorts of crops as ſtand in need of wide intervals, as thoſe of potatoes, cabbages, beans, and others, which are ſimilar in their nature and habits of growth, they are not by any means properly adapted for executing the buſineſs in ſuch crops as are put into the ground at narrow diſtances, ſuch as thoſe of the grain kind. In theſe caſes, ſuch hoe machines as work between many different rows at the ſame time, are commonly found the moſt proper and convenient.

Other implements, ſuch as thoſe of the cultivating and ſcarifying kinds, may be had recourſe to with much advantage, in many caſes, in the early ſpring, in the view of looſening and ſtirring the earth about the roots of theſe ſorts of crops.

It has been ſtated by a writer on drill huſbandry, that in performing the work of hoeing in wheat crops, as that plant has two ſorts of roots, namely, the *ſeminal* and the *coronal*, the latter of which rarely ſhows itſelf until towards the end of March, or the beginning of the following month, that is the proper period for aiding the efforts of nature; which is adviſed to be done by means of paſſing over the field with a pair of light harrows, and in this way not only deſtroying the weeds, but affording an earthing-up to the coronal roots of the plants. As ſoon as this harrowing has been executed, a roller ſhould be immediately paſſed over the field, in order to render the ſoil firm about the roots of the crop, as well as to prepare for a ſecond hoeing; but this proceſs may not be neceſſary except in the more light kinds of ſoils. About the beginning of May, and ſometimes ſooner, it is ſuggeſted, that the ſecond hoeing ſhould be undertaken by the uſe of the ſix-ſhared horſe-hoe or the breaſt-hoe. The latter, however, only hoes one row at a time, and is of courſe very inferior to the former; which performs the work on ſix or ſeven, according to the diſtances at which the crops are ſown. Where this laſt ſort of hoe is employed, the ſeed box, &c. ſhould be wholly removed, nothing being left but the mere frame of the drill machine, to the coulter bar of which the hoes ſhould be attached. And in the execution of the work, the horſe ſhould paſs exactly in the ſame track in which it went in drilling the ſeed, one hoe leſs than the number of rows drilled being made uſe of; that interval between the breadths of the drill implement being hoed by the hand, on account of its being unequal from the unſteadineſs of the horſe; and by the workman who manages the machine keeping his eye conſtantly on one of the hoes, ſo as to preſerve it in the middle of the interval, the reſt muſt with certainty be perfectly right in their direction. In caſes where the labourer who directs the hoes wants to move them to the right or left, ſo as to keep them in the middle of the intervals, he ſhould lift up the handles in a ſlight degree at the time he moves them. But it makes no material difference, whether the coulters or hoes be uſed or not, as the manner of regulating them is equally the ſame, and the directions that have been given for the uſe of the hoes are equally applicable to the uſe of the coulters in this hoe machine.

The third hoeing is directed to be had recourſe to about the latter end of May, or the beginning of the following month, as at that ſeaſon it greatly invigorates the coronal roots of the plants, and at the ſame time promotes the growth of the ſtems or ſtalks.

And where a fourth hoeing is found requiſite, it ſhould be performed about the end of June, or in the beginning of the ſucceeding month, according to the circumſtances of the caſe. However, as there are conſiderable variations in the ſoils and ſeaſons, it is ſuggeſted as impoſſible to aſcertain with preciſion the exact period when the work ſhould be performed. Conſequently, much muſt be left to the judgment and diſcretion of the farmer; but weeds ſhould in no inſtance be ſuffered to become predominant, as thereby much injury muſt neceſſarily be ſuſtained in the crops.

When drilled crops of the wheat kind are hoed by the hand method, which ſhould perhaps be only managed in this way; it is ſuppoſed by ſome that the work ſhould be executed, as ſoon after the plants are up as poſſible, by two-inch hoes.

In the execution of this ſort of work, on crops of the barley kind, as there are likewiſe two ſets of roots, of a ſimilar nature to thoſe in wheat, as the ſeminal and coronal, the latter of which is formed about three weeks after the ſowing of the ſeed, it is ſuggeſted that upon the appearance of this root, the field ſhould be harrowed, and afterwards rolled, in order to prepare it for the firſt hoeing proceſs, and that the ſecond and third hoeings ſhould be had recourſe to at proper diſtances of time, being executed exactly in the ſame way as has been already directed for conducting the work in crops of the wheat kind.

In managing the work in oat crops, it is adviſed, that as ſoon as the coronal roots begin to ſhow themſelves, the field ſhould be harrowed and rolled as above for the firſt operation of the hoe. And that the ſecond and third hoeings, in caſes where they may be requiſite, ſhould be performed in proper times afterwards, and in the ſame method as has been directed for crops of wheat.

It has, however, been ſhewn that the work of hoeing is capable of being effected in a very exact and perfect manner, without the neceſſity of having recourſe to the uſe of hand-hoes at all in any of theſe kinds of grain crops, by means of the improved horſe-hoe of Mr. Cook. See Hoe.

But in drilled crops of wheat as well as barley, it is the advice of many good cultivators to have the work performed as ſoon as any weeds make their appearance, whether the horſe or hand method is had recourſe to for the purpoſe.

And in caſes of this nature, the hoes ſhould conſtantly be of the ſame ſizes with the drills, that injury may be more effectually guarded againſt. In theſe inſtances the work may frequently be executed by means of one horſe fixed to a tool that does the buſineſs on four or five rows at the ſame time, a workman directing it behind by means of the handles.

In the work of horſe-hoeing bean and pea crops, the writer of the ſame ſyſtem of "Drill-huſbandry" recommends, that as ſoon as the plants can be fully diſtinguiſhed in the rows, they ſhould be harrowed over and rolled in order to complete them for the firſt operation of the hoe. And that in caſes where the ſoil is mellow in its nature, the expanding horſe-hoe ſhould be employed about the middle of May, at which time the beans or peas will be ſufficiently eſtabliſhed in the ground, ſo as not to be injured by the free uſe of the tool; the ſhares being kept perfectly ſharp, ſo as to cut the weeds with facility, in order that the expanding harrow may bring them more completely to the ſurface, and thus finiſh the ſecond proceſs of the hoe. The crops may then remain three or four weeks, or until more weeds appear to be thrown up, when they ſhould be ſkim-hoed a ſecond time, which completes the buſineſs of the third hoeing. But in the courſe of ſome days afterwards, the rows ſhould be hand-hoed in a perfect manner, and then well earthed up, which concludes the work of the fourth hoeing. Two or three weeks after this they ſhould be again hand-weeded, and then earthed up the ſecond time, which finiſhes the buſineſs of hoeing that is uſually found neceſſary. It is adviſed, however, that if the ſoil ſhould be of a ſtiff, gravelly, or ſtony nature, the hoe-plough ſhould be had recourſe to in the ſecond hoeing, ploughing a furrow off from the beans on each ſide, ſo as to make a ridge in the intervals between the rows; by which means they will then ſtand upon a ridge of about ſix inches in width, which ſhould be well hand-hoed. About a week afterwards, the double mould boarded plough ſhould be employed, to earth up the plants in the rows. And in two or three weeks they ſhould be again hand-weeded, being earthed up a ſecond time by the double mould boarded plough as ſoon as the weeds are dead, which moſtly terminates the work of hoeing in ſuch crops.

In the buſineſs of hand-hoeing crops of this ſort, ten-inch hoes are commonly the moſt proper, the mould in the ſecond proceſs being brought up to the roots of the plants, upon which, eſpecially in peas, they ſhould be made to reſt in an inclining poſition, ſo as to afford a more complete expoſure to the influence of the ſun and atmoſphere.

In the work of hoeing drilled turnip crops, it is ſuggeſted that, as ſoon as they have got four vigorous rough leaves, they ſhould be harrowed with a pair of light harrows, and in two or three weeks afterwards the ſecond hoeing ſhould be given, either by the breaſt, or ſix-ſhared horſe-hoe, in order to cut up the weeds in the intervals, but ſuch weeds as are in or near the rows ſhould be extirpated by the hand-hoe, the turnips being thinned out at the ſame time. The third hoeing may be had recourſe to in two or three weeks after this with the ſame ſort of hoes, the rows being alſo well hand-hoed, and the turnips ſet out to their proper diſtances. And it is hinted that this method of turnip hoeing is equally applicable to the hoeing of cole, with the exception of the harrowing, which ſhould be wholly omitted.

It is adviſed by many to give the firſt hand-hoeing in the more early turnip crops, as ſoon as the leaves ſpread about four inches each way; repeating the operation at the diſtance of about a fortnight, ſo as to leave the plants about twelve inches apart; but in the later crops, the nature and quality of the land ſhould be well conſidered, and the diſtance regulated accordingly; however, eight or nine inches are quite ſufficient in general.

In carrot crops the method of hoeing is, as ſoon as the plants are from two to three inches above the ground, to have them harrowed over by a number of harrows faſtened together by a pole, ſo as to be capable of covering the ridge, the horſes being made to walk in the furrows, in order to prevent treading the ground, or doing injury to the young plants. In two or three weeks after the harrowing, the ſecond hoeing ſhould be given to clear the intervals of weeds, ſuch as are in or near the plants in the rows ſhould be cut up with the hand-hoe, and the plants thinned out at the ſame time. The crop may remain for two or three weeks in this ſtate, or until weeds begin again to appear. The hoes ſhould then be again employed, the breaſt or horſe-hoe to clean the intervals, and the hand-hoe for the rows; and where any double carrots are left, they ſhould be taken away, and ſuch plants as are to ſtand for the crop ſet out to their proper diſtances. In the execution of the work in carrot and turnip crops, the four-inch hoe is preferred by ſome for the latter, and the three-inch for the former, the plants being left in the firſt hoeing at ſuch a diſtance as may ſeem requiſite; and in the ſecond ſetting them out to that of from three to five or ſix inches diſtance, according to the nature of the ſoil.

In the buſineſs of hoeing potatoe crops, it has been ſuggeſted that, as they are in general ſet upon light mellow ſoils, the expanding horſe-hoe is well ſuited to their culture. It has the properties of being expeditious, effectual, and cheap in the execution of the work. The hoeing in this crop may, however, be well performed by the uſe of the hoe-plough, or indeed any common ſowing plough, as already noticed. It is adviſed, that as ſoon as the plants are fairly above the ground, they ſhould be harrowed once over in a place as a preparation for the firſt hoeing; and that in about two weeks afterwards they ſhould be ſkim-hoed for the ſecond operation, and in two or three weeks more again ſkim-hoed; the expanding harrow being conſtantly employed to drag the weeds out of the ground after they have been cut up by the hoe. Directly after the ſecond ſkim-hoeing they ſhould be well hand-hoed in the rows; and as ſoon as the weeds are dead, and in ſome meaſure decayed, the plants in the rows ſhould be earthed up well by the ſame tool properly prepared for the purpoſe. See Hoe.

When more weeds begin to ſhew themſelves, but before the potatoes begin to ſpread too much, they ſhould be hand-weeded in the rows, and then earthed up a ſecond time. When more weeds appear, and ſeem likely to run into ſeed before the potatoes are taken up, they ought to be pulled up by the hand, and conveyed from the field, or laid in heaps and conſumed by fire, or formed into an earthy compoſt by means of cauſtic lime, and rich mould.

In the hoeing of this ſort of crop others adviſe the uſe of eight or ten-inch hoes, as the land is more or leſs ſtony; in the firſt operation drawing up the mould ſo as to cover the roots and prevent their riſing above the ſurface; afterwards earthing them up with the mould from betwixt the rows of the plants.

In hoeing cabbage crops, it is ſuggeſted, that as the month of May is the principal ſeaſon for planting them to ſtand the winter, the work ſhould be finiſhed at that time; and that in about three or four weeks after they have been planted out, the hoe-plough ſhould be had recourſe to, ploughing off a furrow from the rows of cabbages on each ſide, ſo as to form a ſort of ridge in the intervals; the cabbages being left upon a flat ridge of ſix or eight inches in breadth. Theſe ridges ſhould be well hand-hoed, and the mould brought up well to the plants at the ſame time. When the work of hand-hoeing has been completed, the expanding harrow may be made uſe of in order to harrow the ridges in the intervals, by which the weeds are deſtroyed, and left upon the ſurface to decay.

Ten or twelve days after this harrowing has been done, the hoe-plough may again be had recourſe to, in order to turn back the mould to the roots of the cabbage plants, on each ſide of the rows: and in about a fortnight after this earthing up, the bottoms of the intervals ſhould be cleared up by the horſe-hoe or the hoe-plough, which has not only a very pleaſing effect, but is highly uſeful to the crop. It ſhould likewiſe be repeated a ſecond time when the weeds begin to ſhew themſelves, before the cabbages ſpread ſo as to prevent the horſe from paſſing in the intervals without injury. Where additional weeds are thrown up, they may be removed by hand labour, and any injurious inſects that may be preſent at the ſame time deſtroyed. The hoe-plough, or common ſwing-plough, anſwers here perfectly for the purpoſe of hoeing.

Where the hand mode is had recourſe to in executing the work of hoeing, a three-inch hoe is commonly firſt employed, and in the courſe of the fortnight or three weeks afterwards a four-inch hoe; after that the plants being uſually drawn out, and planted ſo as to give the moſt ſuitable diſtances according to the condition of the ſoil.

Although both the hand and horſe method of hoeing crops muſt frequently become neceſſary, it is evident that the latter has conſiderable ſuperiority in point of cheapneſs, convenience, and the effectual manner of executing the work. See the culture of the different grain, root, and other crops, under their proper heads.

Hoeing, in *Gardening*, a neceſſary operation performed by the hoe, to deſtroy weeds, looſen the ſoil, and mould up the ſtalks or ſtems of plants of different kinds, and thereby promote their growth.

It is an expeditious method of deſtroying weeds between all ſorts of plants that ſtand diſtant enough to admit it in the intervals and rows.

When principally deſigned to deſtroy weeds, it ſhould always be performed to ſome depth, and in dry weather, the more ſunny the better, eſpecially when the weeds are not to be raked off, that they may die as ſoon as they are cut down, or at leaſt be ſo much flagged or withered by the ſun and air as not to grow again.

This ſort of work, beſides deſtroying weeds, is likewiſe uſeful in looſening the ſurface and diſpoſing the earth to receive the greater benefit from the air, dews, rains, &c. to the great nouriſhment of all ſorts of plants, and, by breaking up the ſurface, dividing the clods, and ſtirring the earth, keeping it freſh and proving a very beneficial culture to all vegetables. In ſoils apt to bind after much wet, which cauſes the plants to appear of a ſtinted growth, hoeing is of vaſt advantage in promoting their immediate growth and future progreſs.

The application of earth about the ſtems of plants, ſuch as earthing up rows of peas, beans, kidney-beans, cabbages, cauliflowers, &c. is conſtantly of great ſervice in protecting the ſtrength and vigour of the crops, as well as in giving them a neat appearance.

It is alſo beneficial in thinning out many cloſe-ſtanding crops to proper diſtances, cutting out the ſuper-abundant plants and the weeds, and looſening the ſoil in an advantageous manner. See the particular crops.

HOEI-TCHEOU, in *Geography*, the moſt ſouthern city of the province of Kiang-nan, in China. It is one of the richeſt cities in the empire: the people are economical and temperate, but they are active and enterpriſing in trade. Their tea, varniſh, and engravings, are the moſt eſteemed in China. It has ſix cities of the third claſs dependent upon it; and the mountains which ſurround this canton contain gold, ſilver, and copper mines. N. lat. 29° 57′. E. long. 118° 14′.—Alſo, a city of China, of the firſt rank, in Quang-tong, celebrated for the fertility of the country round it, and its extenſive trade. Its juriſdiction comprehends 11 cities of the ſecond and third claſs. N. lat. 23° 1′. E. long. 114°.

HOEMAH, a town on the S. coaſt of the iſland of Bourro. S. lat. 3° 50′. E. long. 127° 22′.

HOENFURST, a town of Pruſſia, in the circle of Natangen; 26 miles S. of Brandenburg.

HOENSEE, a town of Pruſſia, in the circle of Samland; 12 miles E.S.E. of Goldap.

HOEREA, a town of European Turkey, in the Morea; 27 miles N.W. of Miſitra.

HOEROMSK, a town of Norway, in the dioceſe of Aggerhuus; 16 miles S.S.W. of Chriſtiania.

HOESSERING, a town of Weſtphalia, in the principality of Luneburg-Zelle, ſituated on the Hardan; 22 miles N.E. of Zelle.

HOET, Gerard, in *Biography*, born at Bommel in 1648, and was a diſciple of Warnard van Ryſen, an excellent painter, who had been bred in the ſchool of Poelemburg; but his genius ſoon exerted itſelf in ſuch a manner, that he was enabled to proceed happily in his profeſſion, without being indebted to any inſtructor.

When he commenced artiſt, he was at firſt invited to Cleve, where his paintings procured him very great credit; but he was afterwards prevailed on to viſit France: yet in that kingdom he had not the good fortune to meet with encouragement in any degree proportioned to his merit; and therefore he turned his attention to England, whither he certainly would have directed his courſe, had he not been diſſuaded by Voſterman, who at that time was preparing to leave the court of London. At laſt he ſettled at Utrecht, and in that city and its neighbourhood found a ſufficient number of admirers and friends who conſtantly employed his pencil; and afforded him continual opportunities to diſplay his abilities, in executing ſeveral grand and beautiful deſigns for ceilings, ſaloons, and ſuperb apartments, and alſo in finiſhing a great number of eaſel pictures for their cabinets.

The reputation of Hoet, for knowledge and ſkill in his profeſſion, was ſo univerſally eſtabliſhed at Utrecht, that he was appointed director of an academy for drawing and painting, which he conducted with great honour to himſelf, and remarkable advantage to his pupils. He had a lively imagination, a very ready invention, and a fine genius for compoſition; as alſo a nice adherence to the coſtume. His manner of painting was clean and neat, and he was thoroughly maſter of the true principles of the chiaro-ſcuro. His figures in general are deſigned with elegance, and drawn with correctneſs; his colouring is lively, natural, and full of harmony, from the judicious oppoſition of his light and ſhadow; his touch is light and firm, and his pictures have a great deal of tranſparence. His ſmall eaſel paintings are exceedingly delicate in the touch and the finiſhing; and yet his larger works are always pencilled with a freedom that is ſuitable to thoſe grander compoſitions.

Many capital pictures of this maſter are in the palace of Slangenberg; and his eminent talents may be ſeen in the grand ſtair-caſe at Voorſt, the ſeat of the earl of Albemarle. In Holland, and alſo in our kingdoms, ſeveral charming pictures of Hoet are preſerved; ſome of them in the manner of Poelemburg, and others in the ſtyle of Carel du Jardin. He died in 1733, aged 85.

HOF, or Hoff, in *Geography*, formerly imperial, a town of Germany, in the principality of Culmbach, on the Saale, by which it is divided into the Old and New Town. It has three fauxbourgs, four churches, an academy, and a woollen manufacture. In its environs are quarries of marble, red, black, and grey, ſome of the latter being marked with red ſpots like blood; 46 miles N.E. of Bamberg. N. lat. 50° 18′. E. long. 12° 30′.—Alſo, a town of Norway, in the dioceſe of Aggerhuus; 36 miles N. of Berga.

HOFF, a town of Moravia, in the circle of Olmutz; 18 miles N.E. of Olmutz. N. lat. 49° 46′. E. long. 17° 27′.—Alſo, a town of Pruſſia, in the province of Natangen; four miles S. of Landſberg.

HOFFHEIN, a town of the duchy of Wurzburg; 36 miles N.E. of Wurzburg.

HOFFKIRCHEN, a town of Auſtria; 10 miles S. of Aigen.

HOFFLITZ, a town of Bohemia, in the circle of Leitmeritz; five miles S.E. of Tetſchen.

HOFFMAN, in *Biography*, an excellent compoſer of inſtrumental muſic, particularly ſymphonies, was maeſtro di cappella in the cathedral of St. Stephen at Vienna in 1772, and a maſter much eſteemed at that time in the imperial capital.

HOFFMANISTS, in *Eccleſiaſtical Hiſtory*, denote thoſe who eſpouſed the ſentiments of Daniel Hoffmann, profeſſor of the univerſity of Helmſtadt, who, from the year 1598, maintained that philoſophy was a mortal enemy to religion; and that what was true in philoſophy was falſe in theology. Theſe abſurd and pernicious tenets occaſioned a warm and extenſive controverſy; at length Hoffmann was compelled by Julius, duke of Brunſwick, to retract his invectives againſt philoſophy, and to acknowledge, in the moſt open manner, the harmony and union of ſound philoſophy with true and genuine theology.

HOFFMANN, Gaspar, a phyſician of ſome eminence about the beginning of the ſeventeenth century, was a native of Gotha, in Thuringia, where he was born in November, 1572. By the aſſiſtance of a friend he was ſupported during his reſidence at the moſt celebrated univerſities of thoſe times, and graduated at Baſle in the year 1605. In 1607, he was appointed profeſſor of the theory of medicine at Altdorf, the duties of which, and of other profeſſorſhips, he continued to fulfil, with credit and reputation, until his death, which occurred in November, 1648. Gaſpar Hoffmann was generally conſidered by his contemporaries as a man of great erudition, and was author of numerous publications, in which he ſhewed a bigotted attachment to the doctrines of the ancients, eſpecially of Ariſtotle. His works are not ſufficiently intereſting, however, at preſent to require an enumeration of their titles. Haller conſidered much of his diſplay of knowledge as ſpurious; and affirms that, as he wrote upon anatomical ſubjects without having touched a knife, ſo he treated copiouſly on the practice of phyſic, without having viſited the ſick. Eloy. Dict. Hiſt. Haller Bibl. Med. Pract.

HOFFMANN, Maurice, a phyſician, anatomiſt, and botaniſt, was born at Furſtenwald, a ſmall town in the Middle Mark of Brandenburg, in September, 1622. During his early youth, his native country was deſolated by war and peſtilence, which compelled his parents to fly from place to place, and interrupted the education of Maurice, whoſe acquirements did not go beyond the art of writing. Having loſt his father and mother at the age of ſixteen, his ardour for knowledge led him to Altdorf, in 1638, where a maternal uncle was profeſſor of medicine. Here he made a moſt rapid progreſs in philoſophy and the learned languages, and commenced the ſtudy of phyſic. In 1641 he repaired to the then celebrated univerſity of Padua, where he was particularly devoted to the ſtudy of anatomy and botany. In the former of theſe ſciences he is entitled to the name of a diſcoverer, if the relation of Bartholin be true; that, while yet a ſtudent, he was amuſing himſelf with the diſſection of a turkey, and diſcovered the pancreatic duct, which he ſhewed to the anatomiſt Wirſung, with whom he lodged at Padua, and who afterwards found it in the human ſubject, and gave it his own name. After a reſidence of three years in Italy, Hoffmann returned to Altdorf, where he received the doctor's cap in April, 1645, and was ſoon appointed to a profeſſorſhip; for in the year 1648 he obtained the extraordinary chair of anatomy and ſurgery; and in the following year he ſucceeded Gaſpar Hoffmann as ordinary profeſſor of theſe departments. He likewiſe was appointed ſucceſſor to Lewis Jungerman, in the botanical chair, in 1653. He urged the ſtrongeſt ſuggeſtions relative to the neceſſity of a garden for the culture and demonſtration of plants, and was not leſs ſtrenuous in his repreſentations in favour of the eſtabliſhment of a laboratory and an anatomical theatre: and it was to his exertions that the univerſity was indebted for theſe valuable acquiſitions. In addition to his academical occupations, he purſued the practice of medicine with conſiderable aſſiduity; and he obtained ſuch eminence as a practitioner, that ſeveral of the German princes honoured him with the title of their phyſician. In a word, his induſtry in the cloſet, his ſkill and humanity at the bed-ſide of the ſick, his eloquence in the chair, and his various ſocial qualities, rendered him worthy of the general eſtimation in which he was held. He died of apoplexy, on the 20th of April, 1698, in the ſixty-ſeventh year of his age. He had been three times married, and had eighteen children.

Maurice Hoffmann wrote ſeveral diſſertations on anatomical topics, but his principal works were botanical. On this ſubject he publiſhed "Floræ Altdorffinæ Deliciæ Hortenſes," 1660, or a catalogue of the plants in the botanical garden; to which ſeveral appendices were afterwards printed, containing the additional plants, which were introduced in ſubſequent years. He likewiſe printed "Floræ Altdorffinæ Deliciæ Sylveſtres," 1660, being a catalogue of the wild plants, growing ſpontaneouſly in the neighbourhood of Altdorf: and "Deſcriptio Montis Mauritii in agro Leimburgenſium, &c." 1694, being a catalogue of the plants of Mount Maurice and the adjacent countries. Eloy. Dict.

Hoffmann, John Maurice, ſon of the preceding, was born at Altdorf, in October, 1653. He acquired a knowledge of the learned languages at Herſpruck, and ſtudied medicine and philoſophy under his father, and ſubſequently at Frankfort upon the Oder, and at Padua. After a reſidence of two years in the laſt mentioned univerſity, he made the tour of Italy, and returned to his native city, where he was admitted to the degree of M. D. in 1675. His talents and acquirements obtained for him ſucceſſively the higheſt honours and offices in the faculty at Altdorf. He began with the profeſſorſhip extraordinary of anatomy, to which he was appointed in 1677, and in 1681 he became ordinary profeſſor of the ſame branch. In the following year, the profeſſorſhip of chemiſtry was given to him, and he read ſeveral courſes in the laboratory, with which his father's ſolicitations had enriched the univerſity. He afterwards undertook the profeſſorſhip of botany. In 1709, he reſigned the anatomical chair, and confined himſelf to the profeſſorſhip of the practice of medicine, which he retained as long as he remained at Altdorf. But Hoffmann was not more diſtinguiſhed by the able performance of his academic duties, than by the ſucceſs of his practice; ſo that he was ſought for by perſons of the higheſt rank, and eſpecially by the princes of the houſe of Anſpach. He was appointed phyſician to the marquis of Anſpach in 1695, and accompanied him in a journey to Italy; and after the death of this patron, in 1703, he found the ſame kindneſs from his ſucceſſor, who preſſed him earneſtly to remove to Anſpach. But it was not until the year 1713, that Hoffmann could be prevailed upon to quit his academic duties: in that year he fixed himſelf at Anſpach, where he died in October, 1727, at the age of ſeventy-four. He left ſeveral works of repute: *viz.* two diſſertations on anatomy and phyſiology; one on what has ſince been called morbid anatomy, entitled "Diſquiſitio corporis humani Anatomico-Pathologica;" ibid. 1713. "Acta Laboratorii chemici Altdorffini," 1719. "Syntagma Pathologico-therapeuticum," 1728, in two vols. 4to. and "Sciagraphia Inſtitutionum Medicarum," a poſthumous publication. He alſo continued his father's "Floræ Altdorffinæ." See Hutchinſon Biographia Medica. Eloy. Dict. Hiſt. de la Médecine.

Hoffmann, Frederic, the moſt eminent phyſician of his name, was born at Halle, in Saxony, on the 19th of February, 1660. He received his early education in his native town, and had made great progreſs in philoſophy and the mathematics, when, at the age of fifteen, he loſt his father and mother during the prevalence of an epidemic diſeaſe. In 1679 he commenced the ſtudy of medicine at Jena, and in the following year attended the chemical lectures of Gaſpar Cramer, at Erfurth; and, on his return to Jena, received the degree of M. D. in February 1681. In the year 1682 he publiſhed an excellent tract "De Cinnabari Antimonii," which gained him great applauſe, and a crowd of pupils to a courſe of chemical lectures, which he delivered there. At the concluſion of this courſe, he was induced to viſit Minden, in Weſtphalia, on the invitation of a relation, and practiſed his profeſſion there for two years with conſiderable ſucceſs. He then travelled into Holland and thence to England, where he was received with diſtinction by men of ſcience, and particularly by Paul Herman, the botaniſt in the former, and Robert Boyle in the latter. On his return to Minden, in 1685, he was made phyſician to the garriſon there, and in the following year was honoured by Frederic William, elector of Brandenburg, with the appointments of phyſician to his own perſon, and to the whole principality of Minden. Neverthelefs he quitted that city in 1688, in conſequence of an invitation, which his riſing reputation procured him, to ſettle at Halberſtadt, in Lower Saxony, as public phyſician. His fame continued to extend, and he publiſhed a treatiſe "De inſufficientia acidi et viſcidi," by which he overthrew the ſyſtem of Cornelius Bontekœ. In 1689 he married the only daughter of Andrew Herſtel, an eminent apothecary, with whom he had lived forty-eight years in perfect union, when ſhe died. About this time, Frederic III., afterwards firſt king of Pruſſia, founded the univerſity of Halle; and in 1693 Hoffmann was appointed primary profeſſor of medicine, and compoſed the ſtatutes of that inſtitution. As a colleague in the medical profeſſorſhip he recommended the celebrated Stahl, who proved the great rival of his fame as a teacher. He was moſt active in the exerciſe of his profeſſional duties; and while he introduced a ſpirit of free and enlarged inquiry into the new univerſity, he extended its fame and elevated its character, by the eloquence and profound information diſplayed in his lectures. At the ſame time his own reputation was ſpread abroad by the learned works which he publiſhed, and procured him admiſſion into the ſcientific ſocieties at Berlin, Peterſburgh, and London, as well as the honour of being conſulted by perſons of the higheſt rank. He was called upon to viſit many of the German courts in his capacity of phyſician, and received honours from ſeveral princes; from whom ſome ſay that he received ample remuneration in proportion to the rank of his patients; while others have aſſerted that he took no fees, but contented himſelf with his ſtipends. Haller aſſerts that he acquired great wealth by various chemical noſtrums which he vended. In 1704 he accompanied ſome of the Pruſſian miniſters to the Caroline warm baths in Bohemia, on which occaſion he examined their nature, and publiſhed a diſſertation concerning them. On ſubſequent viſits, he became acquainted with the Sedlitz purging waters, which he firſt introduced to public notice, having publiſhed a treatiſe on them in 1717: and he afterwards extended his enquiries to the other mineral waters of Germany. Among other illuſtrious patients, who applied to him in theſe excurſions, were the emperor Charles VI. and his empreſs. In the year 1708, he was called to Berlin to take care of the declining health of Frederic, and was honoured with the titles of archiater and aulic counſellor, together with a liberal ſalary. After three years reſidence at this court he returned to Halle, and gladly reſumed his academical functions. He continued alſo to labour in the compoſition of his writings; and in 1718, at the age of 60, he began the publication of his "Medicina Rationalis Syſtematica," which was received with great applauſe by the faculty in various parts of Europe, and the completion of which occupied him nearly twenty years. He likewiſe publiſhed two volumes of "Conſultations," in which he diſtributed into three "centuries," the moſt remarkable caſes which had occurred to him; and alſo "Obſervationum Phyſico-Chemicarum ſelectionem Libri tres," 1722. In 1727 he attended the prince of Schwartzemburg through a dangerous diſeaſe; in recompence for which his noble patient created him count palatine. He quitted Halle in 1734, in order to pay a ſhort viſit to his daughter and ſon-in-law at Berlin, which, however, was made longer than he intended; for he was detained five months by the king of

Pruſſia, Frederic William, in order to attend him during a dangerous illneſs, which had attacked him in his camp on the Rhine. During this attendance Hoffmann is ſaid, by dignified remonſtrance, to have ſecured himſelf againſt the brutal rudeneſs with which the monarch treated his other phyſicians ; and he was ultimately treated with great honour, being elevated to the rank of privy counſellor, and preſented with a portrait of the king, ſet in diamonds. His majeſty likewiſe procured the portrait of Hoffmann, from the ſame painter, which was placed in the palace of Monbijou : and to Hoffmann's only ſon he preſented a profeſſorſhip of medicine in the univerſity of Halle, with the title of his conſulting phyſician. Hoffmann declined a preſſing invitation to ſettle at Berlin, on account of his advanced age, and returned to Halle in April 1735. The illneſs and death of his beloved wife, in 1737, turned his thoughts to the conſolations of religion, and he drew up in Latin a ſummary of Chriſtian doctrine, which, at the king's deſire, was tranſlated into German. He continued to perform his academical duties until the year 1742, when he died in the month of November, aged eighty-two.

Frederick Hoffmann was an induſtrious and copious writer. Haller has occupied thirty-eight quarto pages in the enumeration of his works in detail. The principal of theſe were collected, during the life of the author, by two Geneveſe bookſellers, and publiſhed with his approbation, and with a preface from his pen, in 1740, in ſix volumes folio. It was re-printed by the ſame bookſellers, the frères de Tournes, in 1748 ; and in the following year, having raked together every thing which his pen had touched, they publiſhed a ſupplement in three additional volumes folio, which was alſo re-printed in 1753-4. The writings of Hoffmann contain a great maſs of practical matter of conſiderable value, partly compiled from preceding writers, and partly the reſult of his own obſervation ; but they contain alſo many trifling remarks, and not a little hypothetical conjecture, which was indeed a common fault of the times ; and in the detail there is conſiderable prolixity and repetition. As a theoriſt his ſuggeſtions were of great value, and contributed to introduce that revolution in the ſcience of pathology, which ſubſequent obſervation has extended and confirmed. His doctrine of *atony* and *ſpaſm* in the living ſolid, by which he referred all internal diſorders to ſome " preternatural affection of the nervous ſyſtem," rather than to the morbid derangements and qualities of the fluids, firſt turned the attention of phyſicians from the mere mechanical and chemical operations of the animal body to thoſe of the primary moving powers of the living ſyſtem. To Hoffmann Dr. Cullen acknowledges the obligations we are under for having firſt put us into the proper train of inveſtigation ; although he himſelf did not apply his fundamental doctrine ſo extenſively as he might have done, and every where mixed with it a humoral pathology as incorrect and hypothetical as any other. Hoffmann purſued the ſtudy of practical chemiſtry with conſiderable ardour, and improved the department of pharmacy, by the addition of ſome mineral preparations ; but, on the whole, and eſpecially in his latter years, his practice was cautious and even inert, and he truſted much to vegetable ſimples. See Eloy. Dict. Hiſt. Vit. Fr. Hoffmanni à J. H. Schultze, and his Epiſt. to the king of Pruſſia, both prefixed to the Geneva edition of his works. Gen. Biography. Preface to Cullen's Firſt Lines.

HOFFMANNIA, in *Botany*, ſo called by Swartz, in honour of ſeveral able German botaniſts of the name of Hoffmann. Mauritius, and his ſon John George Henry, were ſucceſſively profeſſors at Altdorf. The former died in 1698, the latter in 1727. They publiſhed catalogues of the Altdorf garden, and of the wild plants of that neighbourhood. Frederick Hoffmann, profeſſor at Halle, who died in 1742, aged 82, publiſhed various medico-botanical diſſertations on Sugar, Cloves, Balſam of Peru, Yarrow, Manna, &c. and in one of them recommended the leaves of *Veronica officinalis*, as preferable to the tea of China ; a doctrine which has made as little progreſs in the world, as ſome others better founded in truth. Profeſſor George Francis Hoffmann of Göttingen is particularly diſtinguiſhed by his deſcriptive work on *Salices*, and his ſplendid *Plantæ Lichenoſæ*, both in folio ; and has alſo favoured the world with ſeveral other botanical writings. He was born in 1760, and is one of the moſt eminent cryptogamic botaniſts of the preſent day.—Swartz. Prodr. 2. Ind. Occ. v. 1. 241. t. 5. Schreb. 788. Willd. Sp. Pl. v. 1. 613. Mart. Mill. Dict. v. 2. Claſs and order, *Tetrandria Monogynia*. Nat. Ord. *Stellatæ*, Linn. *Rubiaceæ*, Juſſ.

Gen. Ch. *Cal.* Perianth ſuperior, ſmall, of one leaf, with four erect acute teeth. *Cor.* of one petal, ſalver-ſhaped ; tube extremely ſhort ; limb in four deep, lanceolate, ſpreading ſegments. *Stam.* Filaments none ; anthers four, attached to the baſe of the tube, linear awl-ſhaped, erect, preſſed cloſe to the ſtyle. *Piſt.* Germen inferior, oblong, quadrangular ; ſtyle awl-ſhaped, the length of the ſtamens ; ſtigma obtuſe, downy, ſcarcely notched. *Peric.* Capſule oblong, bluntly quadrangular, pulpy, crowned with the calyx, of two cells and two valves. *Seeds* numerous, roundiſh, affixed to an ovate diſtinct receptacle in each cell.

Eſſ. Ch. Calyx four-toothed. Corolla ſalver-ſhaped, in four deep ſegments. Filaments none ; capſule pulpy, with two cells, two valves, and many ſeeds affixed to diſtinct ovate receptacles.

Obſ. The receptacles, as deſcribed by Dr. Swartz, evince the propriety of terming this fruit a pulpy capſule, and not a berry, the latter properly requiring the ſeeds to be imbedded in pulp, without any diſtinct receptacles, much leſs valves.

1. H. *pedunculata.* Sw. Ind. Occ. v. 1. 242. The only ſpecies. Found by Swartz in rather moiſt ſhady places on the high mountains of Jamaica. The *ſtem* is herbaceous, two or three feet long, branched, ſmooth, rather ſhrubby at the baſe ; its branches round and hairy. *Leaves* ſtalked, oppoſite, croſſing each other in pairs, ovate, pointed, entire ; wedge-ſhaped at the baſe ; above ribbed, ſhining, rough with elevated points ; veiny, pale and hairy beneath. *Stipulas* oppoſite, very ſhort, acute, thick and hairy, ſtanding between the *footſtalks*. *Flower-ſtalks* axillary, oppoſite, ſolitary, longer than the footſtalks, many-flowered, lax, hairy. *Calyx* coloured. *Corolla* yellowiſh at the points, ſtriated with red at the bottoms of the ſegments. *Anthers* yellow, cohering as in the nightſhade, *Solanum*. *Berry* ſcarlet when ripe.

HOFFMARKT, in *Geography*, a town of Auſtria, ſituated on the river March ; 26 miles E.N.E. of Vienna.

Hoffmarkt, *Furth*, a town of Germany, in the margraviate of Anſpach, on the Rednitz, peopled with mechanics and artiſans ; ſuch eſpecially as cannot obtain the freedom of Nuremberg. The Jews are numerous, and have a ſchool and printing-houſe ; five miles N.W. of Nuremberg.

HOFFWA, a town of Sweden, in Weſt Gothland ; 80 miles N. E. of Uddevalla.

HOFHAIMER, Paul, in *Biography*, publiſhed at Nuremberg, in 1539, a tract in Latin entitled " Harmoniæ Poeticæ," the ſecond part of which contains a notation of all the rhythms and meaſures of the feet of Latin verſe. This tract is among Anthony Wood's printed books, in the Aſhmol. Muſeum. Paul Hofhaimer is celebrated by Luſcinius not only as an admirable performer on the organ, on whom the emperor Maximilian conferred great honours, but as a compoſer of the very firſt claſs, whoſe productions, which were not only learned and correct, but florid and pleaſing, had remained unrivalled during thirty years.

HOFMAN, Euchorus, publiſhed, in 1582, at Stralſund, where he was corrector of the public ſchool, a treatiſe on the tones or modes of the church, "Doctrina de Tonis, ſeu Modis Muſicis." This author, who is a follower of Glarianus, pretends that "the ſcience of the modes, or *canto fermo*, which is the moſt excellent part of muſic, is but little underſtood by the moderns; but he draws his information from muſicians of the higheſt authority."

HOFMANSTORP, in *Geography*, a town of Sweden, in Smaland; 12 miles S.E. of Wexio.

HOG, a town of Sweden, in the province of Helſingland. —Alſo, a ſmall iſland in Pamlico ſound, near the coaſt of North Carolina. N. lat. 34° 56′. W. long. 76° 36′.—Alſo, a ſmall iſland in the Atlantic, near the coaſt of Virginia. N. lat. 37° 30′. W. long. 75° 42′.—Alſo, an iſland on the E. ſide of lake Champlain, in Franklin county, Vermont; nine miles long, and generally about three miles broad.—Alſo, an iſland in Narraganſet bay, Rhode iſland, about two miles in circumference; two miles from Briſtol.—Alſo, an iſland below Peach iſland, in Upper Canada, ſituated in the ſtrait of Detroit, where it opens into lake St. Clair; containing about 300 acres of land fit for tillage, and a large quantity of marſh or meadow land. It has ſome wood; the land is low, but fit for paſturage, well improved, and contains in all about 1700 ſtatute acres.—Alſo, one of the ſmaller Shetland iſlands, near the E. coaſt of Mainland. N. lat. 60° 30′. W. long. 1° 12′.—Alſo, a ſmall iſland in the Eaſt Indian ſea, near the E. coaſt of Palawan. N. lat. 10° 18′. E. long. 119° 36′.—Alſo, an iſland in the Eaſt Indian ſea, 40 miles long and ſix broad; 60 miles W. of Sumatra. N. lat. 2° 30′. E. long. 95° 50′.—Alſo, an iſland in the Eaſt Indian ſea, about 20 miles in circumference. S. lat. 7° 5′. E. long. 114° 55′.—Alſo, an iſland in the Eaſt Indian ſea, 15 miles long, and ſix broad, near the W. coaſt of Saleyer. S. lat. 6° 12′. E. long. 120° 15′.

Hog, *Cape*, a mountainous headland on the coaſt of Syria, forming the S. point of the bay of Alexandretta, anciently called the "Rhoſius." N. lat. 36° 27′. E. long. 38° 8′.

Hog *Iſlands*, a cluſter of ſmall iſlands ſituated near the coaſt of the county of Kerry, between Ballinaſkelig's bay, and the entrance of Kenmare river, within three or four miles of Hog's Head. There is alſo a ſingle iſland called Hog iſland in the river Shannon, near its mouth.

Hog's *Head*, a cape of Ireland, on the S.W. coaſt, forming the eaſtern boundary of Ballinaſkelig bay, in the county of Kerry. N. lat. 51° 44′. W. long. 10° 8′.

Hog, in the *Linnæan Syſtem of Zoology*. See Sus.

The common hog, or *ſus ſcrofa* of Linnæus, is covered with briſtles. In a wild ſtate it is of a dark brinded colour, and under the briſtles there is a ſoft curled hair; the ears are ſhort and a little rounded. In its tame ſtate, the ears are long, ſharp-pointed, and flouching; the colour is generally white, ſometimes mingled with other colours. The hog, in its wild ſtate, is found in moſt parts of Europe, except the Britiſh iſles and the countries north of the Baltic; in Aſia, from Syria to the borders of the lake Baikal; in Africa, on the coaſt of Barbary; and in the foreſts of South America.

Tame hogs are found univerſally, except in the frigid zone and Kamtſchatka, and ſuch places where the cold is very ſevere. The Chineſe hog is only a variety of the common hog; its belly hangs almoſt to the ground, its legs are ſhort, its tail reaches to the heels, and the body is generally bare: it is a much cleaner animal than ours. Hogs are ſtupid and voracious animals; inſomuch that they will eat their own offspring, and devour even infants; but it is obſerved, that the hog is not indiſcriminate in the choice of its food; for it has been found to eat 72 ſpecies of vegetables, and to reject 171. In America it clears the country of rattle-ſnakes, which it eats with ſafety. Hogs cannot bear exceſſive cold, and are very reſtleſs in high winds.

There are few animals that are uſeful in a greater variety of ways than hogs. They are extremely prolific; their fleſh is agreeable and wholeſome food to thoſe who uſe much exerciſe; and as it takes ſalt better than any other kind, it is of great importance to a commercial nation. Hogs furniſh *brawn*, and *lard*, and *briſtles*. (See each article.) In Minorca, the aſs and the hog are yoked together to plough the land; and the hog has been applied to the ſame uſe in our own iſland, *viz.* in that part of Murray which lies between the Spey and Elgin. Pennant. See Boar.

Theſe animals are very profitable to the owner in different points of points of view, eſpecially on ſome particular kinds of farms, as thoſe of the arable and dairy deſcriptions. Indeed, on moſt ſorts, a few animals of this kind may be kept to great convenience and profit, as preventing the neceſſary waſte of different refuſe materials of the food kind, which can only be converted to ſuch uſes. Theſe animals are alſo capable of being kept to great profit in different deſcriptions of large manufactories where the conſumption of grain is extenſive; as in thoſe of brewing, diſtilling, and the making of ſtarch, &c. The breed of hogs ſhould be conſtantly well ſuited to the nature of the farm, and the extent of the keep which is capable of being provided for them, otherwiſe there may often be conſiderable loſs ſuſtained. The cloſe, compact, ſhort-legged breeds, which have much diſpoſition to take on fleſh, are, in general, to be preferred. But where the keep is good and abundant, breeds which attain a much larger ſize may ſometimes be more beneficial and proper. See *Live* Stock and Swine.

Hogs are apt to dig up the ground and to break fences; but this may be prevented, by putting rings in their noſes, and yokes about their necks. Leiceſterſhire, Northamptonſhire, and Hampſhire, are famous for theſe animals, which ſeems owing to their being clayey countries, and that more peas and beans are ſown there than in other places. The wild kind never grow ſo large as the tame, but they are much better taſted. The keepers of hogs ſhould always chuſe ſuch boars for the purpoſe of breeding as are long-bodied, and have deep bellies and ſides, ſhort noſes, thick thighs, ſhort legs, high claws, a thick neck, and a thin chine, well ſet with large briſtles. It is not proper to keep too many breeding ſows; for they will produce ſo many young at a time, and this three times a year, that they will not find food enough. They uſually bring thirteen or fourteen young ones in a litter, ſometimes more, but they can bring up no more than they have teats to ſuckle. Young ſhoots, as they are called, that is, ſwine of three quarters of a year old, are beſt for pork, and thoſe of a year and a half for bacon. The male pigs that are reared ſhould be gelt, and the ſows ſpayed; and for this purpoſe, thoſe which are pigged in the ſpring are the beſt. Moiſt and ſedgy grounds are good for ſwine, for they eat the roots of many of the plants that grow there; and the fruit of the beech, cheſnut, and hedge-buſhes, fatten them well, and make their fleſh much better taſted than when bred entirely in the ſtye.

Mr. Young obſerves, that hogs may be kept in ſummer, with great advantage to the farmer, in clover fields; and that lucern is ſuperior to clover for this purpoſe, and that ſaint-foin is very good; but that burnet is very bad. In winter they may be well maintained with carrots, parſnips, beets, and potatoes. The dairy ſhould be appropriated to rearing pigs and feeding ſows that have young. It appears, from other experiments of this writer on the fattening quality of ſeveral ſorts of food for hogs, that pollard alone is a cheaper food than peas alone; that boiled carrots are much the moſt profitable; that buck-wheat is more profitable than peas; that ſeveral kinds of food mixed are better than any given alone; that the meal of any one, or various kinds of grain, is better and more profitable than the whole grain mixed or alone; and that peas and barley are much ſweeter food than beans. The keeping of hogs in any city or market-town is indictable as a public nuiſance.

Hog *Ciſtern*, a contrivance prepared for the purpoſe of containing and preſerving the food employed in the keeping of hogs or ſwine. This ſort of baſon, or ciſtern, ſhould be formed in ſuch a ſituation as may be convenient for the kitchen, dairy, and hog-yard, being conſtructed in ſuch a manner as that there may be no loſs ſuſtained in its leaking and letting out the more liquid contents. Into this tub or ciſtern every thing ſhould be collected from the houſe, and other places, in order to be formed into waſh, or ſoup, for the ſtore pigs, and thereby no loſs be incurred. Where large ſtocks of hogs are kept, it is a matter of great convenience and utility to have different tubs or ciſterns of this nature, that the food may be properly prepared, and in ſufficient quantities for conſtant uſe, as by this means the food admits of being more ſuitably mixed and blended together.

The proper conſtruction of theſe ſorts of receptacles is a matter of very conſiderable importance; in Norfolk they are chiefly built with bricks and terrace, which is an expenſive method of forming them. Wooden veſſels are not by any means either durable or commodious, and thoſe of lead dangerous. Bricks laid in clay are ſuggeſted as perfectly water-tight, eſpecially when backed by a coat of the ſame ſubſtance. In forming theſe ciſterns, pits or cavities of ſuitable dimenſions ſhould be dug out, as of five or ſix feet in length, and four or five in breadth, having the depths of about five feet. The whole of the bottom of the cavity ſhould then be well bedded with good clay, well moiſtened and rammed down, ſmoothing the ſurface over neatly with a trowel. Upon this flooring three courſes of bricks, laid in mortar made with the beſt clay, ſhould be placed in ſuch a way as that the joints of one courſe may fall in the middle of the bricks of the courſe under it, the whole being laid lengthways, and not croſſed in the uſual method. The ſides muſt be carried up half a brick thick, which is a brick in width, being laid in the mortar of good clay; the vacancy left between the brick-work, and the ſides of the cavities being firmly rammed with moiſt clay, ſo as to combine the bricks as much as poſſible with the clay and the ſides of the pits, forming them into a ſort of ſolid body. The brick and clay-work ſhould be carried up equally together, beating back again ſuch bricks as may have been forced forward in the ramming of the clay, leaving the ſurface in the ciſtern quite even and regular. As, when brought up level with the ſurface of the ground, ciſterns of this nature, of five feet and a half by four, uſually meaſure about three feet in length, and two and a half in depth, the ſeam or layer of clay on the bottoms and ſides muſt be about four inches in thickneſs. By way of affording a good covering to ciſterns of this kind above the ground, a ſort of ſlanting ſhed ſhould be conſtructed over them by building ſlight brick-walls on each ſide of them to the height of three or more feet, with a gable raiſed at one end, the other being left open as a door, and the top cloſed by a roof and tiles. This method of covering ſuch reſervoirs is far ſuperior to thoſe merely having flaps, or other ſimilar contrivances.

Hog's *Fennel*, in *Botany*. See PEUCEDANUM.

Hog, *Hedge*. See ERINACEUS.

Hog, *Sea Hedge*. See ECHINODERMA, CENTRONIA, and *Sea* URCHIN.

Hog, *Hairs of*, in *Agriculture*, the ſtiff briſtly ſort of hair that is taken off from the body of hogs when they are killed, by means of ſcalding and ſcraping. This is a ſubſtance, where it can be collected in ſufficient quantity, that may be made uſe of with advantage as a manure. It is capable of being occaſionally purchaſed in the London markets at about nine or ten ſhillings the quarter, which is a ten buſhel ſack ſtuffed quite full; and is applied to the land in ſuch a way, as to be turned in juſt before the crops are ſown. In this method it is found to anſwer perfectly in ſoils of the more light deſcription. Seal hair has likewiſe been found capable of being employed in the ſame mode with equal ſucceſs.

Hog *Manure*, the name of that ſort which is produced by hogs in the ſties, yards, and other places where they are kept and confined. This is found, by experience, to be a very powerful and efficacious ſort of material, being conſidered by ſome as nearly equal to that of the horſe. It has, however, been ſuggeſted as an objection to it by ſome, that weeds are more liable to riſe after the application of it, than that of ſome other kinds of manure.

The farmers who uſe the dung of hogs for their lands, generally take care to ſave it by well paving the ſties, and increaſe the quantity by throwing in bean-ſtalks, ſtubble, and many other things of a like kind; and, by good management of this kind, many farmers have procured fifty or ſixty load of excellent manure a-year out of a ſmall ſtye. The very beſt way of uſing this dung is to mix it with horſe-dung; and, for this reaſon, it is beſt to have the ſtye near the ſtable, that the two cleanſings may be mixed in one heap, and uſed together.

They have, in many parts of Staffordſhire, a poor, light, ſhallow land, on which they ſow a kind of white pea. The land is neither able to bear this, nor any thing elſe, to their advantage, for reaping. But when the peas are ripe, they turn in as many hogs as the quantity of peas will fatten, ſuffering them to live at large, and remain there day and night; and, in conſequence of this, the land will produce good crops of hay for ſeveral years afterwards, or, if too poor for that, it will, at the worſt, raiſe graſs enough to make it a good paſture-ground. See DUNG and MANURE.

Hog-*plum*, in *Botany*. See SPONDIAS.

Hog-*ſheep*, a term often applied to the male or wedder of one year old, as from the time of weaning to that of its being firſt ſhorn.

Hog-*ſteer*, among *Hunters*, a wild boar of three years old. See BOAR.

Hog-*ſty*, the name of a houſe or building conſtructed for the purpoſe of confining and keeping different kinds of hogs and ſwine. Much, eſpecially in the ſaving of labour, and the making of manure, as well as in the food and keeping of the animals, depends upon the ſties being formed in a convenient manner. They are uſually built in a very plain and ſimple method, the chief objects being conſidered thoſe of warm dry ſituations for the animals to lie in, with ſmall areas or yards before them, and proper troughs fitted up for holding their food. They are moſt commonly conſtructed with lean-to or ſhed-roofs, and have but ſeldom more than ſix or ſeven feet width, with height in the ſame proportion. In order to have them as convenient as poſſible, they ſhould be at no very great diſtance from the houſe and offices, being well placed for the kitchen and dairy, but as little connected with the other out-buildings as may be. Some have ſuggeſted the great propriety and advantage, in particular caſes, of having them connected in ſuch a manner with the ſcullery, as that the whole of the refuſe articles from it may be readily conveyed to them by means of pipes or other ſimilar contrivances.

Where they are at a diſtance they ſhould conſtantly be ſo ſituated as that the ſervants need not have occaſion to enter the farm yards in the buſineſs of feeding them.

Although it be the common notion that hogs are naturally filthy in their habits, there are probably very few domeſtic animals that are more pleaſed when they have clean comfortable beds, and certainly not any on which cleanlineſs has a more evident effect, ſo far as thriving, feeding, and fattening are concerned. With the view of keeping them perfectly dry at all periods, a ſlight, but ſufficient degree of inclination or ſlope outwards ſhould conſtantly be given to the floors of the ſties as well as thoſe of the areas or yards with which they are connected, and proper drains be conſtructed for conveying away any moiſture that may be preſent in them. The outſide yards ſhould alſo be a little raiſed above the ſurface of the ground, and the ſties ſomewhat elevated above the yards. It is neceſſary alſo that there ſhould be a number of diviſions, in order to keep the different kinds of hog ſtock ſeparate, as there ſhould never be too great a number kept together, it being found by experience that they thrive and fatten better where the numbers are ſmall, and as nearly as poſſible ſimilar in the ſizes. Suitable diviſions are conſequently to be formed for female hogs when with the boar; others for breeding ſwine, as well as for their farrowing in; and ſtill others for properly weaning the young pigs in, for keeping the ſtore pig ſtock in, and for fattening the hogs of proper ages in. Where the nature of the ſituations will admit of it, the areas or yards ſhould be pretty extenſive. And in caſes where it can be done, it is of vaſt advantage to have water conveyed through them, as it ſerves not only to keep them clean with greater eaſe and facility, but anſwers a variety of other beneficial intentions.

It has been ſuggeſted by a writer on rural economy, that all pig-ſties ſhould be provided with rubbing poſts. "Having occaſion to ſhift two hogs out of a ſty without one into another with a poſt accidentally put up to ſupport the roof, he had a full opportunity of obſerving its uſe. The animals, when they went in, were dirty, with broken ragged coats, and dull heavy countenances. In a few days they cleared away their coats, cleaned their ſkins, and became ſleeky haired: the enjoyments of the poſt were diſcernible, even in their looks, in their livelineſs, and in their apparant contentment. It is not probable that any animal can thrive while afflicted with pain or uneaſineſs. Graziers ſuffer ſingle trees to grow, or put up dead poſts in the ground, for their cattle to rub themſelves againſt; yet it is probable a rubbing poſt has never been placed intentionally in a ſty; though perhaps, for a two-fold reaſon, rubbing is moſt requiſite to ſwine."

In the conſtruction of hog-ſties, it is difficult to point out any plan that can be generally had recourſe to, as they muſt conſtantly depend upon the nature of the place and various other circumſtances of a local kind. It has, however, been lately ſuggeſted, that pig-ſties that are of conſiderable extent, ſhould conſtantly be in the form of a circle, or they muſt ſuſtain great loſs in point of convenience. In which caſe the centre ſhould contain the boiling or ſteaming houſe, with a granary for corn, meal, bran, and other ſimilar articles; having a range of ciſterns in diviſions around it, for the reception of the matters from the copper or ſteaming apparatus, as well as by pipes from the kitchen, dairy, and other places. Around theſe there ſhould be a path, and beyond it the fence, which may be a wall or pailing; in which the troughs with hanging lids ſhould be fixed, for ſupplying the food directly from the ciſterns on one ſide, and for the hogs feeding at on the other: next to this there ſhould be a range of yards, and another of low ſheds beyond it, and, laſtly, the receptacle for the dung. The pies or potatoe ſtores ſhould at one end point nearly to the entrance, and the water ſhould be raiſed to the coppers and ciſterns at once by means of a proper pump; there being a trough or ſome other conveyance from the dairy to the ciſterns for the milk, whey, and other liquid matters. This ſort of arrangement, it is ſuppoſed, will be extremely convenient and beneficial, while, at the ſame time, the expence need not be heavy. The attaching of a certain extent of graſs land, or that of ſown graſſes, in proper diviſions, into which the hogs may be capable of being turned as it may be found neceſſary, is, it is hinted, a matter of vaſt utility, where the nature of the ſituation will admit of its being done. Where there is not a proper and conveniently formed pig apparatus, little idea can be had of its advantage in the making of manure. Yet this alone, it is conceived, is an object that would juſtify any good farmer in going to a certain expence in attaining ſo profitable a portion of what ſhould conſtitute his farm-yard ſyſtem. It is ſtated as lamentable to ſee in nine-tenths of the farmeries of the kingdom, ſo many parts of the proper piggery ſcattered and unconnected in ſuch a way as to prevent convenience, multiply labour, and retard the forming of plentiful ſupplies of valuable manure. The building of a hoggery, ſomewhat though not exactly upon this principle, was found to coſt, including the boiling houſe, copper, pond, ciſterns, ſhed, pailing, paving, and troughs, about 78*l.*, independent of the timber. By means of a yard of this deſcription, one man will be capable of managing three times as many hogs as would otherwiſe be the caſe. And where they are properly and completely littered, the quantity of excellent manure that is formed is very aſtoniſhing. The extent of 98 loads of very rich dung compoſt, valued on the ſpot at five ſhillings the load, has been found to be made by the number of about 80 or 90 fattening hogs, or a clear profit of 15 or 16*l.*, derived ſolely from that article; and it would be double that, if the littering was performed in a complete manner. Theſe ſtatements fully prove the prodigious importance of poſſeſſing ſuch conveniences in the fattening of great numbers of hogs, in the view of raiſing manure.

Suppoſing the whole of the expence, including every thing, in one of theſe ſties, to riſe to 100*l.* and the intereſt to be five pounds per annum; it is aſked, what compariſon there can be between the annual expence of five pounds, and the prodigious utility of having the power of conſtantly fattening with ſcarcely any expence of labour, any number of hogs that may be required? By means of ſuch conveniences the whole of the peas, beans, barley, buck-wheat, potatoes, parſnips, carrots, and other ſimilar ſorts of food that are capable, or can be produced on a farm, may be converted to the purpoſe of rearing, feeding, or fattening of hogs; by which the farmer has the means of improving his ground in the cheapeſt manner, and to the fulleſt extent.

At preſent, the expence of ſuch ſheds and yards would be nearly double the above ſum; and, where erected upon the moſt correct plan, ſtill conſiderably more. The general principle ſhould, however, be followed in ſties of much ſmaller dimenſions. In many caſes and circumſtances, other plans and forms may, however, be followed with great propriety and advantage, being contrived ſo as to ſuit the local nature of the different ſituations

HOG-*trough*, a kind of box or other contrivance conſtructed for the purpoſe of containing the food of hogs until it be conſumed. There are various kinds of troughs of this nature, which are formed of different ſorts of materials under different circumſtances; but thoſe of wood and ſtone are by much the moſt uſual. From the circumſtance of hogs being liable to ſpill and waſte a conſiderable portion of their food by getting their feet into it, Mr. Bateſon has been induced to attempt the prevention of it, by having a rail or covering made to ſlope from the back to the fore part of the trough, which may be formed of any ſort of thin deal, juſt ſufficient room being left to admit the heads of the animals. Diviſions are likewiſe made croſſways of the troughs, in proportion to the number of the hogs, in order to prevent the ſtrongeſt from driving away ſuch as are weak. But theſe diviſions are not neceſſary to extend to the bottom of the troughs; they ſhould, however, riſe a little higher than the top, and are capable of being formed of portions of boards, which are about eight or ten inches in breadth. But another way of preventing them from waſting their food, it is conceived, would be to have ſhallow wooden troughs placed about a foot from the ground, having large deep troughs above them with open bottoms. The food is depoſited in the large upper troughs, but at the ſame time no more is capable of paſſing down, than what reſts in the bottoms of the ſhallow troughs; conſequently, when that is conſumed, a freſh ſupply will continually take place from the large upper troughs.

However, for food of the more liquid kind, ſuch as milk, whey, and others of a ſimilar kind, there may, it is ſuppoſed, be a ſtone trough below, and ſpars or holes in the bottom of the ſhallow trough, to let the fluid matters paſs through. Theſe ſorts of troughs are capable of being made to ſerve two diviſions of the ſty at the ſame time, by having them fixed up between them. Where water can be conducted through the ſty in a ſmall ſtream, by means of an open ſort of ſpout, ſo that it may conveniently ſupply the animals, it will be found of very great advantage.

HOG-*weed*, in *Botany*. See BOERHAVIA.

HOG-*weed*, a name frequently applied provincially to knot-graſs.

HOG, on board of a *Ship*, is a ſort of flat ſcrubbing broom, formed by incloſing a number of ſhort twigs of birch or ſuch wood, between two pieces of plank faſtened together, and cutting off the ends of the twigs, and ſerving to ſcrape the filth from a ſhip's bottom, under water, particularly in the act of boot-topping. For this purpoſe they fit to this broom a long ſtaff with two ropes; one of which is uſed to thruſt the hog under the ſhip's bottom, and the other to guide and pull it up again, cloſe to the planks. This buſineſs is commonly performed in the ſhip's boat, which is confined as cloſe as poſſible to the veſſel's ſide during the operation, and ſhifted from one part of the ſide to another, till the whole is completed. Marine Dict.

HOGS' *Bones, Petrified*, in *Natural Hiſtory*. Writers on extraneous foſſils have mentioned but very few bones or teeth which they refer to the genus ſus or hog, and have preſerved little which is preciſe enough to entitle them to this claſſification. M. G. A. Cuvier, who gives a memoir on this ſubject, in the 14th vol. of the "Annales du Muſéum," of which a tranſlation may be ſeen in the Phil. Mag. vol. 35, p. 219, conſiders all the foſſil remains which can ſafely be referred to the genus ſus (whoſe characters, applicable to this enquiry, he gives) to belong to the peats and moſt modern of the alluvia of low grounds, or to be peat or recent foſſils.

HOGARTH, WILLIAM, in *Biography*, one of thoſe few original and extraordinary characters whom it has pleaſed Providence occaſionally to bleſs the world with; to enlighten mankind, and to carry the arts and ſciences neceſſary for their comfort, pleaſure, and improvement, nearer to perfection. It cannot, indeed, be truly ſaid of Hogarth, that he improved the practice of the arts of painting and engraving which he profeſſed; but he merited the praiſe of having more powerfully exhibited their moral utility than any of his predeceſſors; and that in a new and till then unthought of mode, more generally felt and underſtood, being adapted to the feelings of all orders of men, as it aroſe from a cloſe obſervance of the actions and expreſſions common to all under the influence of the paſſions. Moved by the impulſe of genius rather than the tuition of man, he travelled in a path unexplored by any before him, and which yet remains cloſed to ſucceeding artiſts. Poſſeſſing, by early practice, the knowledge of the art of engraving, he was happily enabled to diſſeminate, by its means, the ingenious inventions and labours of his mind, in a manner more perfect than thoſe of other painters have been preſented to the world, or than probably ever again will be done, till another painter ſhall be his own engraver. Stimulated by the love of fame, and the deſire of many of his friends, Hogarth, towards the cloſe of his life, compoſed a ſhort hiſtory of himſelf, from whence we ſhall extract the moſt eſſential parts; and preſent our readers with ſome illuſtration of his works, his character, his pretenſions to public favour, and the reception he experienced.

His father's name was Richard, he was a man devoted to literature; but his pen, like that of many other authors, did not enable him to do more for his children than to give them education; and merely, as his ſon obſerved, put them in a way of ſhifting for themſelves. William, of whom we now treat, was born in London, in the pariſh of St. Bartholomew the Great, on the 10th of November, 1697. What will thoſe who hold the non-exiſtence of innate genius for peculiar arts, &c. reply to Hogarth's account of the ſenſations he experienced in his infancy? *viz.* "Having naturally a good eye and fondneſs for drawing, ſhows of all ſorts gave me uncommon pleaſure when a child, and mimickry was remarkable in me."—"An early acceſs to a neighbouring painter drew my attention from play, and I was at every poſſible opportunity employed in making drawings."—"My exerciſes, when at ſchool, were more remarkable for the ornaments which adorned them, than for the exerciſe itſelf; in the former, I ſoon found that blockheads with better memories could much ſurpaſs me, but for the latter I was particularly diſtinguiſhed."—"It was therefore very conformable to my own wiſhes that I was taken from ſchool and ſerved a long apprenticeſhip to a ſilver-plate engraver." This engraver was Mr. Ellis Gamble, of Cranbourn-alley.

"I ſoon found this buſineſs in every reſpect too limited. The paintings of St. Paul's cathedral and Greenwich hoſpital, then going on by ſir James Thornhill, ran in my head; and I determined that ſilver-plate engraving ſhould be followed no longer than neceſſity obliged me to it. Engraving on copper was, at twenty years of age, my utmoſt ambition. To attain this, it was neceſſary that I ſhould learn to draw objects ſomething like nature, inſtead of the monſters of heraldry." Animated by this deſire, he conſidered how he could, by the ſhorteſt way, obtain poſſeſſion of the knowledge he required; and ſpurning the regular mode of academical ſtudy, adopted a plan of his own. "Many reaſons," he ſays, "led me to wiſh that I could find the ſhorter path; fix forms and characters in my mind; and inſtead of copying lines, try and read the language of the art; and, if poſſible, find its grammar, by bringing into one form the various obſervations I had made, and then try how far I could combine them, and apply them to practice.

"Laying it down firſt, as an axiom, that he who could by any means acquire and retain in his memory perfect ideas of the ſubjects he meant to draw, would have as clear a knowledge of the figure as a man, who can write freely, hath of the twenty-four letters of the alphabet, and their infinite combinations (each of theſe being compoſed of lines); and would conſequently be an accurate deſigner:—

"I, therefore, endeavoured to habituate myſelf to the exerciſe of a ſort of technical memory, and by repeating in my own mind the parts of which objects were compoſed, I would by degrees combine and put them down in pencil. Thus, with all the drawbacks which reſulted from the circumſtances in which I was placed, I had one material advantage over my competitors, *viz.* the early habit I thus acquired of retaining in my mind's eye, without coldly copying it on the ſpot, whatever I intended to imitate.

"My pleaſures and my ſtudies thus going on hand in hand, the moſt ſtriking objects that preſented themſelves, either comic or tragic, made the ſtrongeſt impreſſions on my mind; but had I not ſedulouſly practiſed what I had thus acquired, I ſhould very ſoon have loſt the power of performing it."—"Inſtead of burthening the memory with muſty rules, or tiring the eyes with copying dry and damaged pictures, I have ever found ſtudying from nature the ſhorteſt and ſafeſt way of attaining knowledge in my art. By adopting this method, I found a redundancy of matter continually occurring. A choice of compoſition was the next thing to be conſidered, and my conſtitutional idleneſs naturally led me to the uſe of ſuch materials as I had previouſly collected; and to this I was further induced by thinking, that if properly combined, they might be made the moſt uſeful to ſociety in painting, although ſimilar ſubjects had often failed in writing and preaching."

In concurrence, therefore, with this reaſoning, Hogarth ſet about qualifying himſelf for the purſuit of his object immediately upon the expiration of his apprenticeſhip, which was about the year 1718; and began to engrave on copper for the bookſellers. This praiſe-worthy emulation wrought with him as it generally does with thoſe who dare to enter ſo ſelf-denying a courſe of exiſtence. He continued to live in induſtrious indigence for ſome time, whilſt thoſe who had the means of vending his early productions were growing rich by his labours.

It is ſaid of one of thoſe patrons of the youthful artiſt, that he very generouſly offered him half-a-crown a pound for a finiſhed plate; and at another time the ſame perſon offered to Mr. Major two plain pieces of copper for two engraved ones; with the *generous view* that the youth might not lack the means of exerting his ingenuity!!

Feeling the full weight of this kind of treatment, Hogarth reſolved upon publiſhing on his own account. But in this he had to encounter another enemy in the body of printſellers, who, upon his publiſhing his firſt plate of "The Taſte of the Town, or Burlington Gate," (in 1724,) ſoon procured copies of it, and ſold them at half the price; ſo that he was obliged to ſell the plate as their ſhops were the only places of ſale.

"Owing to theſe kinds of circumſtances, till I was near thirty years of age," he ſays, "I could do little more than barely maintain myſelf by engraving."

It is probable, that about the time of publiſhing the abovementioned print he commenced painter; as Mr. John Ireland ſtates, in his account of Hogarth, that he was in poſſeſſion of a ſet of pictures deſigned for the large plates he publiſhed from Butler's Hudibras in 1726. They are but indifferent in the promiſe they hold forth of their author, and are executed in ſomewhat of the ſtyle of Hemſkirk. From this time he was known as a painter, and employed in painting portraits, and ſmall pictures of family converſations, as they are called, or groups of family portraits.

In 1729, he married the only daughter of ſir James Thornhill, without the conſent of the knight her father; who probably regarded him as an inferior artiſt, and felt degraded by the union, till the deſigns for the Harlot's Progreſs were laid before him; ſatisfied then that his daughter had choſen a man of extraordinary merit, though poor in purſe, he became reconciled to the match, and lived till his death in terms of intimacy with his ſon-in-law, and was a conſtant and generous friend to him.

Hogarth proceeded with ſucceſs for ſome time in painting his portraits, "but feeling it a kind of drudgery, and as I could not act like ſome of my brethren, and make it a ſort of manufactory to be carried on by the help of back-ground and drapery painting, it was not ſufficiently profitable to pay the expences of my family. I therefore turned my thoughts to a ſtill more novel mode in painting and engraving modern moral ſubjects, a field not broken up in any country or any age.

"The reaſons which induced me to adopt this mode of deſigning were, that I thought both writers and painters had, in the hiſtorical ſtyle, totally overlooked that intermediate ſpecies of ſubjects which may be placed between the ſublime and groteſque. I therefore choſe to compoſe pictures on canvas, ſimilar to repreſentations on the ſtage: and farther hope that they will be tried by the ſame teſt and criticiſed by the ſame criterion.

"In theſe compoſitions, thoſe ſubjects that will both entertain and improve the mind bid fair to be of the greateſt public utility, and muſt, therefore, be entitled to rank in the higheſt claſs."—"I have endeavoured to treat my ſubject as a dramatic writer; my picture as my ſtage, and men and women my players; who, by means of certain actions and geſtures, are to exhibit *a dumb ſhow.*

"In purſuing my ſtudies, I made all poſſible uſe of the technical memory, which I have before deſcribed, by obſerving, and endeavouring to retain in my mind lineally, ſuch objects as beſt ſuited my purpoſe: ſo that, be where I would, while my eyes were open, I was continually at my ſtudies; and acquiring ſomething uſeful to my profeſſion. A redundancy of matter being by this means acquired, it is natural to ſuppoſe, that I introduced it into my works on every occaſion that I could.

"By this *idle* way of proceeding, I grew ſo profane as to admire nature beyond the firſt productions of art; and acknowledged I ſaw, or fancied, delicacies in the life ſo far ſurpaſſing the utmoſt efforts of imitation, that when I drew the compariſon in my mind, I could not help uttering blaſphemous expreſſions againſt the divinity of Raphael, Correggio, and Michael-Angelo. For this, though my brethren have moſt unmercifully abuſed me, I hope to be forgiven. I confeſs to have frequently ſaid, that I thought the ſtyle of painting which I had adopted, admitting that my powers were not equal to doing it, might, one time or other, come into better hands, and be made more entertaining, and more uſeful, than the eternal blazoning, and tedious repetition, of hackneyed beaten ſubjects, either from the ſcriptures, or the old ridiculous ſtories of heathen gods: as neither the religion of the one or the other requires promoting among Proteſtants, as it formerly did in Greece; and at a later period in Rome."

In language of this nature Hogarth was accuſed of vanity, and of enviouſly endeavouring to under-rate what he was unable to execute. And certainly with much juſtice the remarks appear to have been made; for, previouſly to his adopting the line of conduct in painting, which was ſo ſuitable to his peculiar genius, he attempted ſeveral pictures in the grand hiſtorical ſtyle, and in all failed moſt woefully. It is apparent that he at no time of his life underſtood the object or character of that ſpecies of art, and was, therefore, ill qualified to judge of its value. But probably he was urged to the ſtrong declarations which he indulged in, by ſeeing the ſucceſs of infamous dealers in bad copies, and continually hearing, as all painters are obliged to do, bad originals exalted beyond all bounds, becauſe they are ſuppoſed to be the productions of this or that man of genius; while, in fact, they may be the inferior labours of ſome mongrel imitator. What, however, but the extreme of vanity, could induce a man, ſo ill trained in art, to think of contending with Pouſſin and Correggio in hiſtory, and with Vandyke in portrait. He aſſerted himſelf equal to either in their way, and in both proved himſelf groſsly defective. In his own line and manner, and in that alone, diſtinct from every one, he was ſuper-excellent; conceiving his ſubjects with moſt conſummate intelligence, and executing them with appropriate character and ſtyle.

After ſome time he felt the effect of the remarks of his adverſaries (though he never acknowledged his incapacity), and almoſt entirely abandoned portraiture and ſerious hiſtory; and wiſely adhered to his judicious choice of ſubject and manner; for the adoption of which he felt ſuch powerful reaſons as are mentioned above.

He had, however, in the interim, favoured the world with various productions of that kind, which were then, and ſtill are, and probably for ever will be, highly eſteemed. In 1733 he publiſhed his firſt great work, "The Harlot's Progreſs;" and in 1735, it was followed by its counterpart, "The Rake's Progreſs." The very extraordinary merit of theſe productions, and the favourable reception they met with, ſoon induced the printſellers to be guilty of the baſe and mean conduct of having copies made of them, and thus rob the ingenious author of his well-earned reward.

To prevent this nefarious practice from continuing, Hogarth, in conjunction with Vertue and five other artiſts, in the year 1735, applied, by petition to the legiſlature, for a bill to protect their property, ſimilar to that for the ſecurity of copy-right in literary productions. A bill was conſequently paſſed to ſecure the property of an engraved plate to the original poſſeſſor of it for fourteen years from the firſt day of publication; which was to be ſpecified on the print. From this time, and owing more to this circumſtance than any other, prints have become a very conſiderable article of commerce in this country. Our artiſt commemorated the circumſtance, by an emblematical engraving, with an inſcription expreſſive of the ſubject; impreſſions from which he iſſued at various times, and on the publication of one of his electioneering prints in the following year, he made it the ſubſcription ticket.

Upon the ſecurity of this act, Hogarth employed himſelf with alacrity, and produced other works, which, while taſte and good ſenſe prevail in the world, will enſure the admiration of all who poſſeſs theſe uſeful qualities, by their ingenuity, and the force of their ſatire. In 1736 he publiſhed "The Sleeping Congregation;" "The Diſtreſſed Poet;" and ſome others of leſs note. In 1738 "The Four Parts of the Day; Morning, Noon, Evening, and Night;" "Strolling Actreſſes dreſſing in a Barn;" &c. In 1741, "The Enraged Muſician;" and in this and three following years, he appears to have laboured hard at a number of minor productions, and in preparing the plates of his moſt celebrated work, "The Marriage-à-la-mode," of which he had given notice in 1743. He had projected a counter-part to this ſubject of "A Happy Marriage," to be treated likewiſe in ſix prints; but one only of the deſigns for it was completed, and that was never engraved.

The very excellent and admired ſeries of prints juſt alluded to, were followed, in 1747, by thoſe of the "Induſtrious and Idle Apprentices;" works whoſe moral utility is felt and acknowledged by all. Gay's "Macheath in the Beggar's Opera," by his ſpirited gallantry, is ſaid to have been the cauſe of many a youth falling into bad courſes: it is hardly poſſible to calculate the efficacy of theſe prints in a contrary direction; probably much more than lectures or ſermons of the utmoſt eloquence could produce. The impreſſion they made at the time was almoſt incredible.

Hogarth's own account of the motives which induced him to publiſh theſe two ſeries do him infinite honour, and ſhew the nobleneſs of his views. "Theſe twelve prints were calculated for the inſtruction of young people, and every thing addreſſed to them is fully deſcribed in words as well as figures," &c.—"Conſidering the perſons they were intended to ſerve, I have endeavoured to render them intelligible, and as cheap as poſſible. Fine engraving is not neceſſary for ſuch ſubjects, if, what is infinitely more material, character and expreſſion is properly preſerved."—"Theſe prints I have always found ſell much more rapidly at Chriſtmas than at any other time."

Soon after the treaty of Aix la Chapelle, Hogarth, in ſearch after character and matter for the employment of his pencil, went over to France; but allowing his natural inclination to get the better of his judgment, and ſeduce him to draw "The Gate of Calais," of which he, after his return, publiſhed the humorous print under that title, he was prevented, by impriſonment in his lodgings, from proceeding beyond that town; and ſoon after compelled to go on board a ſhip and return to England.

In 1745, finding that, however great the ſucceſs of his prints might be, the public were not inclined to take his pictures off his hands, he was induced to offer ſome of them, and thoſe of the beſt he had then produced, for diſpoſal by way of auction; but after a plan of his own, *viz.* by keeping open a book to receive biddings from the firſt day of February to the laſt day of the ſame month, at 12 o'clock. The ticket of admiſſion to the ſale was his print of "The Battle of the Pictures;" a humorous production, in which he ingeniouſly upheld his aſſertions concerning the preference ſo unfairly given to old pictures, and the tricks of the dealers in them. See Nichol's and Ireland's Account of Hogarth.

The pictures thus diſpoſed of were,

The ſix of the Harlot's Progreſs, for -	£88	4	0
Eight of the Rake's Progreſs -	184	16	0
Morning - - -	21	0	0
Noon - - - -	38	17	0
Evening - - - -	39	18	0
Night - - - -	27	6	0
Strolling Players dreſſing in a Barn	27	6	0

In 1746, having finiſhed his picture of "The March of the Guards towards Finchley," he offered propoſals for a print from it, and a ſcheme to diſpoſe of the picture itſelf, by a lottery of chances, at ſo low a price as three ſhillings, in addition to 7*s.* 6*d.* ſubſcribed for a print. Having diſpoſed of 1843 chances, he gave his remaining numbers, amounting to 167, to the Foundling hoſpital, one of which, when the plate was finiſhed, and the lottery drawn, in the year 1750, was fortunate, and that very extraordinary and ingenious production thus became the property of that Inſtitution; within whoſe walls it yet remains, with ſeveral other of his productions; particularly an excellent portrait of captain Thomas Coram, founder of the hoſpital, and an hiſtorical picture of "Moſes brought before Pharaoh's Daughter."—By this ſcheme, Hogarth obtained 300*l.* for the picture, obſerving, "that it was his only chance of being paid for his time: ſuch was the patronage of the arts at that period in England; now happily very highly increaſed, to the credit of the public, and the advancement of the practical part of the art at leaſt.

In the year in which the above-mentioned print was publiſhed, Hogarth was employed by the benchers of Lincoln's Inn to paint a picture for their hall, in conſequence of their having been bequeathed 200*l.* by lord Wyndham, chancellor of Ireland, for the purpoſe of ornamenting that room as they thought proper. On the propoſal of lord Mansfield, the voice of the members was given for a picture by our artiſt, and, unhappily for his reputation, he choſe a ſubject of an elevated and ſerious nature, "St. Paul before Felix." From one who preſumed to ſmile at the high eſtimation in which the real works of the renowned artiſts of Italy were held, and boaſted of his power to rival them, the world had a right to expect much.

Inſtead of anſwering ſuch expectation, he totally failed. In every requiſite for ſuch a work, it muſt be owned, by his beſt friends, this picture is wretchedly defective. It ſtill occupies its original ſituation, and exhibits an uſeful leſſon to thoſe who place too high a value on their natural talents; and teaches them not to waſte their powers on matters for which previous education has not prepared them; nor too readily to under-rate thoſe of others, exerted in a different manner. Every branch of the art of painting requires its appropriate ſtudies, and no man can combine materials with which he is unacquainted. Hogarth, employed to earn his bread from the firſt, had not the time or the means, in this country, to inform himſelf properly of what was grand and impreſſive in the art. That which was expreſſive in common life he felt, and delineated with great force, but with common-place effect. Selection of beauty, of dignity and grandeur, which this ſubject required, he evidently knew nothing of; and conſequently failed in his attempt to inſpire his figures with ſuch qualities.

Whether he felt this himſelf when the picture was completed may be doubted; but he certainly attempted to parry criticiſm, by ſatiriſing his own work, and publiſhed a ludicrous print of the ſubject, nearly of the ſame compoſition, but attempted to throw the effect upon Rembrandt's manner of etching. Upon advertiſing a print of the real picture, he adds, "On the firſt payment a receipt will be given, which receipt will contain a new print (*in the true Dutch taſte*) of "Paul before Felix;" which, after the ſubſcription is over, will not be ſold at a leſs price than one guinea each."

At the ſame time he advertiſed for ſale his moſt beautiful ſeries of pictures before mentioned, "The Marriage-a-la-mode," by a manner of bidding peculiar to himſelf; from which he excluded all dealers in pictures. The mode he adopted was by written tickets, on which ſubſcribers wrote their names and the price they would give. This was kept open for the ſpace of one month. But either the public were not alive to the beauties and excellencies of theſe incomparable works, or his manner of proceeding diſpleaſed them: for the fact is, there were few competitors, and they were ſold at the low price of 120 guineas, with their frames, to Mr. John Lane, of Hillingdon; on whoſe death they became the property of his nephew, colonel Cawthorne. Being offered at auction by Mr. Chriſtie, in 1792, the proprietor bought them in at 900 guineas. A ſhort time afterwards they were bought by Mr. Angerſtein, at the price of 1000 guineas, and with him they ſtill remain, juſtly and deſervedly admired for their fulneſs of character and expreſſion, and their beauty of compoſition, colouring, and execution, and are a complete falſification of Mr. Walpole's aſſertion, "that Hogarth was no painter."

In the following year, 1751, he publiſhed his moral and inſtructive prints of "Beer-ſtreet," "Gin-lane," and "The four Stages of Cruelty." The generous and truly humane motives which induced him to make the four laſt deſigns he himſelf has thus deſcribed: "Theſe prints were engraved with the hope of, in ſome meaſure, correcting that barbarous treatment of animals, the very ſight of which renders the ſtreets of our metropolis ſo diſtreſſing to every feeling mind. If they have had this effect, I am more proud of having been the author, than I ſhould be of having painted Raphael's cartoons."

During the time of which we have been treating concerning Hogarth's practice and ſtudies, he continued occaſionally to paint portraits; but it was not his forte. He produced, indeed, ſeveral acknowledged ſtrong likeneſſes, but without any elevation of ſentiment or character.

He now thought it proper, in order to juſtify and enforce many points upon which he had diſagreed and contended with other artiſts, to turn author. He had, in the year 1745, painted his own portrait with his dog; before him lay a pallette ſpread with colours, and on it was drawn a waving line, which he entitled "The Line of Beauty." In this, Hogarth had a deſign. It appeared an enigma, and he himſelf relates, that, "no Egyptian hieroglyphic ever amuſed for a time more than it did. Painters and ſculptors came to me to know the meaning of it, being as much puzzled with it as other people, till it came to have ſome explanation; then, and not till then, ſome found it out to be an old acquaintance of theirs."—"Others denied that there could be ſuch a rule either in art or nature, &c." See preface to the work, which, in 1753, he though fit to publiſh under the title of "*The Analyſis of Beauty*, written with a view of fixing the fluctuating ideas of *Taſte*." Its object is to ſhew that waving lines are the ſource of beauty; and that grace is ſuperadded, when that line is twiſted to a certain degree, and becomes ſerpentine. In it are numerous references to various objects repreſented in two prints, which he etched and publiſhed with the book, and in which, if he has not ſatisfactorily illuſtrated the whole of his intention, he has done enough to prove the truth of his main poſition. Every artiſt may obtain benefit by the peruſal of the work. It is divided into chapters, treating of thoſe points, which, in his mind, formed the baſis of beauty; *viz.* fitneſs, variety, ſymmetry, ſimplicity, intricacy, quantity; and he adds to theſe, others on lines, compoſitions with the waving line, compoſitions with the ſerpentine line, proportion, light and ſhade, colouring, the face, attitude, and action.

Hogarth, in the conſciouſneſs of the pencil, not the pen, being the inſtrument by which he could beſt illuſtrate his ingenious and original thoughts; at firſt intended to engage ſome literary perſon to write what he ſhould dictate, but ſoon diſcarded that idea: and having written his work, ſubjected it by parts to the correction of Dr. Morrell, after whoſe death, the Rev. Mr. Townley kindly undertook the unthankful taſk of caſtigation on a young author; who, nevertheleſs, profited ſo much by the remarks on the firſt pages, that he greatly advanced in facility of expreſſion as he proceeded with it. The ſtyle is plain and unadorned, but clear and intelligible.

His mode of illuſtration is original and ingenious. We are ſatisfied there is great truth in his principles and obſervations; and that the world of art is greatly indebted to him for the work, though there are many opinions in which we cannot coincide; and wiſh he had not indulged ſo freely in ill-natured and ſplenetic alluſions to perſons and things not connected with his ſubject. Theſe latter drew upon him, in conſequence, much invective and ſatire; and by his own account, "the uneaſineſs it occaſioned him, more than counterbalanced the pleaſure afforded by its general ſucceſs." See his own hiſtory, written by himſelf, in John Ireland's Illuſtrations, vol. iii. p. 103. where he has given much additional and ingenious reaſoning on the ſubject of his book, but ſpeaks ſorely of the unfairneſs of the attacks made upon him; which were many, and of no very delicate nature. In oppoſition to this, he had the favourable teſtimony of many learned men, (Warburton among them,) in its favour. It was tranſlated into German by Mylius, under the author's inſpection; and an Italian tranſlation was ſoon afterwards publiſhed at Leghorn.

In 1754, the members of the Imperial Academy at Augſburg, erected for the ſtudy and improvement of arts and letters, were induced, on the appearance of this work among them, to elect Hogarth a counſellor and honorary member. In addition to this high ſounding title, he had a more ſubſtantial benefit conferred upon him this year, by the appointment of ſerjeant painter to the king, which produced him 200*l.* per annum.

In 1755 he publiſhed the plates of the election, which was the laſt ſeries of prints he favoured the world with; but he afterwards ſent forth ſeveral ſingle prints, fraught with uſeful moral inſtruction, conveyed by ingenious ſatire on the public follies of the day. The moſt ſtriking among them, were, "The Cockpit," "Enthuſiaſm delineated," and "The Medley, or a ſatire on Credulity, Superſtition, and Fanaticiſm," which laſt appeared in 1762.

In the interim he made another unſucceſsful attempt at ſerious hiſtorical painting; and that under circumſtances particularly unfavourable to him; the failure in which, or rather the public circumſtances connected with it, was thought by many to have haſtened his end. He was induced by vanity to endeavour at rivalry with a picture, ſaid to be by Correggio, of "Sigiſmunda weeping over the Heart of her Lover." The conſequence was, what might juſtly have been expected, diſappointment, with the world at leaſt, however he might himſelf appreciate it. He ſet the ſame value upon it as its prototype had brought at ſale by public auction, *viz.* 400*l.* The nobleman for whom it was painted excuſed himſelf from taking it, and it remained with Hogarth to his death. It is at preſent in the poſſeſſion of Mr. Alderman Boydell. See an account of it in Ireland's and Nichol's Anecdotes, &c. of Hogarth.

It is lamentable, that a man ſo highly uſeful and honourable to his country and the arts he profeſſed, ſhould, by ſingularity, and by an impolitic, although upright mode of conduct, bring enemies upon himſelf as he advanced in years; who, unequal to cope with him for the bright rewards of genius, yet had influence enough in the world to ſting him, and that remorſeleſsly, by petty, paltry efforts. Theſe, though they could never ſeriouſly wound his fame, yet diſturbed his repoſe, and prevented the enjoyment of thoſe well earned encomiums the wiſe and virtuous were inclined to beſtow upon his meritorious efforts. Such, unhappily, was the fate of Hogarth. Strong in mind, original in reflection, and deeply reflective, but narrowed by want of education; he laviſhed abroad opinions peculiar to himſelf; oppoſing old and well-founded reaſonings, becauſe he ſaw more of their abuſe than of their utility. He appears to have been a humouriſt, but of the beſt claſs. He ſpoke his mind freely, heedleſs of the reſult. Its effect upon him proves to others, who may be inclined to follow the ſame courſe, that it is not always to be purſued with impunity.

To ſhew that theſe remarks are well founded, we ſhall inſert his own account of his feelings on the obſervations made upon his Sigiſmunda; "the moſt violent and virulent abuſe thrown on Sigiſmunda was from a ſet of miſcreants, with whom I am proud of being *ever at war.* I mean *the expounders of the myſteries of old pictures.* I have been ſometimes told they were beneath my notice. This is true of them individually, but as they have acceſs to people of rank, who ſeem as happy in being cheated as theſe merchants are in cheating them, they have a power of doing much miſchief to modern artiſts. However mean the vender of poiſons, the mineral is deſtructive; *to me its operation was troubleſome enough.* Ill-nature ſpread ſo faſt, that now was the time for every little dog in the profeſſion to bark, and revive the old ſpleen which appeared at the time of the Analyſis. The anxiety that attends endeavouring to recollect ideas long dormant, and the misfortunes which clung to this tranſaction, coming at a time when nature demands quiet, and ſomething beſides exerciſe to cheer it, added to my long ſedentary life, *brought on an illneſs which continued twelve months.* But when I got well enough to ride on horſeback, I ſoon recovered."

In a ſtate thus irritable, goaded by malignity and envy, and reſting entirely upon his own conſcious rectitude, and the conſolation of a few friends, who knew how to eſtimate his talents and his genuine worth, for ſupport; he continued to employ himſelf on minor labours; till, in 1762, he unfortunately elicited a flame of enmity in the breaſts of two powerful antagoniſts, under whoſe united efforts he ſunk. Theſe were Wilkes and Churchill, whoſe great ingenuity and keen ſatire he drew upon himſelf, by exhibiting them in his print of "The Times," as incendiaries; fomenters of public diſturbances. His own account of this circumſtance we ſhall extract from J. Ireland's Illuſ. vol. iii. p. 212, et ſeq. "This being a period when war abroad, and contention at home filled every body's mind, prints were thrown into the back-ground, and the ſtagnation rendered it neceſſary that I ſhould do ſome *timed thing* to recover my loſt time, and ſtop a gap in my income. This drew forth my print of "The Times," a ſubject which tended to the reſtoration of peace and unanimity, and put the oppoſers of theſe humane objects in a light which gave great offence to thoſe who were trying to foment deſtruction in the minds of the populace. One of the moſt notorious among them, till now rather my friend and flatterer, attacked me in a North Briton, in ſo infamous and malign a ſtyle, that he himſelf, when puſhed, even by his beſt friends, was driven to ſo poor an excuſe, as to ſay, *he was drunk when he wrote it.* Being at that time very weak, and in a kind of ſlow fever, it could not but ſeize on a feeling mind. My philoſophical friends adviſe me to laugh at the nonſenſe of party-writing—who would mind it? But I cannot reſt myſelf." To revenge himſelf, he publiſhed a likeneſs of Wilkes, which doubtleſs he thought was the greateſt ſatire upon his pretenſion to political honeſty and heroic character that he could produce. This drew upon him Churchill the poet, who ſeverely treated him in an epiſtle, fraught with the groſſeſt abuſe and the utmoſt malignity, and even falſehood, though in ſome parts juſtly complimentary. All that the bitterneſs of reſentment could dictate, or the malevolence of the keeneſt ſatire inſpire, is poured forth in it upon the devoted Hogarth, who could only retort by a print of a bear with a pot of porter and a ragged ſtaff, on the knots of which was written lies, lies, lies!

This unhappy event Hogarth did not long ſurvive. It is ſaid that he did not ſuffer in mind by the coarſe attack of Churchill, ſo much as by the previous one by Wilkes; he ſays of it himſelf, that "it made no impreſſion, but perhaps in ſome meaſure effaced or weakened the black ſtrokes of the North Briton." And he concludes his own memoir by ſaying, "Thus have I gone through the principal circumſtances of a life which, till lately, paſſed pretty much to my own ſatisfaction, and I hope in no reſpect injurious to any other man. This I can ſafely aſſert, I have invariably endeavoured to make thoſe about me tolerably happy, and my greateſt enemy cannot ſay I ever did an intentional injury; though, without oſtentation, I could produce many inſtances of men that have been eſſentially benefited by me. What may follow God knows! Finis."

Such is the candid appeal, which, in conſciouſneſs of ſound principle and rectitude of heart, this excellent artiſt and well intentioned man made to his contemporaries and to poſterity. Let the human weakneſs he exhibited in common with his fellow men teach them, like his works, (which neceſſarily lead to moral reflection), that ſtrict government of the heart and mind, and kind indulgence to the infirmities of others, are the ſureſt guides to happineſs; here, as well as hereafter.

His laſt original production he termed Finis, the Bathos, or the Art of ſinking in Sublime Painting; which Mr. J. Ireland juſtly terms an enigmatical and pun-ical print. The origin and production of which he thus deſcribes.

After dinner, with a few ſocial friends at his own table, he was aſked what will be the ſubject of your next print? "The end of all things;" was his reply. If that ſhould be the caſe, added one of his friends, your buſineſs will be finiſhed, for there will be an end of the painter. With a look that conveyed a conſciouſneſs of approaching diſſolution, and a deep ſigh, he anſwered, "there will be ſo, and therefore, *the ſooner my work is done the better.*" With this impulſe, he next day began the plate, and ſeeming to conſider it as a *terminus to his fame*, never turned to the right or left until he arrived at the end of his journey.

The above print was publiſhed in March 1764, and in the October following, death put a *finis* to the labours of this extraordinary man, and deprived ſociety of one of its moſt uſeful members; who contributed alike to its amuſement and its improvement, and has left a perpetual fund of both for the benefit of future ages.

The following conciſely critical diſſertation upon the character and works of Hogarth, from the elegant pen of the late Horace Walpole, earl of Orford, we conceive will be agreeable to our readers, and prove a valuable addition to the above account of his life.

"Having diſpatched the herd of our painters in oil, I reſerved to a claſs by himſelf that great and original genius, Hogarth; conſidering him rather as a writer of comedy with a pencil, than as a painter. If catching the manners and follies of an age *living as they riſe*, if general ſatire on vices and ridicules, familiariſed by ſtrokes of nature, and heightened by wit, and the whole animated by proper and juſt expreſſions of the paſſions, be comedy, Hogarth compoſed comedies as much as Moliere; in his Marriage A-la-mode there is even an intrigue carried on throughout the piece. He is more true to character than Congreve; each perſonage is diſtinct from the reſt, acts in his ſphere, and cannot be confounded with any other of the dramatis perſonæ. The alderman's footboy, in the laſt print of the ſet I have mentioned, is an ignorant ruſtic; and if wit is ſtruck out from the characters in which it is not expected, it is from their acting conformably to their ſituation, and from the mode of their paſſions, not from their having the wit of fine gentlemen. Thus there is wit in the figure of the alderman, who, when his daughter is expiring in the agonies of poiſon, wears a face of ſolicitude, but it is to ſave her gold ring, which he is drawing gently from her finger. The thought is parallel to Moliere's, where the miſer puts out one of the candles as he is talking. Moliere, inimitable as he has proved, brought a rude theatre to perfection. Hogarth had no model to follow and improve upon. He created his art; and uſed colours inſtead of language. His place is between the Italians, whom we may conſider as epic poets and tragedians, and the Flemiſh painters, who are as writers of farce and editors of burleſque nature. They are the Tom Browns of the mob. Hogarth reſembles Butler, but his ſubjects are more univerſal; and amidſt all his pleaſantry, he obſerves the true end of comedy, reformation; there is always a moral to his pictures. Sometimes he roſe to tragedy, not in the cataſtrophe of kings and heroes, but in marking how vice conducts, inſenſibly and incidentally, to miſery and ſhame. He warns againſt encouraging cruelty and idleneſs in young minds, and diſcerns how the different vices of the great and the vulgar lead by various paths to the ſame unhappineſs. The fine lady in Marriage A-la-mode, and Tom Nero in the Four Stages of Cruelty, terminate their ſtory in blood,—ſhe occaſions the murder of her huſband; he aſſaſſinates his miſtreſs. How delicate and ſuperior too is his ſatire, when he intimates in the College of Phyſicians and Surgeons that preſide at a diſſection, how the legal habitude of viewing ſhocking ſcenes hardens the human mind, and renders it unfeeling. The preſident maintains the dignity of inſenſibility over an executed corpſe, and conſiders it but as the object of a lecture. In the print of the Sleeping Judges, this habitual indifference only excites our laughter.

"It is to Hogarth's honour that, in ſo many ſcenes of ſatire or ridicule, it is obvious that ill-nature did not guide his pencil. His end is always reformation, and his reproofs general. Except in the print of the Times, and the two portraits of Mr. Wilkes and Mr. Churchill, that followed, no man, amidſt ſuch a profuſion of characteriſtic faces, ever pretended to diſcover or charge him with the caricatura of a real perſon; except of ſuch notorious characters as Chartres and mother Needham, and a very few more, who are acting officially and ſuitably to their profeſſions. As he muſt have obſerved ſo carefully the operation of the paſſions on the countenance, it is even wonderful that he never, though without intention, delivered the very features of any identical perſon. It is at the ſame time a proof of his intimate intuition into nature; but had he been too ſevere, the humanity of endeavouring to root out cruelty to animals would atone for many ſatires. It is another proof that he drew all his ſtores from nature and the force of his own genius, and was indebted neither to models nor books for his ſtyle, thoughts or hints, that he never ſucceeded when he deſigned for the works of other men. I do not ſpeak of his early performances at the time that he was engaged by bookſellers, and roſe not above thoſe they generally employ; but in his maturer age, when he had invented his art, and gave a few deſigns for ſome great authors, as Cervantes, Gulliver, and even Hudibras, his compoſitions were tame, ſpiritleſs, void of humour, and never reach the merits of the books they were deſigned to illuſtrate. He could not bend his talents to think after any body elſe. He could think like a great genius rather than after one. I have a ſketch in oil that he gave me, which he intended to engrave: it was done at the time that the houſe of commons appointed a committee to enquire into the cruelties exerciſed on priſoners in the Fleet to extort money from them. The ſcene is the committee; on the table are the inſtruments of torture. A priſoner in rags, half ſtarved, appears before them; the poor man has a good countenance, that adds to the intereſt. On the other hand is the inhuman gaoler. It is the very figure that Salvator Roſa would have drawn for Iago in the moment of detection. Villany, fear, and conſcience, are mixed in yellow and livid on his countenance; his lips are contracted by tremor, his face advances as eager to lie, his legs ſtep back as thinking to make his eſcape; one hand is thruſt precipitately into his boſom, the fingers of the other are catching uncertainly at his button-holes. If this was a portrait, it is the moſt ſpeaking that ever was drawn; if it was not, it is ſtill finer.

"It is ſeldom that his figures do not expreſs the character he intended to give them. When they wanted an illuſtration that colours could not beſtow, collateral circumſtances, full of wit, ſupply notes. The nobleman in Marriage A-la-mode has a great air—the coronet on his crutches, and his pedigree iſſuing out of the bowels of William the Conqueror, add to his character. In the Breakfaſt the old ſteward reflects for the ſpectator. Sometimes a ſhort label is an epigram, and is never introduced without improving the ſubject. Unfortunately ſome circumſtances, that were temporary, will be loſt to poſterity, the fate of all comic authors; and if ever an author wanted a commentary, that none of his beauties might be loſt, it is Hogarth—not from being obſcure (for he never was that but in two or three of his firſt prints, where tranſient national follies, as lotteries, free-maſonry, and the South-ſea, were his topics), but for the uſe of foreigners, and from a multiplicity of little incidents, not eſſential to, but always heightening, the principal action. Such is the ſpider's-web extended over the poor's box in a pariſh-church; the blunders in architecture in the nobleman's ſeat ſeen through the window, in the firſt print of Marriage A-la-mode; and a thouſand in the Strollers dreſſing in a Barn, which for wit and imagination, without any other end, I think the beſt of all his works; as for uſeful and deep ſatire, that on the Methodiſts is the moſt ſublime. The ſcenes of Bedlam and the Gaming-houſe are inimitable repreſentations of our ſerious follies or unavoidable woes; and the concern ſhewn by the lord-mayor, when the companion of his childhood is brought before him as a criminal, is a touching picture, and big with humane admonition and reflection.

"Another inſtance of this author's genius, is his not condeſcending to explain his moral leſſons by the trite poverty of allegory. If he had an emblematic thought, he expreſſed it with wit, rather than by a ſymbol. Such is that of the whore ſetting fire to the world in the Rake's Progreſs. Once indeed he deſcended to uſe an allegoric perſonage, and was not happy in it; in one of his election prints Britannia's chariot breaks down while the coachman and footman are playing at cards on the box. Sometimes too, to pleaſe his vulgar cuſtomers, he ſtooped to low images and national ſatire, as in the two prints of France and England, and that of the Gates of Calais. The laſt indeed has great merit, though the caricatura is carried to exceſs. In all theſe the painter's purpoſe was to make his countrymen obſerve the eaſe and affluence of a free government, oppoſed to the wants and woes of ſlaves. In Beer-ſtreet the Engliſh butcher toſſing a Frenchman in the air with one hand, is abſolute hyperbole; and what is worſe, was an after-thought, not being in the firſt edition. The Gin-alley is much ſuperior, horridly fine, but diſguſting.

"His Bartholomew-fair is full of humour; the March to Finchley, of nature; the Enraged Muſician tends to farce. The Four Parts of the Day, except the laſt, are inferior to few of his works. The Sleeping Congregation, the Lecture on the Vacuum, the Laughing Audience, the Conſultation of Phyſicians as a coat of arms, and the Cockpit, are perfect in their ſeveral kinds. The prints of Induſtry and Idleneſs have more merit in the intention than execution.

"Towards his latter end he now and then repeated himſelf, but ſeldomer than moſt great authors who executed ſo much.

"It may appear ſingular, that of an author whom I call comic, and who is ſo celebrated for his humour, I ſhould ſpeak in general in ſo ſerious a ſtyle; but it would be ſuppreſſing the merits of his heart to conſider him only as a promoter of laughter. I think I have ſhewn that his views were more generous and extenſive. Mirth coloured his pictures, but benevolence deſigned them. He ſmiled like Socrates, that men might not be offended at his lectures, and might learn to laugh at their own follies. When his topics were harmleſs, all his touches were marked with pleaſantry and fun. He never laughed, like Rabelais, at nonſenſe that he impoſed for wit; but, like Swift, combined incidents that divert one from their unexpected encounter, and illuſtrate the tale he means to tell. Such are the hens rooſting on the upright waves in the ſcene of the Strollers, and the devils drinking porter on the altar. The manners or *coſtume* are more than obſerved in every one of his works. The very furniture of his rooms deſcribe the characters of the perſons to whom they belong; a leſſon that might be of uſe to comic authors. It was reſerved to Hogarth to write a ſcene of furniture. The rake's levee-room, the nobleman's dining-room, the apartments of the huſband and wife in Marriage A-la-mode, the alderman's parlour, the poet's bed-chamber, and many others, are the hiſtory of the manners of the age.

"But perhaps too much has been ſaid of this great genius as an author; it is time to ſpeak of him as a painter, and to mention the circumſtances of his life, in both which I ſhall be more brief. His works are his hiſtory.

"His apprenticeſhip was no ſooner expired, than he ſtudied drawing from the life, in which he never attained to great excellence. It was character, the paſſions, the ſoul, that his genius was given him to copy: his force lay in expreſſion, not in tints and chiaro-ſcuro. At firſt he worked for bookſellers, and deſigned and engraved plates for ſeveral books; and, which is extraordinary, no ſymptom of genius dawned in thoſe plates. His Hudibras was the firſt of his works that marked him as a man above the common; yet what made him then noticed, now ſurpriſes us to find ſo little humour in an undertaking ſo congenial to his talents. On the ſucceſs however of thoſe plates he commenced painter, a painter of portraits; the moſt ill-ſuited employment imaginable to a man whoſe turn certainly was not flattery, nor his talent adapted to look on vanity without a ſneer. Yet his facility in catching a likeneſs, and the method he choſe of painting families and converſations in ſmall, then a novelty, drew him prodigious buſineſs for ſome time. It did not laſt, either from his applying to the real bent of his diſpoſition, or from his cuſtomers apprehending that a ſatiriſt was too formidable a confeſſor for the devotees of ſelf-love.

"His Midnight Modern Converſation was the firſt work that ſhewed his command of character: but it was the Harlot's Progreſs, publiſhed in 1729 or 1730, that eſtabliſhed his fame. The pictures were ſcarce finiſhed, and no ſooner exhibited to the public, and the ſubſcription opened, than above twelve hundred names were entered on his book. The familiarity of the ſubject, and the propriety of the execution, made it taſted by all ranks of people. Every engraver ſet himſelf to copy it, and thouſands of imitations were diſperſed all over the kingdom. It was made into a pantomime, and performed on the ſtage. The Rake's Progreſs, perhaps ſuperior, had not ſo much ſucceſs, from want of novelty; nor indeed is the print of the Arreſt equal in merit to the others.

" The curtain was now drawn aſide, and his genius ſtood diſplayed in its full luſtre. From time to time he continued to give thoſe works that ſhould be immortal, if the nature of his art will allow it. Even the receipts for his ſubſcriptions had wit in them. Many of his plates he engraved himſelf, and often expunged faces etched by his aſſiſtants when they had not done juſtice to his ideas.

" Not content with ſhining in a path untrodden before, he was ambitious of diſtinguiſhing himſelf as a painter of his hiſtory. But the genius that had entered ſo feelingly into the calamities and crimes of familiar life, deſerted him in a walk that called for dignity and grace. The burleſque turn of his mind mixed itſelf with the moſt ſerious ſubjects. In his Danaë the old nurſe tries a coin of the golden ſhower with her teeth, to ſee if it is true gold: in the Pool of Betheſda, a ſervant of a rich ulcerated lady beats back a poor man that ſought the ſame celeſtial remedy. Both circumſtances are juſtly thought, but rather too ludicrous. It is a much more capital fault that Danaë herſelf is a mere nymph of Drury. He ſeems to have conceived no higher idea of beauty.

" So little had he eyes to his own deficiencies, that he believed he had diſcovered the principle of grace. With the enthuſiaſm of a diſcoverer, he cried, Eureka! This was his famous line of beauty, the ground-work of his Analyſis, a book that has many ſenſible hints and obſervations, but that did not carry the conviction, nor meet the univerſal acquieſcence he expected.

" He fell afterwards into a groſſer miſtake. From a contempt of the ignorant virtuoſi of the age, and from indignation at the impudent tricks of picture-dealers, whom he ſaw continually recommending and vending vile copies to bubble-collectors, and from having never ſtudied, indeed having ſeen, few good pictures of the great Italian maſters, he perſuaded himſelf that the praiſes beſtowed on thoſe glorious works were nothing but the effects of prejudice. He talked this language till he believed it; and having heard it often aſſerted, as is true that time gives a mellowneſs to colours and improves them, he not only denied the propoſition, but maintained that pictures only grew black and worſe by age, not diſtinguiſhing between the degrees in which the propoſition might be true or falſe. He went farther; he determined to rival the ancients—and, unfortunately, choſe one of the fineſt pictures in England as the object of his competition. This was the celebrated Sigiſmonda of ſir Luke Schaub, now in the poſſeſſion of the duke of Newcaſtle, ſaid to be painted by Correggio, probably by Furnio, but no matter by whom. It is impoſſible to ſee the picture, or read Dryden's inimitable tale, and not feel that the ſame ſoul animated both. After many eſſays, Hogarth at laſt produced *his* Sigiſmonda—but no more like Sigiſmonda, than I to Hercules. None of the ſober grief, no dignity of ſuppreſſed anguiſh, no involuntary tear, no ſettled meditation on the fate ſhe meant to meet, no amorous warmth turned holy by deſpair; in ſhort, all was wanting that ſhould have been there. He ſet the price of 400*l.* on it, and had it returned on his hands by the perſon for whom it was painted. He took ſubſcriptions for a plate of it, but had the ſenſe at laſt to ſuppreſs it. I make no more apology for this account than for the encomiums I have beſtowed on him. Both are dictated by truth, and are the hiſtory of a great man's excellencies and errors. Milton, it is ſaid preferred his Paradiſe Regained to his immortal poem.

" The laſt memorable event of our artiſt's life was his quarrel with Mr. Wilkes, in which, if Mr. Hogarth did not commence direct hoſtilities on the latter, he at leaſt obliquely gave the firſt offence, by an attack on the friends and party of that gentleman. This conduct was the more ſurpriſing, as he had all his life avoided dipping his pencil in political conteſts, and had early refuſed a very lucrative offer that was made to engage him in a ſet of prints againſt the head of a court-party. Without entering into the merits of the cauſe, I ſhall only ſtate the fact. In September 1762 Mr. Hogarth publiſhed his print of the Times. It was anſwered by Mr. Wilkes in a ſevere North-Briton. On this the painter exhibited the caricatura of the writer. Mr. Churchill, the poet, then engaged in the war, and wrote his epiſtle to Hogarth, not the brighteſt of his works, and in which the ſevereſt ſtrokes fell on a defect that the painter had neither cauſed nor could amend—his age; and which, however, was neither remarkable nor decrepit; much leſs had it impaired his talents, as appeared by his having compoſed but ſix months before one of his moſt capital works, the ſatire on the Methodiſts. In revenge for this epiſtle, Hogarth caricatured Churchill under the form of a canonical bear, with a club and a pot of porter—*et vitulâ, tu dignus et hic*—never did two angry men of their abilities throw mud with leſs dexterity.

" He ſold about twenty-four of his principal pictures by auction in 1745. Mr. Vincent Bourne addreſſed a copy of Latin hendecaſyllables to him on his chief pictures; and Roquet, the enameller, publiſhed a French explanation, though a ſuperficial one, of many of his prints, which it was ſaid, he had drawn up for the uſe of marſhal Belleiſle, then a priſoner in England."

HOGBO, in *Geography*, a town of Sweden, in the province of Geſtricia; 9 miles W. of Geffle.

HOGDAL Osver, a town of Sweden, in Harjedalen; 76 miles N.W. of Hudwickſwall.

Hogdal, *Utter*, a town of Sweden, in Helſingland; 70 miles N.W. Hudwickſwall.

HOGDEN, a ſmall iſland in the gulf of Finland. N. lat. 59° 33′. E. long. 26° 40′.

HOGENHINE, Hogenheyne, or rather *Agenhine, q.d. own ſervant.* See Third *night awn hind.*

HOGENPOUR, in *Geography*, a town of Hindooſtan, in Bednore.

HOGERUS, in *Biography*, an abbot, who is ſaid to be the author of a curious MS. treatiſe on muſic, N° CCLX, in the library of Bene't college, Cambridge; where it is entitled " Muſica Hogeri, ſive Excerptiones Hogeri Abbatis ex Autoribus Muſicæ Artis:" " The Muſic of Hogerus, or Extracts from Writers on the Art of Muſic, by the Abbot Hogerus." Who this abbot was, or when he lived, will not now be eaſily diſcovered. His name has long puzzled the learned: and we find, among the letters of Baptiſta Doni, that this MS. was a ſubject of a correſpondence between him and Dr. Thomas Rigel, of London, in the year 1639. Doni, who had emiſſaries at this time all over Europe, in ſearch of muſical curioſities, upon hearing of this extraordary MS. in his letter to Dr. Rigel concerning it, ſays " De Hogerii abbatis excerptis (ſiquidem exſtarent) brevia quædam ſpecimina dumtaxat cuperem: quum enim autor ſit mihi plane ignotus, affirmare non auſim, an talia ſint ejus ſcripta, ut totus ſcribi mereatur."—The doctor, in his reply to Doni, the ſame year, tells him, that after making all poſſible inquiry in the library at Cambridge—" Nullum Hogerii ſcriptum in ea bibliotheca inveniri." Whether this was true, or only a ſhort way of getting rid of the trouble incident to ſuch inquiries, we know not; but we find the book entered in the catalogue that goes under the name of Dr. Gale, thus: "Excerptiones Rogeri Baconi ex auctoribus Muſicæ Artis." It is poſſible that this book may have been tranſcribed by, or for, this powerful man; and it is the more poſſible, as he admitted muſic among his ſtudies, and is ſaid, by his biographers, to have written "De valore Muſices, pr. Secundum Boctium et cæteros auctores." However this may have been, the MS. which is beautifully written on vellum, and extremely well preſerved, contains more than it promiſes; for the two muſical treatiſes of Hubald and Odo, both written in the tenth century, are not given in fragments or abſtracts, but entire, and unmixed with the writings of any other authors. See HUBALD and ODO.

HOGGENBERG, in *Geography,* a town of Auſtria; 12 miles S.W. Freyſtadt.

HOGGEREL, a name that ſignifies the ſame thing with *hog-ſheep,* in particular diſtricts.

HOGGET, or HOGREL, is a young boar of the ſecond year.

HOGGIT denotes the male or wedder ſheep, from the period of taking it from the ewe, to the time of its attaining the age of one year.

HOGI, in the *Eaſtern Churches,* as at Cairo, is an under attendant on the moſque, who is the reader under the ſheick.

HOGKNE, in *Geography,* a town of Aſiatic Turkey, in the government of Moſul; 32 miles W. of Moſul.

HOGLAND, a town of Norway, in the dioceſe of Aggerhuus; 32 miles N. of Frederickſtall.

HOGOE, properly *Haut-Gout,* a meſs in cookery, ſo denominated from its high ſavour, or reliſh.

HOGOLIN, or HOGOLEU, in *Geography,* one of the Caroline iſlands, or New Philippines; about 90 Britiſh miles in length, by 40 in breadth.

HOGSBY, a town of Sweden, in the province of Smaland; 33 miles N. of Calmar.

HOGSHEAD, a meaſure of capacity, and is of ſeveral kinds, *viz.*

HOGSHEAD *of Ale or Beer,* in the country, is 51 ale gallons = 204 ale quarts = 408 ale pints = $1\frac{1}{2}$ barrel = 3 country kilderkins = 6 country firkins = $\frac{17}{18}$ths, or .9444 London beer hogſheads = $\frac{17}{16}$ths, or 1.0625 London ale hogſheads = .9825 wine hogſheads = 14382 cubic inches = 8.32291 cubic feet = .30568 cubic yards = 28.9616 cubic links.

HOGSHEAD *of Ale,* in London, is 48 ale gallons = 192 ale quarts = 384 ale pints = $1\frac{1}{2}$ London ale barrel = 3 London ale kilderkins = 6 London ale firkins = $\frac{16}{17}$ths, or .941176 country ale or beer hogſheads = $\frac{8}{9}$ths, or .8888 London beer hogſheads = .930117 wine hogſheads = 13536 cubic inches = $7\frac{5}{6}$ths, or 7.8333 cubic feet = .290123 cubic yards = 27.25804 cubic links.

HOGSHEAD *of Beer,* in London, is 54 ale gallons = 216 ale quarts = 432 ale pints = $1\frac{1}{2}$ London beer barrel = 3 London beer kilderkins = 6 London beer firkins = $\frac{9}{8}$ths, or 1.125 London ale hogſheads = $\frac{18}{17}$ths, or 1.058824 country ale or beer hogſheads = 1.04638 wine hogſheads = 15228 cubic inches = 8.8125 cubic feet = .32638 cubic yards = 30.66526 cubic links.

HOGSHEAD *of Wine, Cyder, Mead, Metheglin, Olives,* &c. (5 Ann.) is 63 wine gallons = 252 wine quarts = 504 wine pints = 2016 wine gills = $1\frac{1}{2}$ tierce = 2 wine barrels = $3\frac{1}{2}$ rundlets = 1.011649 country ale or beer hogſheads = 1.07513 London ale hogſheads = .955673 London beer hogſheads = 14553 cubic inches = 8.4219 cubic feet = .311921 cubic yards = 29.30601 cubic links.

HOGSHEAD *of Water,* in *Engineery,* according to Beighton, Harris (Lexicon Tech. Meaſures and Smeaton's Rep. vol. i. p. 214.) is 63 ale gallons = 17766 cubic inches = 10.28125 cubic feet = $\frac{7}{6}$ths London beer hogſheads = 35.76137 cubic links: but, according to Mr. Smeaton, (Reports, vol. i. p. 245, 247, &c.) it is 52 ale gallons = 14664 cubic inches = 8.4861 cubic feet = 29.51732 cubic links. Dr. Deſaguliers uſed the London beer hogſhead of 54 gallons in his experiments on pumping.

HOGSHEAD *of Lime* in Somerſetſhire, is five heaped buſhels or bags, (ſee Bath Soc. Papers, vol. x. p. 58.) = .078125 carriages.

HOGSIO, in *Geography,* a town of Sweden, in the province of Angermanland; 14 miles N.N.W. of Hernoſand.

HOGSTA, a town of Sweden, in the province of Upland; 7 miles N. of Upſal.

HOGSTIES, one of the ſmall Bahama iſlands, ſurrounded with rocks. N. lat. 21° 40′. W. long. 73° 50′.

HOGSUND, a town of Norway, in the province of Aggerhuus; 23 miles S.W. of Chriſtiania.

HOGUE, LA, a town of France, in the department of the Channel; oppoſite to which was fought, in 1692, the battle of la Hogue, in which the Engliſh fleet, under admiral Ruſſel, obtained a glorious victory over the French, and 15 French men of war were taken, burned, or deſtroyed; 5 miles S. of Barfleur. N. lat. 49° 35′. W. long. 1° 11′.

HOGUE, *Belle,* a cape on the N. coaſt of the iſland of Jerſey; 5 miles N. of St. Helier.

HOGWALTA, a town of Sweden, in Warmeland; 30 miles N.W. of Carlſtadt.

HOHENBERG, a county and principality of Germany, ſituated between Wurtemberg and the Auſtrian Briſgaw. It is divided into Upper and Lower counties, lying at ſome diſtance from each other. The chief towns are Rotenburg, Ehingen, Hord, and Schramberg.—Alſo, a town of Germany, in the principality of Bayreuth; 10 miles E.N.E. of Wunſiedel.—Alſo, a town of the biſhopric of Bamberg; 5 miles E.N.E. of Kupferberg.

HOHENBURG, a town of Auſtria, on the river Traſen; 20 miles W. of Ebenfurth.

HOHENECK, a town and caſtle of Germany, in the principality of Bayreuth; 14 miles N. of Anſpach.

HOHEN-ELB, a town of Bohemia, in the circle of Konigingratz; 23 miles N. of Konigingratz. N. lat. 50° 30′. E. long. 15° 30′.

HOHENEMBS, a county and principality ſituated to the S. of the lake of Conſtance.

HOHENESTED, a town of the duchy of Holſtein; 10 miles S.W. of Nordtorp.

HOHENFELS, a town of Bavaria, in the lordſhip of Brieteneck; 17 miles N N.W. of Ratiſbon.

HOHEN-FREDEBERG, a town of Sileſia, in the province of Schweidnitz; 5 miles N.N.W. of Freyburg.

HOHENFURT, a town of Bohemia, on the Molda; 4 miles S.S.W. of Roſenberg.

HOHEN-LIMBURG, a town of Germany, in the county of Mark; 9 miles S. of Schwiert.

HOHENLOE, or HOLACH, a county and principality of Germany, W. of the marggravate of Anſpach, about 26 miles from N. to S. and 23 from E. to W.; conſiſting of mountains, vallies, and plains. The ſouthern parts abound with vineyards, and the northern are cultivated for corn: the vallies have excellent meadows and paſture land, which feed great numbers of a valuable kind of cattle: and the mountains are clothed with oak, fir, pine, beech, and birch, and ſupply plenty of game. The inhabitants are chiefly Lutherans, intermixed with ſome Roman Catholics.

HOHENMAUT, or Wissoky-meyto, a town of Bohemia, in the circle of Chrudim, with a ſmall territory annexed; 14 miles E. of Chrudim. N. lat. 49° 54′. E. long. 15° 56′.

HOHENSCHAU, a town and caſtle of Bavaria, near which are iron mines and forges; 70 miles W. of Salzburg.

HOHEN-SOLMS, a town of Germany, whence a branch of the family of Solms derives the title of count, ſituated in a valley near a high mountain, and inhabited by Calviniſts, though the ſurrounding villages are occupied by Lutherans; 5 miles N.N.E. of Wetzlar. N. lat. 50° 38′. E. long. 8° 35′.

HOHENSTADT, or Zabrech, a town of Moravia, in the circle of Olmutz; 24 miles N.W. of Olmutz. N. lat. 49° 49′. E. long. 61° 41′.

HOHENSTEIN, a town of Pruſſia, in the province of Oberland, with a caſtle. N. lat. 53° 27′. E. long. 20° 15′. —Alſo, a town of Saxony, in the marggravate of Meiſſen; 9 miles E.N.E. of Pirna. N. lat. 50° 56′. E. long. 14° 10′.

HOHENWART, a town of Bavaria; 9 miles S. of Ingolſtadt.

HOHENZOLLERN, a principality of Germany, divided into three branches, *viz.* Hohenzollern, Heckingen, and Hohenzollern Sigmaringen: each prince having a revenue of about 30,000 florins.

HOHNSTEIN, a county of Weſtphalia, ſituated in Thuringia.

HOIET, a ſmall iſland in the Eaſt Indian ſea, near the coaſt of Queda. N. lat. 6 36′. E. long. 99° 47′.

HOJILAMSA, a town on the E. coaſt of the iſland of Celebes. N. lat. 0° 51′. E. long. 124° 59′.

HOIN, a town of Perſia, in the province of Adirbeitzan; 42 miles S.S.E. of Ardebil.

HOIST, in *Sea Language*, denotes the perpendicular height of a flag or enſign, as oppoſed to the *fly*, which ſignifies its breadth from the ſtaff to the outer edge.

HOISTING ſignifies the operation of drawing up any body by the aſſiſtance of one or more tackles. Hoiſting is never applied to the act of pulling up any body by the help of a ſingle block, except in the exerciſe of extending the ſails, by drawing them upwards along the maſt or ſtays, to which it is invariably applied.

Hoisting *Jack*, in *Mechanics*, is a machine uſed for raiſing large weights to ſmall heights, under which they can be placed. They are of two kinds; one in which a rack is puſhed upwards by means of a pinion and winch-handle, and wheels, when great power is required; and others, in which a ſcrew is moved upwards by means of a revolving nut, turned by a lever. In the Repoſitory of the Society of Arts in the Adelphi, two models of hoiſting-jacks are preſerved for public inſpection, *viz.* Mr. Abraham Staghold's, claſs iv. N° 47, deſcribed in Tranſ. Soc. Arts, vol. i. p. 319, and Bailey's Machines, vol. i. 168; and Mr. William Mocock's claſs iv. N° 116. vol. vii. 239. and vol. viii. p. 179. See Jack.

Hoisting *Tackle*, is an ingenious and very effective way of raiſing weights, lately introduced very extenſively by Mr. Simeon Thompſon, who has a patent for its application.

HOITLALLOTL, in *Ornithology*, the courier pheaſant of Latham. See Phasianus *Mexicanus*.

HOITLING, in *Ichthyology*. See Gadus *Merlangus*.

HOITZANATL, in *Ornithology*. See Corvus *Mexicanus*.

HOITZITLIN. See Certhia *Cærulea*, and Certhia *Mexicana*.

HOITZTLACUATZIN, in *Zoology*. See Hystrix *Prehenſilis*.

HOIZITZILTOTOTL, in *Ornithology*. See Trochilus *Punctulatus*.

HOKE-DAY, Hock-day, or *Hock-Tueſday*, in our *Ancient Cuſtoms, (Dies Martis, quem quindenam Paſchæ vocant)*, the ſecond Tueſday after Eaſter week: a ſolemn feſtival celebrated for many ages in England, in memory of the great ſlaughter of the Danes in the time of king Ethelred II. in 1002; they having been, in that reign, almoſt all deſtroyed in one day in the different parts of the kingdom, and that principally by women. Mr. Bryant apprehends, that a holiday could not have been inſtituted for the commemoration of ſo cruel an event, which afforded matter for humiliation and ſorrow rather than of feſtivity and mirth. Others have, therefore, thought that Hoke-day alluded to the death of Hardicanute, the laſt monarch of the Daniſh race, at a marriage-feaſt in Lambeth, on the 8th of June, 1042; by whoſe death, the Engliſh were for ever releaſed from the wanton inſults and boundleſs exactions of him and his countrymen. (See a Memoir on Hoke-day, by the Rev. Mr. Denne, in the Archæologia, vol. vii. p. 244.) This is ſtill kept up in ſome counties, and the women bear the principal ſway in it, ſtopping all paſſengers with ropes and chains, and exacting ſome ſmall matter from them to make merry with. This day was very remarkable in former times, inſomuch as to be uſed on the ſame footing with Michaelmas, for a general term or time of account. We find leaſes without date, reſerving ſo much rent payable *ad duos anni terminos, ſcil. ad le hoke-day, et ad feſtum ſancti Michaelis.* In the accounts of Magdalen college, Oxford, there is yearly an allowance, *pro mulieribus hockantibus*, of ſome manors of theirs in Hampſhire; where the men *hock* the women on Mondays, and the women *hock* them on Tueſdays. The meaning of it is, that, on that day, the women in merriment ſtopped the way with ropes, and pulled paſſengers to them, deſiring ſomething to be laid out for pious uſes.

Hoke-day *Money*, or *Hoke-Tueſday Money*, a tribute anciently paid the landlord for giving his tenants and bondmen leave to celebrate hock-day, or hoke-day, in memory of the expulſion of the domineering Danes.

HOKE-NORTON, in *Geography*, a village of England, in the county of Oxford, where the Danes were defeated by the Saxons, under Edward the Elder, about the year 914. Veſtiges of the camps are yet viſible; 5 miles N.N.E. of Chipping Norton.

HO-KIEN, a city of China, of the firſt rank, in the province of Pe-tcheli, ſituated between two rivers abounding in fiſh, and remarkable for the neatneſs of its ſtreets. It has under its juriſdiction two cities of the ſecond, and fifteen of the third claſs; 87 miles S. of Peking. N. lat. 38° 28′. E. long. 115° 43′.

HOLAIVA, or Hoolaiva, one of the Hapaee iſlands, in the South Pacific ocean, uncultivated and uninhabited when Capt. Cook viſited it in 1777, except by one man employed in catching fiſh and turtle. The trees and plants are ſimilar to thoſe of Lefooga, to which it is joined by a reef that is dry at low water; 30 miles N.N.E. of Annamooka. N. lat. 19° 52′. E. long. 185° 36′.

HOLAMIN, a ſmall iſland of Scotland, near the S.W. coaſt of Mull. N. lat. 59° 19′. W. long. 61° 21′.

HOLANDS, a town of Norway, in the dioceſe of Chriſtianſand; 8 miles S. of Stavanger.

HOLARRHENA, in *Botany*, from ὁλος, *entire*, or *ſolid*, and ἀῤῥην, *a male*; apparently alluding to the anthers being entirely filled with pollen, and unaccompanied by ſuperfluous appendages. Brown Apocin. (from Tr. of the Wernerian Soc. v. 1.) p. 51.—Claſs and order, *Pentandria Digynia*. Nat. Ord. *Contortæ*, Linn. *Apocineæ*, Juſſ. Brown.

Eſſ. Ch. Corolla ſalver-ſhaped, with equi-lateral ſegments; its orifice and tube deſtitute of ſcales. Stamens incloſed in the tube, and inſerted into its baſe; anthers unconnected with the ſtigma, lanceolate, entire, burſting lengthwiſe. Germens two; ſtyle very ſhort; ſtigma common, cylindrical. No ſcales at the baſe of the germens. Follicles ſlender.

This genus conſiſts of two ſpecies, natives of Ceylon or other parts of the Eaſt Indies. One of them is *Cariſſa mitis*, Vahl. Symb. faſc. 3. 44, ſo named originally by Koenig, from whom there is a ſpecimen in the Bankſian herbarium. They are upright ſmooth ſhrubs, with membranous *leaves*. The *flowers* grow in terminal and lateral cymes.

HOLBEACH, in *Geography*, is an ancient market-town, and pariſh in the wapentake of Elloe, Holland diviſion of Lincolnſhire, England. It is ſituated in the Fens; and very indifferently built. A grant of a weekly market and an annual fair was obtained from Henry III. by Thomas de Malton, lord Egremont, about the middle of the thirteenth century; when a ſtone croſs was erected in the market-place. The chief building in Holbeach is the church, which is a large handſome ſtructure; and conſiſts of a nave, chancel, aiſles, porch, and ſquare tower, with an octangular ornamental ſpire. The north porch has two circular towers, with embattled parapets, at its extreme angles. The church contains ſome fine monuments. An hoſpital was eſtabliſhed and endowed in this town by ſir John de Kirton, knt. about the year 1350, for the ſupport of a warden, chaplain, and fourteen penſioners. A free grammar-ſchool was alſo founded here about the ſame time by a licence from king Edward III., who granted certain lands for its ſupport. Another free-ſchool was eſtabliſhed here about the year 1670, by George Farmer, eſq. and the revenues for its ſupport have been much increaſed by ſubſequent donations and bequeſts. Holbeach is 106 miles diſtant from London, and contains 556 houſes, occupied by 2683 perſons. This town has derived ſome honour from two eminent natives; Henry de Rands, called, from the place of his birth, Holbech, who was biſhop of Lincoln in the reign of Edward VI.; and Dr. William Stukeley, whoſe name and memory are reſpected by every admirer of Engliſh antiquities.

The village of Gedney, a mile and half diſtant from Holbeach, is worthy notice for the lightneſs of its church, which has fifty-three windows; in thoſe of the north aiſle are conſiderable remains of fine painted glaſs. Beauties of England, vol. ix.

HOLBECK, a ſea-port town of Denmark, in the iſland of Zealand, ſituated in the gulf of Heſiord, with a good harbour, whence conſiderable quantities of corn are annually exported; 30 miles W. from Copenhagen. N. lat. 55° 42′. E. long. 11° 44′.

HOLBEIN, John, or Hans, in *Biography*. This admirable painter was born at Baſle in 1498, and inſtructed in the art by his father John Holbein. In the early part of his life he purſued his ſtudies with inceſſant aſſiduity; and being poſſeſſed of an elevated genius, his progreſs was exceedingly rapid, ſo that he ſoon became far ſuperior to his inſtructor. He excelled all his contemporaries in portrait; and in that ſtyle arrived at ſo high a degree of perfection, that Zucchero, who certainly was well qualified to judge of his merit, did not heſitate to compare his portraits with thoſe of Raphael and Titian.

He painted equally well in oil, water-colours, and diſtemper, in large and in miniature; but he had never practiſed the art of painting in miniature, till he reſided in England, and learned it from Lucas Cornelii; though he afterwards carried it to its higheſt perfection. His paintings of that kind have all the force of oil-colours, and are finiſhed with the utmoſt delicacy. In general he painted on a green ground; but in his ſmall pictures frequently he painted on a blue.

The invention of Holbein was ſurpriſingly fruitful, and often poetical; his execution was remarkably quick, and his application indefatigable. His pencil was exceedingly delicate; his colouring had a wonderful degree of force; he finiſhed his pictures with exquiſite neatneſs; and his carnations were life itſelf. His genuine works are always diſtinguiſhable by the true, round, lively imitation of fleſh, viſible in all his portraits, and alſo by the amazing delicacy of his finiſhing.

He viſited London at the requeſt of Eraſmus, who recommended him to ſir Thomas More; and ſir Thomas immediately employed him, ſhewed him every mark of reſpect and real friendſhip, entertained him at his own table, allowed him an apartment in his houſe, and detained him for three years. In which time he painted the portraits of his patron, and all the family of ſir Thomas; as alſo ſeveral portraits of his relations and friends, which were hung up in a grand hall. As ſoon as king Henry VIII. beheld thoſe performances, he was ſo ſtruck with their beauty, their life, and admirable likeneſs, that he took Holbein into his ſervice, and favoured him highly as long as he lived.

It is obſerved by moſt authors, that Holbein always painted with his left hand; though one modern writer objects againſt that tradition, (what he conſiders as a proof,) that in a portrait of Holbein painted by himſelf, which was in the Arundelian collection, he is repreſented holding the pencil in the right hand. But, with great deference to the opinion of that ingenious connoiſſeur, that evidence cannot be ſufficient to ſet aſide ſo general a teſtimony of the moſt authentic writers on this ſubject; becauſe, although habit and practice might enable him to handle the pencil familiarly with his left hand, yet, as it is ſo unuſual, it muſt have had but an unſeemly and aukward appearance in a picture; which probably might have been his real inducement for repreſenting himſelf without ſuch a particularity. Beſides, the writer of Holbein's life, at the end of the treatiſe by De Piles, mentions a print by Hollar, ſtill extant, which deſcribes Holbein drawing with his left hand. Nor is it ſo extraordinary or incredible a circumſtance; for other artiſts, mentioned in this volume, are remarked for the very ſame habit; particularly Mozzo of Antwerp, who worked with the left; and Amico Aſpertino, as well as Ludovico Cangiagio, who worked equally well with both hands.

The genius and excellence of this maſter were ſufficiently ſhewn in the hiſtorical ſtyle, by two celebrated compoſitions which he painted in the hall of the Steel-yard company; and they were univerſally admired for the richneſs of the colouring, as alſo for the ſtrong character in the figures through the whole. Zucchero, on ſeeing thoſe pictures, expreſſed the higheſt eſteem for Holbein, and even copied them in Indian ink.

Holbein undoubtedly had many excellencies, which procured him, very deſervedly, the admiration of all Europe; but to equal him in portrait with Raphael and Titian, as Zucchero did, or to place him on an equality with the beſt of Raphael's diſciples in compoſition, as Abbé du Bos has done, ſeems to be not altogether juſtifiable; for, notwithſtanding the abundant merit of this maſter in many reſpects, it cannot be denied that the German taſte predominates through moſt, if not all, of his compoſitions.

It is indeed to be lamented, that ſuch a number of pictures are poſitively aſſerted to be of the hand of Holbein, which are a diſhonour to his pencil; but any judicious perſon, who hath obſerved one genuine picture, will not eaſily be impoſed on.

In the Florentine collection are the portraits of Holbein, Luther, ſir Thomas More, and Richard Southwell, all painted by this maſter; and in the cabinet of the king of France, beſides ſeveral portraits, there is an hiſtorical ſubject by Holbein, repreſenting the "Sacrifice of Abraham," which is accounted a fine performance. He died in 1554, aged 56.

HOLBORNE Isle, in *Geography*, a ſmall iſland near the N.E. coaſt of New Holland; 20 miles N.W. of cape Glouceſter.

HOLBERG, Louis, *Baron Von*, in *Biography*, a celebrated Daniſh writer, was born at Bergen, in Norway, about the year 1685. Owing to the early death of his parents, who had brought up a numerous family very reſpectably, he firſt went into the army, and then diſcovering an attachment to learning, he was put under the care of a private tutor by a near relation. The ſtraightneſs of his own, and likewiſe of his friends' circumſtances, was the cauſe of the many viciſſitudes which he experienced before he had attained to man's eſtate. At length he completed his ſtudies at Copenhagen, and then returned to his native place, where he became private tutor in the family of the ſuffragan of the biſhop of Bergen. His temper was ill adapted to the ſituation, and in a few weeks he collected what money he was able to procure and ſet off for Holland. His reſources were ſoon exhauſted, and he was glad to return, directing his courſe to Chriſtianſand, where he obtained a living by teaching the languages. After this he went to England; and at Oxford his ſkill in muſic and the learned tongues obtained for him many pupils. His love of change had hitherto kept him in a ſtate of poverty, and though he had many good offers, ſome of which he accepted, yet he never ſtaid long enough in one place to benefit by them. He dedicated his "Introduction to the Modern Hiſtory of France" to Frederic IV. which procured for him the place of an extraordinary profeſſor at Copenhagen, which he had a very ſhort time, when he travelled, by the way of the Netherlands, into France. After a conſiderable ſtay at Paris he went to Rome, where he ſpent a winter, and then returned to the French capital by way of Florence, Bologna, Turin, and Lyons. He next went to Copenhagen, where he publiſhed, in the Daniſh language, "An Introduction to the Law of Nature and Nations." After this he obtained an appointment which raiſed him above poverty, being made profeſſor of metaphyſics, though, according to his own account of the matter, it was one of the ſubjects with which he was leaſt acquainted. This promotion was followed by a place in the conſiſtory, which gave him a higher rank, and made a farther addition to his income. His reputation as a writer being eſtabliſhed, he frequently appeared before the world as an author, and in 1735 he became rector of the univerſity of Copenhagen, and in two years after he was entruſted with the management of its finances. While at the head of the univerſity, he exerted himſelf to promote the intereſts of learning, and gave prizes to thoſe ſtudents who excelled in the different branches of literature. He was a ſucceſsful author, and obtaining much property by his literary labours, he purchaſed an eſtate in Iceland, and at his death, which happened in 1754, he bequeathed a large ſum of money to the academy of Soroe in Iceland, for the purpoſe of educating young nobility, on which account his memory has been celebrated by an annual oration. He ſettled alſo 16,000 dollars, the intereſt of which was to be employed in providing eſtabliſhments for young women at Copenhagen. Holberg poſſeſſed a ſtrong turn for ſatire and ridicule, of which he gave an admirable ſpecimen in "Klimm's Subterranean Travels, containing a new Theory of the Earth, with a Deſcription of the Fifth Monarchy, which hitherto has been totally unknown." This work has gone through many editions, and been tranſlated into different languages. It is thus deſcribed by one of the tranſlators: "Holberg's acuteneſs in diſcovering the imperfections of moſt governments, the inſtructive manner in which he criticiſes, and which evidently diſplay a philoſophical mind and depth of judgment; his accurate ſpirit of obſervation; his lively ridicule which, for the moſt part, is under the veil of philanthropy and naiveté, together with the elegance of the ſtyle, not only obtained a favourable reception to this work on its firſt appearance, but will ſecure it for ages. On account of the romantic event it records, it may be claſſed with Lucian's "True Hiſtory," or "Gulliver's Travels;" but it exceeds both in variety of matter, as well as in delicacy of ſatire. Lucian only laughs, and Swift is too bitter, whereas Holberg ſteers a middle courſe between both." In his country baron Holberg is principally known by his "Introduction to Univerſal Hiſtory," which was tranſlated many years ſince by Dr. Gregory Sharpe; and a new edition of this work was given to the public in 1787, by William Radcliffe, A.B. Of the baron Dr. Sharpe ſays, "he was author of many works in proſe and verſe, almoſt all of them written in the Daniſh language. He wrote 25 plays, a metamorphoſis, the reverſe of Ovid's, relating the change of flowers, trees, and animals into men; he was the author of ſeveral ſatires in verſe; of the entertaining voyage under ground of Klimms, in Latin, called *Iter Subterraneum;* of ſome epigrams; of his own life; of an excellent eccleſiaſtical hiſtory; another of the Danes, and one of the Jews, with ſeveral moral, hiſtorical, and other pieces; and he was always infirm and ſtudious, had travelled much, and loved and imitated the manners of the Engliſh." See Dr. Sharpe's preface to the Introduction to Univerſal Hiſtory.

HOLBOURN Head, in *Geography*, a cape of Scotland, on the N. coaſt of the county of Caithneſs. N. lat. 58 39'. W. long. 3 20'.

HOLCE, 'Ολκη, a word uſed by ſome of the Greek authors, as the name of a dram weight; and by others, as Dioſcorides, &c. to ſignify a weight in general.

HOLCOMBE, Henry, in *Biography*, was a choriſter in the cathedral of Saliſbury, and having a very fine treble voice, was ſent for up to London, to perform in the firſt attempts at operas on the Italian model. In "Camilla," he performed the part of Preneſto; and being very young at that time, is called, in the printed copy of the muſic, *the boy*. In Roſamond, he performed the part of the page, under the ſame title. His voice breaking, he ſoon after quitted the ſtage, and became a muſic-maſter. He had many ſcholars, particularly in ſinging; for which, from conſtantly frequenting the opera, after he had ceaſed to perform there, and hearing all the great ſingers from Valentini and Nicolini, to Seneſino and Farinelli, he muſt have been well qualified, and we have been aſſured by very good judges, who had often heard him ſing in private, that his taſte was perfectly Italian.

One ſong only of his compoſition, "Happy hours, all hours excelling," is printed in the Muſical Miſcellany.

But his elegant ballad of "Arno's Vale," written on the death of Gaſton, the laſt duke of Tuſcany, of the houſe of Medici, by Charles earl of Middleſex, afterwards duke of Dorſet, and addreſſed to his favourite, the Muſcovita, a ſinger, was afterwards in great favour, and printed in a collection of twelve ſongs ſet by Holcombe, and publiſhed a ſhort time before his death, which happened about the year 1750.

HOLCUS, in *Botany*, a name in Pliny, ὁλκος of the Greeks, and by the ancients underſtood as a kind of wild barley, with awns, growing in dry ſtony places. Profeſſor Martyn deduces it from ὁλκος, *a furrow*, but we do not find this etymology, nor any other that has fallen in our way, ſatisfactory. The name, as applied by Linnæus, embraces a heterogeneous aſſemblage, in which is the *Sorghum* of the ancients; but ſome ſpecies have of late been removed from it; (ſee HIEROCHLOE.) Mr. Brown, in his Prodr. Nov. Holl., wiſhes to confine the genus nearly to that peculiar tribe to which the *Sorghum* belongs, and which is well illuſtrated by Mieg in the *Acta Helvetica*, v. 8. 114. t. 8, this laſt-named author expreſſing a deſire that ſuch might be ſeparated, under the name of *Sorghum*, as a diſtinct genus from the *Holcus* of Linnæus. To this we gladly aſſent, and then perhaps our Engliſh ſpecies, *mollis*, *lanatus*, and *avenaceus*, may ſerve as the baſis of *Holcus*, for we cannot agree with Haller and Mieg to refer the two firſt, any more than the laſt, to *Avena*. In purſuance of this plan, we ſhall for the preſent put aſide *Sorghum*, for the conſideration of ourſelves or our ſucceſſors in its proper place. The following therefore will be the characters and ſynonyms of our *Holcus*.—Sm. Fl. Brit. 88. Engl. Bot. t. 1169, 1170, 813. Schrad. Germ. v. 1. 247, ſection 1. Leers t. 7. f. 6, 7.—Claſs and order, *Triandria Digynia*. Nat. Ord. *Gramina*.

Gen. Ch. *Cal.* Glume of two valves, erect, beardleſs, ovate, containing two florets; one of them elevated on a ſtalk. *Cor.* of two valves; the lower or outer one largeſt, awned at the back in the leaſt perfect floret. Nectary a cloven membranous ſcale. *Stam.* Filaments three in each floret, capillary, rather ſhort; anthers long, linear, cloven at each end. *Piſt.* Germen ovate; ſtyles two, capillary, diverging; ſtigmas oblong, feathery. One floret has either no piſtil, or only an imperfect one. *Peric.* none, except the permanent glumes. *Seed* ſolitary, ovate, attached to the hardened corolla.

Eſſ. Ch. Calyx of two valves, two-flowered; one floret with an imperfect germen. Corolla of two valves; the outer one awned.

1. H. *lanatus*. Meadow Soft-graſs. Linn. Sp. Pl. 1485. Curt. Lond. faſc. 4. t. 11. Schreb. Gram. 145. t. 20. f. 1. Sm. Engl. Bot. t. 1169. Knapp. t. 37. Leers. 219. t. 7. f. 6. (Gramen pratenſe paniculatum molle; Scheuchz. Agroſt. 234. t. 4. f. 24, A, B.)—Calyx-glumes woolly. Lower floret beardleſs; upper with an arched recurved awn. Leaves downy on both ſides.—Abundant in meadows and paſtures throughout Europe, eſpecially where the ground is ſandy, flowering in June and July. The *roots* are perennial, fibrous, tufted, not creeping. *Stems* ſeveral, a foot or two in height, ſimple, erect, leafy, jointed, clothed with ſoft, deflexed, denſe hairs. *Leaves* flat, acute, greyiſh, clothed on both ſides, but eſpecially beneath, with ſimilar pubeſcence; the ſheaths of the uppermoſt longeſt and ſwelling. *Stipula* ſhort and blunt. *Panicle* erect, compound, denſe, downy, hoary, moſtly with a purpliſh tinge; its ultimate ſtalks capillary. *Calyx-valves* nearly equal in length, the innermoſt broadeſt. *Florets* not riſing above the calyx; the upper one ſcarcely ever having any piſtil. Its outer glume is blunt, terminating in a ſmall awn, which, when the flowers are arrived at full maturity, is recurved in an arched manner, and is well compared by Scheuchzer to a fiſhing hook. This graſs is mown for hay, along with any others that happen to grow with it, but has not been recommended for particular cultivation.

2. H. *mollis*. Creeping Soft-graſs.—Linn. Sp. Pl. 1485. Curt. Lond. faſc. 5. t. 8. Schreb. Gram. 149. t. 20. f. 2. Sm. Engl. Bot. t. 1170. Knapp. t. 38. Leers. 218. t. 7. f. 7. (Gramen caninum paniculatum molle; Scheuchz. Agroſt. 235. t. 4. f. 25.)—Calyx-glumes partly naked. Lower floret beardleſs; upper with a ſharply-bent awn. Root creeping.—Native of ſhady copſes and hedges, but much leſs frequent than the former, from which it is diſtinguiſhed by its creeping *root*, and the acute angle formed by the awn of the male floret when ripe and dry. It is moreover a more ſlender and leſs downy graſs, with a ſmaller *panicle*, but larger *flowers*, and more prominent awns. It bloſſoms in July, and is conſidered of no value to the huſbandman, but rather noxious, as a kind of couch-graſs. The widely-ſpreading roots are, indeed, in ſome ſituations, difficult of extirpation, but they do not thrive in open land.

3. H. *avenaceus*. Oat-like Soft-graſs. Wiggers. Holſat. 72. Sm. Fl. Brit. 90. Engl. Bot. t. 813. Knapp. t. 39. Schrad. Germ. v. 1. 247. (Avena elatior; Linn. Sp. Pl. 117. Curt. Lond. faſc. 3. t. 6. Mart. Ruſt. t. 7. Leers. 40. t. 10. f. 4.)—Calyx-glumes unequal, ſmooth. Male floret loweſt, with a bent awn. Root knotty.—Common in paſtures, meadows, and waſte ground, flowering in June and July. *Root* perennial, of two knots, or ſwollen joints, one above the other. *Stems* a yard high. *Leaves* darkiſh green, rough and rather harſh. *Stipulæ* ſhort, abrupt, minutely toothed. *Panicle* half-whorled, the branches conſequently leaning one way. *Flowers* much larger than the two preceding, ſcarioſe, ſhining, not downy. *Anthers* pendulous, purple. The male *floret* has the rudiments of a germen, and is loweſt in this ſpecies, always conſpicuouſly awned; the other is but ſlightly elevated. No uſe is made of this graſs.

Schrader makes a ſpecies, under the name of *H. bulboſus*, of what we conſider as a variety of this, growing in cultivated fields, and thence, if we miſtake not, acquiring rather more bulbs, and downy joints to the ſtem, both circumſtances originating probably from a more expoſed and dry ſtation than is natural to it. Gramen bulboſum nodoſum, Lobel. Ic. v. 1. 23, is conſidered as a repreſentation of this.

H. *laxus* of Linnæus, by his character of the florets, ſhould ſeem to belong to this genus, but its racemoſe habit is very diſſimilar, and the flowers require to be examined by thoſe who have acceſs to them alive. It grows in North America, and has the habit, but not the character, of Michaux's *Feſtuca diandra*, Boreal. Amer. v. 1. 67. t. 10.

H. *ſtriatus*, Linn. is the very ſame thing as his *Panicum curvatum*.

H. *ſerratus*, Linn. Suppl. 433, found at the Cape by Thunberg, is probably of ſome other genus, poſſibly a *Sorghum*. Its ſtrongly ſerrated *leaves* are extremely peculiar.

H. *latifolius*, Linn. Sp. Pl. 1486, is alſo Cenchrus lappaceus of the ſame work, two pages forward. This is an Eaſt Indian graſs, with three or four ſingularly barbed florets in each calyx, quite unlike a genuine *Holcus*, but we cannot inveſtigate its flowers, ſo as to decide, with any certainty, concerning its true genus.

Holcus, in *Agriculture*, the name by which a genus of graſſes is known; but few of the ſpecies of which are found uſeful to the farmer. It ſignifies ſoft graſs.

Holcus *lanatus*, the meadow ſoft graſs, which is ſuppoſed, by Mr. Curtis, to be a very common graſs in all meadows and paſtures, as well as in waſte grounds and woods newly cut down, and which is alſo hardy, as well as productive of foliage, flowering a month later than the *anthoxanthum*, and when its red panicle appears, it is conſidered by the farmers that their graſſes are ready for the ſcythe. Its foliage is ſoft and woolly, which, if not diſliked by cattle on that account, may, it is ſuppoſed, rank with ſome of the beſt graſſes; if it were more curly, it would, however, be more valuable. It is not, however, thought ſo well of by Mr. Sole; as from its particular ſoftneſs, he cannot conceive it excellent either as a paſture or hay graſs. It is the graſs which is uſually known to farmers in this country by the name of Yorkſhire-white.

Holcus *mollis*, the name by which the creeping ſoft graſs is known. It has been ſuggeſted by Mr. Curtis in his "Tract on Graſſes," that he is induced to think better of it now, than when he figured and deſcribed it in his "Flora Londinenſis," having found that it will grow well in a ſandy ſoil, and bear the drought of ſummer, better than moſt others. And it is added that captain Dorſet is of opinion that it may even be cultivated to advantage in ſoils of the barren ſandy kind.

HOLD, in the *Manege*. See Retain.

Hold, in *Rural Economy*, a term applied to female animals, which after being covered or connected with the males, without miſcarrying, are ſaid to hold.

Hold, *of a ſhip*, the loweſt part of the ſhip, including all that part of her inſide lying between the floor and the lower deck, through her whole length.

The hold is the ſtore-room in a merchant ſhip, or the place wherein the goods, at leaſt all the heavier and more cumberſome, are ſtowed: the reſt are diſpoſed between the two decks; at leaſt in Dutch ſhips, which have their holds very ſhallow, and the ſpace between the decks very high. The hold contains the ballaſt, proviſions, and ſtores, of a ſhip of war. The ſeveral ſtore-rooms are ſeparated by bulk heads, and are denominated according to the ſeveral articles they contain, the ſail-room, the bread-room, the fiſh-room, the ſpirit-room, &c.

To find the burden of a ſhip, the hold is to be meaſured.

Hold, in *Sea Language*, is underſtood to ſignify a particular ſituation with regard to the ſhore, by which ſhe is enabled to keep within a ſufficient diſtance, to facilitate her courſe, or anſwer ſome other important object. *Keep a good hold of the land*, implies to keep near, or in ſight of the land.

Hold, *after*, denotes that part of the hold which lies abaft the main-maſt.

Hold, *fore*, is that part of the hold which is ſituated in the fore-part of the ſhip, or before the main hatchway.

Hold *its own*, at *Sea*. A ſhip is ſaid to hold its own, that keeps her courſe right forward.

Hold, *to rummage the*, is to remove and clear the goods and things therein.

Hold, *predy the*, in the *Sea Language*. See Predy.

Hold, *to trim the*. See Trim.

Hold, *ſtowing the*, a ſea-phraſe for taking goods into the hold. See Stowage.

Hold, in *Muſic*, is a mark, like an arch, with a point in the middle of it, placed over ſome ſingle notes, which has been uſed to ſignify that ſuch note is to be made longer than ordinary; but it now more commonly denotes that the ſong ends there, and is only uſed when the ſong ends with a repetition of the firſt ſtrain, or part of it.

HOLDE, in our *Old Law Books*, is uſed for the bailiff of a city or town: and ſometimes for a general.

Holden, in *Geography*, a townſhip of America, in Worceſter county, Maſſachuſetts, ſeven miles N. of Worceſter, and 51 W. of Boſton; containing 1142 inhabitants.

Holden, John, in *Biography*, author of an excellent eſſay towards a rational ſyſtem of muſic.

We are unable to give a biographical account of this ingenious author; but his work, which was publiſhed at Glaſgow, in long quarto, half bound, in 1770, ſeems to have been much leſs noticed by the public than it deſerves. Its principles are good, and explained in clear and correct language. Without diſcovering a marked partiality for ancient or modern muſic, or an excluſive predilection for the productions of any particular country or individual, he has endeavoured, and we think with conſiderable ſucceſs, to explain the materials with which good compoſitions are built; and, without pedantry or fantaſtical innovations, has ranged through the wide extended regions of the art. We will not ſay that this little treatiſe (in ſize) renders all other books on the ſubject unneceſſary, or that the author has left nothing for ſubſequent writers to do. No; all we mean to ſay is, that what he *has* done, is *well* done; but if his work had been much more voluminous than it is, much muſt have been left for ingenious, intelligent, and ſpeculative writers to ſay on the ſubject, and during the lapſe of more than 30 years, ſince this book appeared, ſuch a rapid progreſs has been made in the theory and practice of the art, that Mr. Holden, if ſtill an inhabitant of earth, might fill a ſecond volume of his work by deſcribing, the new paſſages and effects in the works of Haydn and Mozart alone, that have delighted the lovers of muſic, ſince the publication of his firſt volume.

The author, in Part I., has treated with clearneſs and ingenuity the following ſubjects:

Of the natural ſcale, 26 ſections.
Application of the ſcale, 9 do.
Of the modern ſyſtem of muſic, 22 do.
Of time, 45 do.
Miſcellaneous explanations, 15 do.
Harmonical conſonances, 26 do.
Of diſſonances.
Of fundamental progreſſions.
Of the flat ſeries.
Of chromatic.
Of plain diſcant.
Figurative melody.

Part II.

Of the theory of muſic (ſound).
Single muſical ſounds.
Of muſical ſounds in ſucceſſion.
Of harmonical arithmetic (ratios).
Of combined ſounds.

This author is no ſervile follower of any preceding writer: his precepts ſeem to ariſe from experience and reflection.

His calling the pauſe and final mark, N 101, a *hold*, is not a term in uſe at preſent. The Italian term for it is *corona*, or crown. It is, ſometimes, colloquially called in England a *bull's eye;* but it is vulgar ⊙ 𝄑

Indeed, in theſe chapters we have a muſical dictionary, or technica: rules for thorough baſe: harmonics, and many other things, which the titles of the chapters do not promiſe.

There is in this work no parade of great reading, or knowledge of languages; yet we perceive that the author is not unacquainted with Zarlino, Rameau, d'Alembert, Rouſſeau, and Serre of Geneva.

In the plate facing p. 76, he calls C, with a $^{6}_{5}$ in the key of G, a fundamental baſe; but the fundamental baſe to that chord as 4th of the key, is A with a 7th, and the author ſeems to be not perfectly familiariſed to Rameau's *baſſe fondamentale*.

The plate facing p. 100, is a bad ſpecimen of his abilities in compoſition. The repeating the ſame harmony to the firſt note of a new bar, as had been given to the laſt note of the preceding bar, will always be found inſipid, and what is conſtantly avoided by contrapuntiſts of the firſt claſs.

He gives us inſtances of his harmony, but none of his melody; except ſuch as are pſalmodic.

But melody is very hard to teach. Keeping good company, that is, frequently hearing good muſic, forms the taſte, and ſtimulates invention. A man that hears nothing but pſalmody and national tunes, will never produce graceful and elegant melody, or great effects in harmony.

Holden's *Temperament of the Muſical Scale.* In Mr. John Holden's "Eſſay towards a Rational Syſtem of Muſic," he recommends a ſyſtem of tuning common-keyed inſtruments, in which the ſeries of eight 5ths C, G, D, A, E, B ※ F, ※ C and ※ G upwards are each flattened $\frac{1}{7}$th of a major comma, and the three 5ths *c*, F, ♭ B, and ♭ E downwards, are alſo flattened $\frac{1}{5}$ *c*, leaving a wolf or bearing 5th between ※ G and ♭ E. Mr. Farey, in the 5th Scholium to his Muſical Theorems, in the Phil. Mag. vol. xxxvi. p. 46, ſhews, that in this regular douzeave, the fifths are as much tempered flat as the major thirds are ſharp (not *flat* as printed), and whence we obtain the fifth's temperament = 2.20157 Σ flat, the Vth wolf = 12.20944 Σ, the IIId temperaments 2.20157 Σ ſharp, the IIId wolves = 16.61258 ſharp, the VIth temperaments = 4.40314 Σ ſharp, and the VIth wolves = 18.81316 Σ ſharp. Only three of the fifths, *viz.* between C ※, G ※, ♭ E, and ♭ B in this ſyſtem, differ from thoſe in Mr. **Hawke's** *Douzeave Syſtem*, ſee that article.

At pages 338 and 364 of the work above quoted, Mr. Holden, proceeding on the miſtaken principles to which we have adverted in our article **Grave** *Harmonics*, gives an aſcending and a deſcending ſcale of intervals, which, when combined and reduced to one fundamental, ſtand as follows; *viz.*

		Σ	*f*	*m*			Σ	*f*	*m*
c	$\frac{1}{2}$	612	+ 12	+ 53	※ F	$\frac{7}{10}$	314.9472	+ 6	+ 27
	$\frac{32}{63}$	598.0528	+ 12	+ 52		$\frac{32}{45}$	301	+ 6	+ 26
B	$\frac{21}{40}$	568.9472	+ 11	+ 49	F	$\frac{3}{4}$	254	+ 5	+ 22
	$\frac{8}{15}$	555	+ 11	+ 48		$\frac{16}{21}$	240.0528	+ 5	+ 21
♭ B	$\frac{4}{7}$	494.0528	+ 10	+ 43	E	$\frac{7}{6}$	221.9472	+ 4	+ 19
A	$\frac{7}{12}$	475.9472	+ 9	+ 41		$\frac{64}{81}$	208	+ 4	+ 18
	$\frac{16}{27}$	462	+ 9	+ 40		$\frac{4}{5}$	197	+ 4	+ 17
	$\frac{3}{5}$	451	+ 9	+ 39	♭ E	$\frac{21}{25}$	153.9472	+ 3	+ 13
※ G	$\frac{63}{100}$	407.9472	+ 8	+ 35		$\frac{64}{75}$	140	+ 3	+ 12
	$\frac{16}{25}$	394	+ 8	+ 34	D	$\frac{7}{8}$	117.9472	+ 2	+ 10
G	$\frac{21}{32}$	371.9472	+ 7	+ 32		$\frac{8}{9}$	104	+ 2	+ 9
	$\frac{2}{3}$	358	+ 7	+ 31	※ C	$\frac{24}{25}$	36	+ 1	+ 3
					C	$\frac{1}{1}$			

By the decimal fractions of ſchiſmas (Σ) in the third column, it will appear, which of theſe ratios involve the number 7, which does not belong to the diatonic ſyſtem, amounting to nearly one-half of the whole number of notes, with which this fanciful ſyſtem is encumbered.

HOLDER, **William**, in *Biography*, doctor of divinity, canon of Ely, reſidentiary of St. Paul's, and ſub-dean of the Chapel Royal, not only merits particular notice as an able and learned writer on the theory of muſic, but as an eccleſiaſtical compoſer of anthems, of which three or four are preſerved in Dr. Tudway's collection, Britiſh Muſeum. From the regularity and unembarraſſed arrangement of the ſeveral parts in theſe ſpecimens of his compoſition, it is eaſy to diſcover, that he had not ſtudied and practiſed counterpoint in the ſuperficial manner of an idle dilettante, but with the application of a diligent profeſſor.

Beſides his eminence as a divine, and deep knowledge in muſic, he diſtinguiſhed himſelf as a philoſopher, a mathematician, and a philologer. He was one of the firſt fellows of the Royal Society, and in treating ſeveral curious ſubjects, nice ſelection and application of words manifeſt him to have been a conſummate maſter of our language. Indeed, the ſtrength, preciſion, clearneſs, and compreſſion of his ſtyle have been hardly ever equalled by any writer on philoſophical ſubjects in our country; particularly in his admirable treatiſe on the "Elements of Speech," publiſhed 1669, and drawn up with the benevolent deſign of giving relief to a perſon that was deaf and dumb. In this eſſay he has analyſed, diſſected, and claſſed the letters of our alphabet ſo minutely and clearly, that it is well worthy the attentive peruſal of every lover of philology, but particularly of lyric poets and compoſers of vocal muſic; to whom it will point out ſuch harſh and untunable combinations of letters and ſyllables as from their difficult utterance impede and corrupt the voice in its paſſage.

In 1694, Dr. Holder publiſhed "A Diſcourſe concerning Time," in which, among other things, the deficiency of the Julian Calendar was explained, and the method of reforming it demonſtrated, which was afterwards adopted in the change of ſtyle. It is to be lamented that in treating this ſubject with ſo much clearneſs and ability, ſo good a muſician did not extend his reflections on the artificial parts of time, to its diviſions and proportions in muſical meaſures; a ſubject upon which the abbate Sacchi has written in Italian, "Del Tempo nella Muſica;" but which rhythmically, or metrically conſidered in common with poetry, has not yet been ſufficiently diſcuſſed in our own language.

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HOLISTHEMA, in *Surgery*, a diſlocation.

HOLITZ, in *Geography*, a town of Hungary; 32 miles W.N.W. of Topoltzen.—Alſo, a town of Bohemia, in the circle of Chrudim; 10 miles N. E. of Chrudim.

HOLKABERG, a town of Sweden, in Eaſt Gothland; 35 miles S.W. of Linkioping.

HOLL, a word which is provincially employed to ſignify the hollow of a ditch, in contradiſtinction to the dick or bank of it.

HOLLAND, Philemon, in *Biography*, was born at Chelmsford, in Eſſex, about the year 1551; and after receiving the rudiments of learning at the grammar-ſchool of that place, was ſent to Trinity college, Cambridge, of which he became fellow, and left the univerſity after having taken the degree of M. A. He was appointed head maſter of the free-ſchool of Coventry, where he had ſettled; and in this laborious ſtation he not only attended aſſiduouſly to the duties of his office, but ſerved the intereſts of learning, by undertaking thoſe numerous tranſlations, which gained him the title of *Tranſlator general of the age.* But, as if theſe occupations were inſufficient for the employment of his time, he likewiſe turned his ſtudies to medicine, and practiſed in that profeſſion with conſiderable reputation in his neighbourhood; and at length, rather late in life, he became a doctor of phyſic, in the univerſity of Cambridge. He was an amiable man in all the relations of private life, and by his habits of temperance and regularity attained his 85th year, not only with the full poſſeſſion of his intellects, but with his ſight ſo good, notwithſtanding his inceſſant uſe of it, that he never had occaſion to wear ſpectacles. He continued to tranſlate till his 80th year; and his tranſlations, though devoid of elegance, are accounted faithful and accurate; and afford a memorable proof, how much a ſingle man may perform, if his whole time be employed to advantage. He tranſlated into Engliſh "Livy," "Pliny's Natural Hiſtory," "Plutarch's Morals," "Suetonius," "Ammianus Marcellinus," "Zenophon's Cyropædia," and "Camden's Britannia," to the laſt of which he made ſeveral uſeful additions: and into Latin he tranſlated the geographical part of "Speed's Theatre of Great Britain," and a French "Pharmacopœia of Brice Banderon." A quibbling epigram upon his tranſlation of Suetonius has often been retailed in jeſt books.

"Philemon with tranſlations ſo does fill us,
He will not let *Suetonius* be *Tranquillus.*"

See Aikin Biog. Mem. of Medicine.

Holland, in *Commerce*, a fine, white, even, cloſe kind of linen cloth, chiefly uſed for ſhirts, ſheets, &c.

It is principally wrought in the provinces of Holland, Friſeland, and other parts of the United Provinces; whence the appellation.

The principal mart or ſtaple of this cloth is at Haerlem, whither it is ſent from moſt other parts, as ſoon as wove, there to be whitened in the enſuing ſpring.

That manufactured in Friſeland is the moſt eſteemed, and called Friſe Holland. It is the ſtrongeſt and the beſt coloured of any of that fineneſs: it is never calendered, nor thickened, as the reſt; but it is imported juſt as it comes from the whitſter: it is diſtinguiſhed by its being yard quarter and half wide; which is half a quarter more than thoſe commonly called Friſe Hollands, which are not right.

Holland, *gulix*, is very white and fine, and is chiefly uſed for ſhirts, being the ſtrongeſt of any for its fineneſs, except true Friſe. It is juſt yard wide.

Holland, *Alcmaer*, is a very ſtrong cloth, and wears exceeding well. It is about yard quarter and half wide.

Holland, in *Geography*, an appellation applied to the Seven United Provinces collectively, *viz.* Guelderland, Holland, Zealand, Utrecht, Overyſſel, Groningen, and Frieſland (which ſee), but primarily belonging to the chief of them. This country, once a celebrated republic, derives its name from the German word "Hohl," ſynonymous with the Engliſh term hollow, and denoting a concave or very low country. The people are called Dutch, from the German "Deutſch," or "Teutſch;" but "Deutſchland" properly ſignifies the vaſt extent of Germany itſelf, though by the Engliſh reſtricted to a ſmall portion, uſing a dialect of the German language. Theſe provinces extend from the north of Groningen to the ſouthern boundary along Auſtrian Flanders and Brabant, about 150 Britiſh miles; and in breadth, from the North ſea to the kingdom of Weſtphalia, about 100 Britiſh miles. Their content, in ſquare miles, is eſtimated at 10,000. They form a kind of peninſula, which is divided into N. and S. Holland; the former including all to the N. of Amſterdam, and the latter extending from the ſtates of Zealand and Brabant to the river Ye. The population has been recently computed at 2,758,632, which, allowing the extent of territory in ſquare miles to be 10,000, will give 275 for each ſquare mile. After the diſmemberment the French accounts ſtate the population at 1,881,881. That of Holland, the chief province, has been calculated at 980,000. The country is low and marſhy; ſome part of it being lower than the ſea, from the inundation of which it is ſecured by dykes or dams; and the meadows, which are covered with water in the winter, are freed from it by means of mills, that are contrived for diſcharging it into the ditches and canals. Without theſe ditches and canals, ſerving as drains to the country, the ſoil would in moſt parts be incapable of cultivation. Among the marſhes that deform the general face of the country, the traveller obſerves numerous and important cities and towns with admiration, and not without very honourable ideas of the aſtoniſhing powers of active induſtry, which have formed a habitable and enviable abode amidſt the greateſt natural diſadvantages. The marſhes, moraſſes, and heaths, which are characteriſtic of the different provinces, are however intermixed with groves, gardens, and meadows. Though the general aſpect of the country preſents an intimate combination of land and water, with few hills and woods, but rather of time, to its diviſions and proportions in muſical meaſures; a ſubject upon which the abbate Sacchi has written in Italian, "Del Tempo nella Muſica;" but which rhythmically, or metrically conſidered in common with poetry, has not yet been ſufficiently diſcuſſed in our own language.

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HOLINGSHED, Ralph, in *Biography*, an Engliſh chronicler, deſcended from a family ſettled at Boſely in Cheſhire, was educated at Cambridge, where he is ſaid to have taken his degree of M. A. in 1544. He lived in ſome capacity, probably as ſteward, with Thomas Burdett, eſq., of Bromcote in Warwickſhire, at which place he died about the year 1580. Holingſhed has given name to a compilation of Engliſh hiſtory from the earlieſt periods, of which the firſt edition was publiſhed at London in 1577, in two volumes folio. The ſecond edition was publiſhed ten years after, and brought down the hiſtory to the preceding year. Holingſhed was employed by Reginald Wolfe, printer to the queen; and he was aſſiſted by ſeveral other perſons, and upon his death it was continued by John Stowe. Very conſiderable retrenchments from the firſt edition were made in the ſecond and third, of thoſe parts which were not agreeable to Elizabeth and her miniſters, by order of the privy council. Amidſt the tediouſneſs and vulgarity of theſe chronicles many facts are to be found, highly uſeful in elucidating the manners and cuſtoms of the more early periods. Biog. Brit.

HOLISTHEMA, in *Surgery*, a diſlocation.

HOLITZ, in *Geography*, a town of Hungary; 32 miles W.N.W. of Topoltzen.—Alſo, a town of Bohemia, in the circle of Chrudim; 10 miles N. E. of Chrudim.

HOLKABERG, a town of Sweden, in Eaſt Gothland; 35 miles S.W. of Linkioping.

HOLL, a word which is provincially employed to ſignify the hollow of a ditch, in contradiſtinction to the dick or bank of it.

HOLLAND, Philemon, in *Biography*, was born at Chelmsford, in Eſſex, about the year 1551; and after receiving the rudiments of learning at the grammar-ſchool of that place, was ſent to Trinity college, Cambridge, of which he became fellow, and left the univerſity after having taken the degree of M. A. He was appointed head maſter of the free-ſchool of Coventry, where he had ſettled; and in this laborious ſtation he not only attended aſſiduouſly to the duties of his office, but ſerved the intereſts of learning, by undertaking thoſe numerous tranſlations, which gained him the title of *Tranſlator general of the age*. But, as if theſe occupations were inſufficient for the employment of his time, he likewiſe turned his ſtudies to medicine, and practiſed in that profeſſion with conſiderable reputation in his neighbourhood; and at length, rather late in life, he became a doctor of phyſic, in the univerſity of Cambridge. He was an amiable man in all the relations of private life, and by his habits of temperance and regularity attained his 85th year, not only with the full poſſeſſion of his intellects, but with his ſight ſo good, notwithſtanding his inceſſant uſe of it, that he never had occaſion to wear ſpectacles. He continued to tranſlate till his 80th year; and his tranſlations, though devoid of elegance, are accounted faithful and accurate; and afford a memorable proof, how much a ſingle man may perform, if his whole time be employed to advantage. He tranſlated into Engliſh "Livy," "Pliny's Natural Hiſtory," "Plutarch's Morals," "Suetonius," "Ammianus Marcellinus," "Zenophon's Cyropædia," and "Camden's Britannia," to the laſt of which he made ſeveral uſeful additions: and into Latin he tranſlated the geographical part of "Speed's Theatre of Great Britain," and a French "Pharmacopœia of Brice Bauderon." A quibbling epigram upon his tranſlation of Suetonius has often been retailed in jeſt books.

"Philemon with tranſlations ſo does fill us,
He will not let *Suetonius* be *Tranquillus*."

See Aikin Biog. Mem. of Medicine.

Holland, in *Commerce*, a fine, white, even, cloſe kind of linen cloth, chiefly uſed for ſhirts, ſheets, &c.

It is principally wrought in the provinces of Holland, Friſeland, and other parts of the United Provinces; whence the appellation.

The principal mart or ſtaple of this cloth is at Haerlem, whither it is ſent from moſt other parts, as ſoon as wove, there to be whitened in the enſuing ſpring.

That manufactured in Friſeland is the moſt eſteemed, and called Friſe Holland. It is the ſtrongeſt and the beſt coloured of any of that fineneſs: it is never calendered, nor thickened, as the reſt; but it is imported juſt as it comes from the whitſter: it is diſtinguiſhed by its being yard quarter and half wide; which is half a quarter more than thoſe commonly called Friſe Hollands, which are not right.

Holland, *gulix*, is very white and fine, and is chiefly uſed for ſhirts, being the ſtrongeſt of any for its fineneſs, except true Friſe. It is juſt yard wide.

Holland, *Alcmaer*, is a very ſtrong cloth, and wears exceeding well. It is about yard quarter and half wide.

Holland, in *Geography*, an appellation applied to the Seven United Provinces collectively, *viz.* Guelderland, Holland, Zealand, Utrecht, Overyſſel, Groningen, and Frieſland (which ſee), but primarily belonging to the chief of them. This country, once a celebrated republic, derives its name from the German word "Hohl," ſynonymous with the Engliſh term hollow, and denoting a concave or very low country. The people are called Dutch, from the German "Deutſch," or "Teutſch;" but "Deutſchland" properly ſignifies the vaſt extent of Germany itſelf, though by the Engliſh reſtricted to a ſmall portion, uſing a dialect of the German language. Theſe provinces extend from the north of Groningen to the ſouthern boundary along Auſtrian Flanders and Brabant, about 150 Britiſh miles; and in breadth, from the North ſea to the kingdom of Weſtphalia, about 100 Britiſh miles. Their content, in ſquare miles, is eſtimated at 10,000. They form a kind of peninſula, which is divided into N. and S. Holland; the former including all to the N. of Amſterdam, and the latter extending from the ſtates of Zealand and Brabant to the river Ye. The population has been recently computed at 2,758,632, which, allowing the extent of territory in ſquare miles to be 10,000, will give 275 for each ſquare mile. After the diſmemberment the French accounts ſtate the population at 1,881,881. That of Holland, the chief province, has been calculated at 980,000. The country is low and marſhy; ſome part of it being lower than the ſea, from the inundation of which it is ſecured by dykes or dams; and the meadows, which are covered with water in the winter, are freed from it by means of mills, that are contrived for diſcharging it into the ditches and canals. Without theſe ditches and canals, ſerving as drains to the country, the ſoil would in moſt parts be incapable of cultivation. Among the marſhes that deform the general face of the country, the traveller obſerves numerous and important cities and towns with admiration, and not without very honourable ideas of the aſtoniſhing powers of active induſtry, which have formed a habitable and enviable abode amidſt the greateſt natural diſadvantages. The marſhes, moraſſes, and heaths, which are characteriſtic of the different provinces, are however intermixed with groves, gardens, and meadows. Though the general aſpect of the country preſents an intimate combination of land and water, with few hills and woods, but rather moderate elevations conſiſting of barren ſand, Holland furniſhes little ſcope for the operations of agriculture, the land being moſtly appropriated to paſturage, excepting that ſmall portion of it which is aſſigned to the culture of madder and tobacco. In the province of Guelderland, and the barony of Breda, the waſte grounds are extenſive, being over-run with broom and heath, and the ſoil being generally a black ſand. In the north of Holland, and in Frieſland (which ſee), the paſtures ſupply ſuch a quantity of good butter as to form a ſtaple article of commerce. The chief rivers of the United Provinces are the Rhine, and the Meuſe or Maas, which ſee reſpectively. The lakes are few and of ſmall extent, if we except that which is called the ſea of Haerlem, on the north of which is the Ye, a broad piece of water, reſembling a creek of the ſea rather than a river, which paſſes by Amſterdam. This country has neither mountains nor elevated wood-lands, nor mines; its horſes are chiefly procured from England and Flanders, and for its cows and oxen it is primarily indebted to Holſtein. Fiſh abound on its ſhores, and particularly turbot and ſoals; but its herrings are chiefly obtained from the Northern ocean, by way of the port of Flardingen, or Vlaerdingen, W. of Rotterdam. The climate of this country is cold and humid, and therefore the dreſs of the inhabitants is calculated more for warmth than elegance; the houſes and ſtreets, both in the towns and villages, are diſtinguiſhed by their cleanlineſs and neatneſs, and form a contraſt to the ſqualid appearance of the German villages. The temperament of the Dutch is phlegmatic; and they are characteriſed by labour and perſeverance rather than ardent and impetuous activity. Their ruling paſſion is the love of money. To ſuch a degree does this paſſion prevail, if we may credit the report of a female traveller (Mrs. Radcliffe), that "the infatuation of loving money, not as a mean but an end, is paramount in the mind of almoſt every Dutchman, whatever may be his other diſpoſitions and qualities; the addiction to it is fervent, inveterate, invincible, and univerſal, from youth to the feebleſt old age." In ſtature the Dutch are low, and the women are commonly taller than the men; and notwithſtanding the predominant paſſion of the country, the ancient female affection for gold and jewels is not yet eradicated. The moiſture of the climate leads to the uſe of high-ſeaſoned food, and of ſpirituous liquors. Beſides the uſual games, the chief amuſements of the Dutch, in the days of their proſperity and wealth, were the theatres and the tea-gardens. The opulent merchants took delight in their villas, which were thickly planted among the numerous canals; and though their gardens were ſmall, they were richly ſtored with tulips, hyacinths, and other flowers of immenſe value. In winter ſhooting was a favourite paſtime; and the canals were crowded with people of all ranks. Others, however, whoſe means could afford it, amuſed themſelves under the domeſtic roof, amidſt their expenſive collections of pictures and prints, which they contrived to render a lucrative article of commerce. The Dutch canals of the United Provinces, which are not leſs numerous than the roads in other countries, have been a means of commercial intercourſe as well as of perſonal amuſement, as they have ſerved to augment their inland trade when their foreign commerce has declined, till late meaſures of the ſtate, carried into effect by the ruler of the continent, have been no leſs injurious to them than to their neighbours. The chief manufactures of Holland are linens, pottery, and painted tyles; leather, wax, ſnuff, ſtarch, paper, and alſo ſome articles of woollen, cotton, and ſilk. In a period of national proſperity and opulence, when their colonies were numerous on the coaſt of Hindooſtan, in Ceylon, at Batavia, and at the Cape of Good Hope, &c. and their maritime power very conſiderable, the moſt valuable branch of their commerce conſiſted in ſpices and drugs, brought from their ſettlements in the Eaſt Indies. Their fiſhery in the northern ſeas, and on our coaſts as well as their own, was an object of importance. At a later period they have derived no ſmall advantage from being the grand depoſit of commerce between Great Britain and the Continent; but this intercourſe is for the preſent interrupted; and more eſpecially their inland trade with Germany and France, by the canals and Rhine. One of the moſt profitable articles of this trade conſiſted in the vaſt floats of timber which arrived at Dort, from Andernach and other places on the Rhine, and from the German foreſts. The length of theſe rafts is from 700 to 1000 feet, and the breadth from 50 to 90, and the floating iſland was directed by 500 labourers; and it is ſaid, by the female traveller already cited, that the ſale of one raft, on its arrival at Dort, occupied ſeveral months, and frequently produced more than 30,000*l.* ſterling. The Dutch language is a dialect of the German; and the literature of the United Provinces has ſuſtained an honourable rank. Among thoſe who have contributed to its reputation in this reſpect we may mention Eraſmus, Johannes Secundus, or Hans de Twede, Grotius, Boerhaave, Paul Merula, Adrian Junius, Meurſius, Douſa, Heinſius, the Younger Voſſius, and Hoogeveen of Leyden, who died in 1794, after having acquired the reputation of being the firſt Greek ſcholar in Europe. The largeſt and moſt celebrated Latin ſchools in this country were thoſe at Rotterdam, Breda, Middleburg, Groningen, &c.; and its five univerſities are thoſe at Leyden, Utrecht, Harderwyck, Franeker, and Groningen, beſides two inferior colleges at Amſterdam and Deventer. At Haerlem there is an academy of ſciences.

The Proteſtant religion, in the Calviniſtic form, prevails through the United Provinces; and the treaty of Union, in 1579, provided for its perpetuity. In 1583, indeed, the ſtates of Holland propoſed, that no other form ſhould be tolerated; but this reſolution was wiſely rejected; and every religion is permitted, on condition that it does not oppoſe the fundamental laws, or teach any doctrines that are ſubverſive of the ſtate; but employments of any conſequence are reſtricted to Proteſtants. The eccleſiaſtical ſtate is compoſed of four ranks, *viz.* profeſſors at univerſities, preachers, elders, and deacons; and the government of the church is adminiſtered by conſiſtories, claſſes, and ſynods. The conſiſtory is the loweſt court, commonly conſiſting of the clergy and elders of a particular town; while a claſs conſiſts of deputies from ſeveral, and is commonly aſſembled three times in the year; a part of its duty being to viſit the churches, and watch over the conduct of the clergy. The ſynods are either provincial or national; the firſt being aſſembled every year, while the national ſynod is only ſummoned on the moſt important occaſions, when eſſential doctrines are to be diſcuſſed; and the laſt of theſe was that of Dort in 1618. The provincial ſynods are 53 in number, and conſiſt of 1570 preachers. There are alſo many Walloon churches diſperſed through the provinces, who hold a kind of ſynod twice a year, compoſed of deputies from their own ſect. The Roman Catholics are ſuppoſed to have 350 churches, ſerved by 400 prieſts. The other chief ſects are Lutherans, Remonſtrants, or Arminians, who have 43 teachers, Anabaptiſts, Jews, and a few Quakers.

As to the political hiſtory of the United Provinces, we may obſerve, that the original population of this country appears to have been Celtic; but when the Romans conquered the country, it was occupied by the Batavi, the moſt northern people of Belgic Gaul, ſuppoſed to be a German or Gothic progeny. (See Batavi.) The Friſians, the next people adjoining to the Batavi on the N., extended themſelves in the ſeventh century down to the Scheldt. In the eighth century the Friſians were ſubdued by the Franks under Charles Martel; but both the Friſians and the Franks became intermixed in the population of the country with the Batavians. (See Frisons and Franks.) Our limits will not allow us to trace the hiſtory of theſe provinces, whilſt they continued ſeparate, and in a great meaſure independent of each other; nor can we detail the various conflicts with which they endeavoured to aſſert and maintain their liberty againſt the tyranny of the king of Spain and his emiſſaries. It will be ſufficient to take up their hiſtory in the year 1566, when Holland and ſome inferior provinces revolted from the oppreſſive dominion of Philip II.; and thus commenced thoſe ſanguinary conteſts, which terminated in the union of Utrecht, Jan. 23d, A.D. 1579. For this purpoſe deputies from the provinces of Holland, Zealand, Utrecht, Frieſland, Groningen, Overyſſel, and Guelderland, met at Utrecht, and ſigned a mutual alliance, which formed the baſis of that commonwealth, which afterwards became ſo renowned under the appellation of the United Provinces. This treaty of alliance was founded upon the infraction of the pacification of Ghent, ſolemnly acceded to by Philip, and a late invaſion of certain towns in Guelderland. It was not intended by this alliance to divide the ſeven provinces from the other 10, or to renounce the pacification of Ghent; but its object was to preſerve the liberty ſtipulated in that pacification, by more vigorous operations, and united councils. The chief articles of this union deſerve to be recited, and they are as follow: the ſeven provinces ſhall unite in intereſt, as one province, never to be ſeparated or divided by teſtament, donation, exchange, ſale, or agreement; reſerving to each particular province and city all its privileges, rights, cuſtoms, and ſtatutes. In all diſputes ariſing between any of the provinces, the reſt ſhall interpoſe as mediators. They ſhall aſſiſt each other with life and fortune againſt every foreign attempt upon any particular province, whether to eſtabliſh ſovereignty, the Catholic religion, arbitrary meaſures, or whatever elſe may appear inconſiſtent with the liberties of the provinces, and the intention of the alliance. All frontier towns belonging to the United Provinces, ſhall, if old, be fortified at the expence of the provinces; if new, at the joint expence of the union. The public impoſts and duties ſhall be farmed for three months to the higheſt bidder, and employed with the king's taxes in the public ſervice. No province, city, or member of the union, ſhall contract an alliance with any foreign prince or power, without the concurrence of all the other members. Foreign powers ſhall be admitted into the alliance, only by conſent of all the contracting parties. As to religion, the provinces of Holland and Zealand ſhall act in that particular as they think adviſeable; the reſt ſhall adhere to the purport of the edict publiſhed by the archduke Matthias, which preſcribed, that no man ſhould be oppreſſed on account of conſcience. All the inhabitants, from the age of 18 to 60, ſhall be trained and diſciplined to war. Peace and war ſhall be declared by the unanimous voice of all the provinces; other matters that concern the internal policy ſhall be regulated by a majority. The ſtates ſhall be held in the uſual conſtitutional manner, and coinage ſhall be deferred to future determination. Finally, the parties agreed, that the interpretation of theſe articles ſhall remain in the ſtates-general; but in caſe of their failing, to decide in the ſtadtholder. In this grand alliance, ſketched out by the prince of Orange, may be diſcerned the judicious ſteady counſel of the maſter and true patriot. It was ſo univerſally approved, that in a ſhort time the cities of Ghent, Nimeguen, Arnheim, Leewarden, Venlo, Ypres, Antwerp, Breda, Bruges, with ſeveral other towns, noblemen and perſons of diſtinction, embraced and ſigned the union. The firſt coin ſtruck after the alliance is expreſſive of the ſituation of the infant republic. It repreſented a ſhip labouring amidſt the waves, unaſſiſted by ſails or oars, with this motto, "Incertum quo fata ferant." The hiſtory of this intereſting ſtruggle, ſays Pinkerton, has been depicted in glaring colours by the celebrated Grotius, who in this work ſometimes rivals the acute brevity of Tacitus. At the end of this century the Dutch had eſtabliſhed colonies at the Cape of Good Hope, and in the Eaſt Indies; and ſettlements were afterwards gained in South America. During the 17th century they rivalled the Engliſh in the empire of the ſea; and greatly exceeded them in commercial advantages. After the obſtinate naval conflicts in the reign of Charles II. their power began to decline. In 1672, Louis XIV. invaded Holland; and Amſterdam was ſaved merely by opening the ſluices. In 1688, William, the ſtadtholder of Holland, aſcended the throne of England; and a ſtricter intercourſe ſubſiſting between the countries, Holland became the grand channel of the commerce of England with the continent. The ſtadtholder was declared hereditary in 1747. By the war in 1756, Holland and France became intimately connected, and a French party aroſe in the country, which oppoſed the ſtadtholder; but he was ſupported by the Engliſh. In 1780, a war occurred between Great Britain and Holland, which terminated in 1784, after expoſing to Europe the decline and weakneſs of the United Provinces, ſtill further diſplayed by the entrance of the duke of Brunſwick in 1788, who may be ſaid to have ſubdued them (ſays Pinkerton) without a blow. As the Dutch joined the coalition againſt the French, their country fell a prey to the invaders, during the hard froſt of the winter of 1794–5; and the ſtadtholder took refuge in England in 1795. The country was then denominated the Batavian republic; and divided into eight departments, &c. However, theſe provinces were ſoon afterwards erected into a kingdom, and aſſigned by Napoleon the French emperor to his brother Louis. On the 1ſt of July 1810, Louis Napoleon abdicated his throne, and it was decreed on the ninth inſtant, by Napoleon, that it ſhould be united to France; that the city of Amſterdam ſhould be the third city of the empire; that Holland ſhould have ſix ſenators, ſix deputies to the council of ſtate, 25 deputies to the legiſlative body, and two judges in the court of caſſation; and that the officers by ſea and land, of whatever rank, ſhould be confirmed in their employments, under commiſſions to be delivered to them, ſigned under the emperor's hand, the royal guard being united to the imperial guard. The emperor's decree announces other proviſional enactments for the management of the adminiſtration, finances, &c. The imperial decree has been ſince executed.

Under their former government, the United Provinces were compoſed of ſeven republics, each retaining its own ſtates, conſiſting of nobles and burgeſſes. The provincial ſtates ſent deputies to the States-general, each republic having only one vote, though its deputies may be numerous. But the States-general ſeldom exceeded twenty-ſix perſons, who uſed to aſſemble in a ſmall room at the Hague, enjoying the right of peace and war, appointing and receiving ambaſſadors, naming the greffier, or ſecretary of ſtate, and all the ſtaff-officers. The council of ſtate directed the army and finances; and what was called the council of deputies conſidered the troops and finances of each province. The grand penſionary of Holland preſided in the provincial ſtates, and council of deputies of that country. The ſtadtholder was, originally, a kind of dictator, appointed, from the neceſſity of the times, to conduct the emancipation of the ſtate. When that neceſſity vaniſhed, the office became of dubious authority, till William III., in 1672, procured it to be declared hereditary. As he died without children, the ſtates revoked this power; but in 1747, it was again made hereditary in favour of William IV.

The new conſtitutional code, under the ſovereignty of Louis, conſiſted of five parts, or rather ſhort chapters. The civil, religious, and political inſtitutions were continued; and the public debt guaranteed. The council of ſtate was compoſed of thirteen members. All forms of religion were tolerated, even that of the king; to whom it pertained to nominate to all offices and places, formerly in the gift of the grand penſionary; for the code takes no notice of the ſtadtholder. The coin was to be ſtamped with his effigy; and, with the advice of the privy council, he had the prerogative of pardoning offences. The government of the colonies was ſpecially and excluſively veſted in him; but the general adminiſtration of the kingdom was committed to four miniſters of ſtate. The legiſlative body was appointed to conſiſt of thirty-eight members, choſen for five years, in a certain proportion for the ſeveral provinces; thoſe for Holland being ſeventeen. The title of high-mightineſſes was retained for the aſſembled members of the legiſlative body, the late grand penſionary being declared preſident for life. This aſſembly was appointed to meet twice in the year, in April and November; but extraordinary aſſemblies might be ſummoned by the king. Juſtice was directed to be adminiſtered according to the local cuſtoms and ſtatutes of each province and city, the ordinances of the States-general, and in defect of all theſe, the Roman code. Each province has a ſupreme court, to which appeals lie from the lower courts of juſtice, except in criminal cauſes, in which the ſtadtholder might pardon, by the conſent of the preſident and ſuperior court of each province, except in caſes of murder and other flagrant crimes.

The army was formerly compriſed at about 36,000, but it has been ſince the revolution incorporated with that of France. The navy, which uſed to conſiſt of forty ſhips of the line, has now almoſt totally diſappeared. The revenue was about 3½ millions ſterling; but the expenditure far exceeded it, ſo that the national debt was computed at about 130,000,000*l.* ſterling; but 2,800,000*l.* were annually received as the intereſt of loans to foreign powers. The dilapidation of the revenue and the increaſe of the debt have been very ſenſible ſince the eſtabliſhment of a nominal monarchy. The political importance of the United Provinces is altogether conſolidated with that of France, of which empire it is become a part, and to which it is abſolutely ſubject. What changes farther await it the wiſeſt politician cannot conjecture. We refer to the article United Provinces. Pinkerton's Geogr. vol. i. Mod. Un. Hiſt. vols. xxvii. xxviii.

Holland, a town of Pruſſia, in the province of Oberland, ſituated near the river Weeſke, and ſtrongly fortified; 40 miles S.E. of Dantzic. N. lat. 54° 2′. E. long. 19° 37′.

Holland, *New, Notaſia*, or, as Cook called the eaſtern part of it, "*New South Wales*," is an iſland in that part of the globe lately diſtinguiſhed by the name of Auſtralaſia, ſo large as to be entitled to the appellation of a continent. Its length from E. to W. is about 43 degrees of longitude, in the medial latitude of 25°, that is, about 2340 geographical miles, or 2730 Britiſh. The breadth from N. to S. extends from 11° to 39°, being 28°, 1680 geographical, or 1960 Britiſh miles. In the account of Cook's voyage, its ſquare ſurface is ſtated to be more than equal to the whole of Europe. This, however, is an exaggerated eſtimate; becauſe Europe is ſuppoſed to be about 3300 Britiſh miles in its utmoſt length, and its greateſt breadth 2350. This defect is, indeed, compenſated by the proximity of many large iſlands; and the whole of Auſtralaſia will probably be found greatly to exceed the European continent. This immenſe territory was firſt diſcovered in the beginning of the ſeventeenth century, and then called "Terra Auſtralis Incognita." The firſt diſcovery is dated by De Broſſes in October 1616, when the weſtern part was explored by Hartog. In 1628, the weſtern part was diſcovered by ſome veſſels belonging to the Dutch Eaſt India company, and called "De Witt's Land," from the name of the commodore who commanded the ſquadron; and in the following year, a Dutch ſhip, commanded by Capt. Pelſart, was wrecked on this coaſt. In 1642 Capt. Taſman was ſent by the Dutch Eaſt India company to ſurvey the coaſt, who viſited the ſouthern part, which he called "Anthony Van Diemen's Land," by way of contradiſtinction to "Diemen's Land," on the north coaſt. (See Diemen's *Land.*) Capt. Dampier fell in with this iſland in 1688, and viſited it again in 1699. He deſcribes the wretched condition of the inhabitants, as deſtitute of houſes and clothes; he repreſents them as black, tall, thin, ſtraight-bodied with ſmall limbs, great heads, heavy brows, and eyelids half cloſed for guarding their eyes againſt the flies, which were numerous and troubleſome. He further deſcribes them as having large bottle-noſes, full lips and wide mouths, without the two fore-teeth of their upper jaws, and without beards; long-viſaged, and deſtitute of every graceful feature in their faces. The next perſon who viſited this iſland was Capt. Cook, in 1770, who by his extenſive operations on its E. ſide, left little to be done towards completing the full circuit of it. Between Cape Hicks, in latitude 38°, where his examination of this coaſt began, and that part of Van Diemen's Land, whence Taſman took his departure, the diſtance was not above 55 leagues. It was highly probable, therefore, that they were connected; though Capt. Cook cautiouſly ſays, that he could not determine whether his *New South Wales*, (that is, the eaſt coaſt of New Holland,) joins to Van Diemen's Land, or not. But what was thus left undetermined by the operations of his firſt voyage, was, in the courſe of his ſecond, ſoon cleared up. Capt. Furneaux, in the Adventure, during his ſeparation from the Reſolution in 1773, having explored Van Diemen's Land, from its ſouthern point, along the E. coaſt, far beyond Taſman's ſtation, and on to the latitude 38°, where Capt. Cook's examination of it in 1770 had commenced. We have now, therefore, a full knowledge of the whole circumference of this vaſt body of land, though moſt of its interior parts remain ſtill unknown. To the ſouthward of lat. 33° or 34°, the land in general is low and level; far northward it is hilly, but in no part can be called mountainous: and the hills, and mountains, taken together, form but a ſmall part of the ſurface, in compariſon with the vallies and plains. It is rather barren than fertile, though the riſing ground is chequered by woods and lawns, and the plains and vallies are in many places covered with herbage: the ſoil, however, is frequently ſandy, and many of the lawns, or ſavannahs, are rocky and barren, eſpecially towards the northern part, where vegetation is leſs vigorous than towards the ſouth. The inland country appeared to be better clothed than the ſea-coaſt. The banks of the bays are covered with mangroves, to the diſtance of a mile within the beach, under which the ſoil is a rank mud, always overflowed by a ſpring tide ; farther within the country, a bog was occaſionally found, upon which the graſs was very thick and luxuriant, and ſometimes a valley occurs, that was clothed with underwood ; but the ſoil in general did not ſeem to admit of cultivation. In the interior of the country immenſe ſtrata of coal have been diſcovered. The coaſt, eſpecially to the northward of 25° S. lat. abounds with fine bays and harbours, where veſſels may be ſecure from all winds. The country appeared to be well watered by ſprings and ſmall brooks, but it has no large rivers. Of timber-trees there are but two ſorts ; the largeſt is the gum-tree, which grows over the whole country, the gum of which is a deep red, and reſembles the ſanguis draconis, if it be not the ſame ; the other grows ſomewhat like our pines. The wood of both is extremely hard and heavy. Others are covered with a ſoft bark, which is the ſame that is uſed in the Eaſt Indies for caulking of ſhips. The country furniſhes three ſorts of palms ; the nuts of one of which operated both as an emetic and cathartic with great violence. The quadrupeds of this iſland are the dog, of the chacal kind, which never barks, the kanguroo, an animal of the opoſſum kind, reſembling the phalanger of Buffon, and another like the pole-cat, called by the natives Quoll. Here are many kinds of bats. The ſea and other water-fowl are gulls, ſhaggs, ſoland geeſe or gannets, boobies, noddies, curlews, ducks, pelicans of an enormous ſize, black ſwans, the mænura ſuperba, having its tail expanded in the form of a lyre, and many others. The land birds are crows, parrots, parroquets, cockatoos, and others of the ſame kind, exquiſitely beautiful, pigeons, doves, quails, buſtards, herons, cranes, hawks, and eagles. Among other reptiles, here are various kinds of ſerpents, ſome noxious and ſome harmleſs, ſcorpions, centipeds, and lizards. Of the inſect tribe the principal are the muſquitoe and ant, ſome of the latter of which are green, and form their neſts in a curious manner upon the trees. The ants are of ſeveral kinds. The ſea abounds with fiſh of various ſorts : upon the ſhoals and reef are incredible numbers of the fineſt green turtle in the world, and oyſters of various kinds, particularly the rock oyſter and the pearl oyſter. Here are very large cockles, lobſters, and crabs. In the rivers and ſalt creeks there are alligators.

The number of inhabitants in this country ſeems to be very ſmall in proportion to its extent. The immenſe tract of the interior country remains unexplored, but there is reaſon to believe that it is either wholly deſolate, or more thinly inhabited than the parts viſited by Cook and his companions. The preſumption againſt its being much inhabited is ſtrengthened by the total want of cultivation. The men were of a middle ſize, and in general well made, clean-limbed, and remarkably vigorous, active, and nimble : their countenances were not wholly without expreſſion, and their voices remarkably ſoft and effeminate. The colour of the ſkin could not be well aſcertained, on account of the dirt which uniformly covered it : with the dirt it was as black as that of a negro, and without it ſuppoſed to be of a chocolate colour. In other reſpects the accounts of our navigators materially differ from that of Dampier. They inform us that the features are not diſagreeable, that their noſes are not flat, and that their lips are not thick : their teeth are white and even, and their hair naturally long and black, though univerſally cropped ſhort, and always matted and filthy ; their beards are buſhy and thick, but not ſuffered to grow long : both the hair and beard ſeemed to be kept ſhort by ſingeing them. Both ſexes go ſtark naked, without any apparent ſenſe of indecency. Their principal ornament is the bone which they thruſt through the cartilage that ſeparates the noſtrils : it is as thick as a man's finger, and being five or ſix inches long, reaches quite acroſs the face, and is an impediment both to their breathing and ſpeaking. They had alſo necklaces made of ſhells, neatly cut and ſtrung together : bracelets of ſmall cord, twiſted two or three times round the arm, and a ſtring of plaited human hairs round the waiſt. They paint their bodies both white and red, the latter forming broad patches upon the ſhoulders and breaſt, and the former being drawn in ſtripes over various parts of their bodies. Theſe people had no idea of traffic : they received what was given them, but had no idea of making a return, nor did they ſeem to have any diſpoſition to ſteal : but if they were refuſed what they aſked for, *e. g.* a turtle, they were enraged, and endeavoured to take it by force. On their bodies were viſible ſcars, inflicted by blunt inſtruments, and which were underſtood to be memorials of grief for the dead. They appeared to have no fixed habitations, nor was there any trace of a town or village in the country. Their houſes, when they had any, were mere hovels, conſtructed with pliable rods and covered with leaves of palm or broad pieces of bark : but in general they ſlept without any ſhelter, except the buſhes, or graſs, which is here near two feet high. Their fiſh-hooks are neatly made ; and their lines, made of ſome vegetable ſubſtance, are from the thickneſs of a half-inch rope to the fineneſs of a hair. Their chief food is fiſh, and they occaſionally kill a kanguroo and ſome birds : the only vegetable that forms an article of food is the yam. They dreſs their animal food by boiling, broiling, or baking it. As they have no nets, they catch fiſh only by ſticking with an inſtrument of wood adapted to the purpoſe, or with a hook and line. They produce fire with facility, and ſpread it in a wonderful manner. To produce it they take two pieces of dry ſoft wood, one being a ſtick about eight or nine inches long, and the other a flat piece : the former is ſhaped into an obtuſe point at one end, and preſſing it upon the other, they turn it nimbly by holding it between both their hands, as we do a chocolate mill, often ſhifting their hands up and down, to increaſe the preſſure. By this method they get fire in leſs than two minutes ; and then ſpread it by means of the dry graſs. The weapons of this people are ſpears, or lances, of different kinds, pointed with bone or ſhells, and barbed ; and they throw them with great force and dexterity, either by the hand for ſhort diſtances, or with an inſtrument contrived for that purpoſe : they have alſo ſhields or targets made of the bark of a tree. Their canoes are as rudely conſtructed as their houſes, of bark or the trunk of a tree hollowed, probably by fire. They are moved with a pole or paddles, and ſome of them are fitted with an outrigger to prevent their overſetting : they are of different lengths and very narrow. The only tools which they ſeemed to poſſeſs was an adze made of ſtone, wedges of the ſame material, a wooden mallet, and ſome ſhells, and fragments of coral. For poliſhing the points of their lances, &c. they uſe the leaves of a kind of wild fig-tree. Each of their canoes carries four people.

The eaſtern coaſt of New Holland was carefully examined by Capt. Cook, and formally taken poſſeſſion of in the name of the king of Great Britain in 1770. At the cloſe of the American war, it was determined by the Britiſh government to make a ſettlement on this coaſt for the accommodation of tranſported felons. (See BOTANY-*bay*.) It appears from ſome further diſcoveries and reports, pertaining to this country, that it is peopled by three or four diſtinct races of men ; thoſe in the S.W. being different from thoſe in the N., and both from thoſe in the E. above deſcribed. They are merely divided into families, the former being ſtyled Be-ana, or father, which is a title of reſpect ; and each family or tribe has a diſtinct place of reſidence, diſtinguiſhed by adding "gal" to the name of the place ; *e. g.*, the ſouthern ſhore of Botany-bay being called "Gwea;" the tribe inhabiting it is denominated "Gwea-gal." Thoſe who live on the north ſhores of Port Jackſon are called "Cam-mer-ny-gal," Cammer-rhy being the name of that part of the harbour. This tribe, which is numerous and muſcular, exerciſe the prerogative of exacting a tooth from young men of other families, in token of government or ſubordination. This tribute of teeth is paid in a ſolemn manner, and it is performed every four years. They manifeſt but very obſcure traces of religion, though they have ſome faint ideas of a future exiſtence in the clouds, whence they originally fell. They ſeem raiſed but one degree above the brute creation; and, like monkies, they are great mimics. The deformity of their appearance, occaſioned by their low ſtature and thin limbs, their black buſhy beards, and the bone ſtuck in the cartilage of the noſe, by an operation performed between the ages of eight and ſixteen, is farther increaſed by their practice of rubbing fiſh oil into their ſkins as a protection from the air and muſquitoes, and of colouring their faces with white or red clay. The women are marked by the loſs of the two firſt joints of the little finger of the left hand, which, as well as the extraction of a tooth from the boys, is ſuppoſed to inure them to bear pain with apathy. It is ſaid, however, that theſe joints of the little finger are parted with becauſe they are in the way when they wind their fiſhing lines over the hands. Few inſtances of deformed perſons occur. Their huts are commonly conſtructed of the bark of trees, in the form of an oven, having the fire at the entrance, and filled with ſmoke and naſtineſs, in which they ſleep promiſcuouſly. Their mode of courtſhip is not very gallant; as it conſiſts in watching the lady's retirement, and then knocking her down with repeated blows of a club, or a wooden ſword; after which the matrimonial victim is led, ſtreaming with blood, to her future huſband's party, when a ſcene enſues too ſhocking to relate. The men of one tribe ſeek wives among the women of another. The woman thus raviſhed is called a wife; and polygamy is common. Parturition is eaſy, and a few hours after the mother walks about her uſual buſineſs. The infant is placed for a few days on a piece of ſoft bark; but is ſoon removed to the mother's ſhoulders with its legs acroſs her neck, ſecuring itſelf by catching hold of her hair. Superſtition is very prevalent among theſe poor ſavages; they believe in magic, witchcraft, and ghoſts, the latter being the night-mare. They have alſo ſpells againſt thunder and lightning, and pretend to foretel future events by the meteors called falling ſtars. They are ſubject to a diſeaſe reſembling a violent itch; but for their venereal complaints they ſeem to have been indebted to Europeans. They have not only perſonal property in their weapons, and fiſhing tackle, but ſome are ſuppoſed hereditary properties of certain ſpots, perhaps aſſigned as rewards for public ſervices, or acts of great bravery. They are repreſented, with regard to their habitual diſpoſition, as revengeful, jealous, courageous, and cunning. If they were honeſt, when firſt viſited by Europeans, they have ſince acquired the art of ſtealing; and they are ſaid to be adepts in the arts of evaſion and lying. Savage, as their ſtate is, they are ſuſceptible of friendſhip, and capable of feeling ſorrow. They have names for the ſun and moon, ſome few ſtars, the magellanic clouds, and the milky way. Young people are buried; but thoſe who have paſſed the middle age are burnt; a rude tumulus being erected as a tomb. Mr. Collins, in his account of this iſland, has given an ample vocabulary of the language; which is ſaid to be grateful to the ear, expreſſive, and ſonorous, and to have no analogy with any other known language; but the dialects of the various regions ſeem to be entirely different. The ſeaſons are like thoſe of the ſouthern part of Africa and America; and as the country lies on the ſouthern ſide of the equator, they are the reverſe of thoſe in Europe. The climate, however, is allowed to be very fine and ſalubrious. The rains are heavy, falling chiefly about the full and change of the moon, and at intervals there are ſtorms of thunder and lightning. Of the lakes, rivers, and mountains of this extenſive country, our information is hitherto very imperfect; but they may probably be found to be on a large ſcale. A chain of mountains is ſaid to run N. and S. between 50 and 60 miles inland, but not eaſily acceſſible, on account of numerous deep ravines. Baſaltic columns often appear; and in Howe's iſland they are ſaid to riſe ſo high, as to be viſible at the diſtance of twelve leagues.

The whole of the S.W. coaſt of New Holland has been explored by D'Entrecaſteaux; who has made correct charts of it, and other parts have alſo been inveſtigated, ſo that in due time we ſhall have a more complete account of this extenſive iſland, or group of iſlands, if, indeed, it conſiſt, as ſome have ſuggeſted, of ſeveral. S. lat. about 11° to 39°. E. long. 113 to 156.

Holland, a townſhip of America, in Hampſhire county, Maſſachuſetts, bounded S. by Holland county in Connecticut, E. by Worceſter county, and northward by Brimfield, incorporated in 1785, and containing 445 inhabitants; 75 miles S.W. by W. of Boſton.

Holland, *Cape*, a cape in the ſtraits of Magellan. S. lat. 53 57'. W. long. 72° 34'.

Holland's *Iſlands*, iſlands of America, near to the S. of Hooper's iſland, in Cheſapeak bay.

Holland's *Point*, a cape on the W. ſide of Cheſapeak bay, which, together with Parker's iſland, forms the mouth of Herring bay.

Holland *River*, a river of Upper Canada, running from the S.W., and diſcharging itſelf into Cook's bay, lake Simcoe.

HOLLANDEROCELLER Irsceat, a ſmall iſland in the North ſea, near the W. coaſt of Eaſt Greenland. N. lat. 60 38'. W. long. 46 25'.

HOLLATT, a town of Auſtria, on the Danube; ſix miles N.N.W. of Bruck.

HOLLEMOPPO, a town on the N. W. coaſt of the iſland of Timor. S. lat. 9°. E. long. 124° 50'.

HOLLENBACH, a town of Germany, in the principality of Hohenloe; 17 miles N.E. of Ohringen.

HOLLERIUS, James, or, in his native language, Houllier, in *Biography*, a French phyſician and ſurgeon, of ſome eminence in the ſixteenth century, was born at Eſtampes, and took his doctor's degree in the faculty of Paris, of which he was elected dean in 1546. He obtained great reputation by the ſucceſs of his practice both in medicine and ſurgery, and is ſaid to have paid particular attention to render the mind cheerful under illneſs, with a view to facilitate the cure of corporeal diſeaſes. He was the author of ſeveral works, none of which he publiſhed himſelf. Some were printed during his life under the ſuperintendance of his pupils, and ſome after his death, which happened in 1562. Among his works were commentaries on the books of Galen "De Compoſitione Medicamentorum," and on the Aphoriſms of Hippocrates; likewiſe a treatiſe "De Materia Chirurgica," in three books, which went through numerous editions, in ſome of which the title of "Inſtitutiones Chirurgicæ" was adopted; "De Morborum curatione, &c." 1565; and "De Morbis internis Libri duo," 1571, which was frequently reprinted. Eloy. Dict. Hiſt.

HOLLES, Denzil, *lord*, ſecond ſon of the firſt Holles, earl of Clare, was born in 1597. He was liberally educated,

cated, and when his father had a place at court he was for a time companion and bed-fellow to prince Charles, then duke of York. When he attained to a proper age he ſat in parliament as member for St. Michael's, Cornwall, and ſided with the oppoſition party. At the acceſſion of Charles I. he refuſed the offer of a knigthood of the Bath, and in the parliament of 1627 he was, owing to the intereſt which he had acquired by his marriage, returned for Dorcheſter, and took a leading part in favour of liberty. When the three reſolutions of the commons againſt Popery, Arminianiſm, and the levying of tonnage and poundage by the king's prerogative, were drawn up, he was one of the two who forcibly held the ſpeaker in his chair till they were paſſed. For his conduct on this occaſion he was proſecuted, and condemned to a fine and impriſonment in the Tower, where he remained twelve months. Irritated by this treatment, and fixed in his principles, he entered the long parliament in 1640, a determined foe to the court, and by the vigour and abilities which he manifeſted, he was placed at the head of the Preſbyterian party. His relationſhip with the earl of Strafford preventing him from taking a part againſt that nobleman, he carried up the impeachment of archbiſhop Laud. He was one of five members accuſed by the king of high treaſon in 1641, and the attempt at ſeizing them was the immediate cauſe of taking up arms. In the enſuing war the parliament gave him the command of a regiment, and appointed him lieutenant of Briſtol. Mr. Holles, however, ſoon ſaw through the deſigns of the independent party, and with the view of fruſtrating them he endeavoured to promote a treaty with the king. At length he was obliged to eſcape to France to avoid a proſecution for high treaſon from the party with whom he had acted. By the interpoſition of his friends he was allowed to return in 1648, when he reſumed his ſeat in parliament, and was one of the perſons appointed to treat with the king in the Iſle of Wight. He was not prepared to go to all the lengths of his party, and was again obliged to quit the country to enſure the ſafety of his perſon. He took up his abode in Britanny, where he continued till the year preceding the reſtoration, which event he had uſed all his influence to promote. On the reſtoration he was advanced to the peerage by the ſtyle of lord Holles of Iſfield, in the county of Suſſex. He was now employed by the court in various negociations, but his attachment to the principles of liberty remained unabated, and when the politics of the reign tended to render the king abſolute, he appeared as a leader in oppoſition. No man had a more diſintereſted love of his country than lord Holles, a proof of which was exhibited, when offered by parliament 5000*l.* as a reparation for the loſſes which he had ſuſtained in the civil war: "I will not," ſays he, "receive a penny till the public debts are paid." He died in 1679, in the 82d year of his age. He was buried in Dorcheſter church, where a monument was raiſed by his great nephew John duke of Newcaſtle. Biog. Brit. Hume.

HOLLES, in *Geography*, the *Niſitiſſet* of the Indians, a townſhip of America, in Hillſborough county, New Hampſhire, on the Maſſachuſett's line, incorporated in 1746; about 70 miles S.W. of Portſmouth, and containing 1557 inhabitants.

HOLLFELD, a town of Bavaria, in the biſhopric of Bamberg, in the Wiſent; 15 miles E. of Bamberg.

HOLLI, the Indian name for what the Spaniards call *ulli;* a reſinous liquor, which flows ſpontaneouſly from the tree *holquaghuytl*, or *chilli*. It is often mixed with chocolate in the making, in the proportion of one fourth part; it gives the chocolate in this caſe no very diſagreeable flavour; and becomes a very powerful medicine in dyſenteries. It is uſual, however, before the making it, to mix the cacao and holli on an iron plate, and torrify them thoroughly together.

HOLLIS, THOMAS, in *Biography*, was born at London in April, 1720. Being deſigned for commercial life, he was ſent, when about 14 years of age, to Amſterdam, for the purpoſe of learning the French and Dutch languages, and merchants' accounts. Soon after his return, in 1735, his father died, and as he was now heir to a large eſtate, it was reſolved to complete his education on a liberal plan. With this view he was placed under the care of Dr. Ward, profeſſor of rhetoric in Greſham college, with whom he ſtudied the learned languages, and other branches of literature. In 1740 he took chambers in Lincoln's Inn as a law ſtudent, and probably with ſome view of following the profeſſion, but though he lived there eight years, it does not appear that he applied himſelf, profeſſedly, to the ſtudy of the law. He did not, however, waſte his time in idle amuſements and diſſipation; he had already formed an acquaintance with perſons eminent for their attachment to liberty; and had imbibed their principles, which ſtrongly marked his character through life. Even when a boy at ſchool, he was intereſted in the noble deeds of the heroes of antiquity, "I uſed," ſaid he, "to rob nature of her reſt to read Plutarch, honeſt Plutarch, and read again the lives of his heroes. To him, I owe, I willingly confeſs, the fineſt diſpoſitions of my mind." In 1748 he ſet out on a tour upon the continent, and the journal which he kept while he was abſent proves that he ſuffered nothing worthy of obſervation to eſcape his notice. In 1750 he made a ſecond tour, and finding on his return that he could not gratify his wiſh of ſerving his country, by entering into parliament, without compliances which were contrary to his principles, he began to make a collection of books and medals for the purpoſe of preſerving the memory of the champions of liberty; and, in general, for the ſervice of ſcience and art. It was alſo one of his leading objects to print, and preſent to his friends, books favourable to the popular principles of government. Milton and Algernon Sidney were the authors that attracted his principal admiration. He inveſtigated with great minuteneſs the hiſtory of Milton and his works, and cauſed engravings to be made of his portrait taken at different periods. The particulars of Mr. Hollis's life are little more than a liſt of generous and public ſpirited actions, either for the relief and encouragement of individuals, or for the promotion of what he conſidered the moſt important intereſts of mankind. There were few uſeful and benevolent inſtitutions of which he was not a member, and a liberal patron. The books which he publiſhed, or procured to be publiſhed, were "Wallis's Grammar of the Engliſh Language;" "Locke on Toleration and Government;" "Sydney on Government;" "Needham's Excellency of a free State;" "Neville's Plato Redivivus;" and "Staveley's Romiſh Horſeleach." He likewiſe cauſed ſeveral pamphlets from America to be reprinted at his own expence. He encouraged the printing of other works favourable to liberty, by taking large numbers of copies and diſtributing them as preſents. His munificence in this reſpect contributed very much to extend the knowledge of Engliſh literature and Engliſh generoſity through foreign countries. In 1770 he retired into the country, where he employed himſelf in improving his eſtate at Corſcombe in Dorſetſhire. He kept many workmen conſtantly employed in his ſervice, to ſome of whom he was giving directions on New Year's day 1774, when he dropt down in a fit and immediately expired. Mr. Hollis, ſays one of his biographers, was of an athletic make, inclined to corpulence, which he counteracted by great abſtemiouſneſs of diet, and ſtrong exerciſe. He allowed himſelf ſcarcely any of the indulgencies of a man of fortune, and oppoſed the growing luxury of the age, as well by his example as by his precepts. His particular ſentiments with regard to religion were known to himſelf only. He joined no ſect, and attended no place of worſhip, but his diary contains a multitude of proofs of his veneration and gratitude to the Supreme Being. He was, in every reſpect, an univerſal philanthropiſt, and it was ſaid of him, " that in his death Liberty loſt her champion, Humanity her treaſurer, and Charity her ſteward." Hollis Memoirs, 2 vols. 4to. 1780.

HOLLISTON, in *Geography*, a townſhip of America, the moſt ſoutherly in Middleſex county, Maſſachuſetts; 28 miles S. by. W. of Boſton; incorporated in 1724, and named in honour of Thomas Hollis, eſq., of London, and now containing 783 inhabitants.

HOLLMAN, Samuel Christian, in *Biography*, was born at Stettin in 1696, where he received the elementary principles of a learned education. His maturer ſtudies he purſued at Wittenburg, took his degree of M. A. in 1720, and for a ſhort time he read lectures at Greifswald and Jena. In 1734 he was invited to be public profeſſor of philoſophy in the univerſity of Gottingen, then lately founded, and upon the eſtabliſhment of the ſociety of the ſciences he was the firſt regular member of the philoſophical claſs. Here he continued his lectures till the year 1784, when he reſigned the duties of his office. He died in 1787. The univerſity of Gottingen was under vaſt obligations to this learned man, who with Haller contributed to diffuſe through Germany a taſte for natural philoſophy and natural hiſtory. On theſe ſubjects he publiſhed ſeveral excellent papers in the tranſactions of the royal ſocieties of Gottingen and London. He likewiſe diſtinguiſhed himſelf by various elementary works and diſſertations, which are enumerated in the General Biography, to which the reader is referred.

HOLLOA, in *Sea Language*, is an exclamation of anſwer to any perſon who calls to another to aſk ſome queſtion, or to give a particular order. It is alſo the firſt anſwer in hailing a ſhip at a diſtance.

HOLLOLA, in *Geography*, a town of Sweden, in the province of Tavaſtland; 30 miles E. of Tavaſthus.

HOLLOW, in *Architecture*, a concave moulding, about a quadrant of a circle, by ſome called a *caſement*, by others an *abacus*.

Hollow-*quoins*, in *Engineery*, are piers of ſtone or large bricks made on purpoſe behind each lock-gate of a canal, which are formed into a hollow from top to bottom to receive the rounded head of the lock-gates: in ſome inſtances the hollow-quoin is formed of one piece of oak cut to the proper ſhape and fixed vertically againſt the wall, and even caſt iron has been uſed, on ſome recent occaſions, for forming the hollow-quoin or hinge for the lock-gates of large canals, or the entrance baſons to docks. See our article Canal.

Hollow *Roots*, in *Botany* and *Gardening*. See Fumaria.

Hollow *Square*, in *Military Language*, is a body of foot, drawn up with an empty ſpace in the middle for the colours, drums, and baggage; facing and covered by the pikes every way, to oppoſe the horſe.

Hollow *Tower*, in *Fortification*, is a rounding made of the remainder of two briſures, to join the curtin to the orillon, where the ſmall ſhot are played, that they may not be ſo much expoſed to the view of the enemy.

Hollow-*toothed Horſe*, in the *Manege*. See Shell-*toothed*.

Hollows, in *Mining*, denote the waſtes, gobbins, or old hollows in coal-pits, from whence the coals have been wrought or gotten. The old hollows in many coal works generate *Damps* (ſee that article), or foul air, which is very prejudicial to the works; and, in ſome inſtances, the waſte coals in them are fired by the pyrites, duns, and other ſelf-inflaming ſubſtances among them, if the air be not excluded from theſe hollows; as at Doniſthorpe colliery, in Derbyſhire, and others near Dudley, in Staffordſhire. See Farey's Derbyſhire Report, vol. i.

HOLLOWNESS *of* Trees. This is one of the moſt miſchievous diſtemperatures to which trees are ſubject. It is generally occaſioned by the lopping of them in an improper manner, and leaving the wet to fall in upon them, eſpecially on their heads. When this miſchief is found out in its beginning, the only method is to cut the trunk off to the quick, ſacrificing the whole hollow part; it is, in this caſe, to be cut off ſloping, that the wet may run off from it. All ſoft woods are liable to this miſchief, after the lopping, particularly the elm; and when it takes hold of any tree, it grows upon it daily, till the whole ſubſtance of the tree is at length eaten away, and only a coat of bark is left. The beſt way of preventing it in the elm, is never to cut off the head or top of the tree at all, but only to lop the ſide branches: theſe will yield a very large quantity, and the body of the tree will thrive the better for their being often cut off, and will be good timber at laſt. Theſe tall elms ſometimes grow hollow from another cauſe, that is, from the decay of ſome of the large roots; but the ſtarving condition of its branches will ſhew this, though there be no external mark of it. This ſort of hollowneſs always begins at the bottom of the tree. Blaſted parts of the trees are to be cut away to the quick, in the ſame manner as the hollow ones, and the wounds will heal in the ſame manner.

HOLLS, in *Geography*, a lake of Norway, in the dioceſe of Aggerhuus; 70 miles N. of Chriſtiania.

HOLLY, in *Botany* and *Gardening*. See Ilex.

The common holly is often found uſeful as a hedge plant. It is a plant which on good, dry, loamy ſoils, grows to a conſiderable ſize; but which on poor wet ſoils ſeldom becomes more than a low ſhrub. It has been recommended as making an impenetrable fence, and as bearing to be cropped with but little injury; and that ſheep are capable of being fed in the winter with the croppings; while birds conſume the berries. The bark, when fermented, and then waſhed from the woody fibres, conſtitutes the common bird-lime. And the beauty of its ſcarlet berries are aſſerted never to ſuffer from the ſevereſt of our winters. The wood is found excellent for veneering; being occaſionally ſtained black in imitation of ebony. (See Marquetry.) It is uſeful for the handles of knives, as well as the coggs of mill-wheels. Provincially it is not unfrequently denominated *Hollin*.

A late writer contends, that " no plant makes ſo good a hedge as holly; if preſerved with any attention in its infancy it will, in a few years, be impenetrable to man or beaſt. It often fails from being planted at an improper ſeaſon; for there is not the leaſt certainty of any ſucceſs, except by planting about Midſummer. The plants ſhould be from ſix to nine inches high, and well rooted: they ſhould not be let into the ſloping face of a bank, but on a level tablet left for that purpoſe, and well defended on both ſides, to keep both ſheep and hogs from it." This is one of thoſe plants that may likewiſe be intermixed with the white thorn in the conſtituting of hedge fences, and which by its mixture renders them ſtill more beautiful. See Fence and Hedge.

Holly, *Knee*, in *Botany* and *Gardening*, and the *Materia Medica*. See Ruscus.

Holly, *Sea*, the name by which ſome call the *eryngium* of botanical writers. See Eryngo.

Holly-*wood*, *Petrified*, in *Natural Hiſtory*. In the accounts which are given in the Philoſophical Tranſactions, N° 158, of the ſuppoſed petrifying qualities of the waters of Lough Neagh in Ireland, ſome of the pieces of petrified wood found in its banks are denominated *holly*; but apparently for no better reaſon, than becauſe they were white: correct obſervations have never, we believe, detected holly or any other recent ſpecies of wood in the ſtrata: the leaves and twigs of holly obſerved by Dr. Correa de Serra, on the coaſt of Lincolnſhire, evidently belong to the recent or peat foſſils, and not to thoſe of the ſtrata.

HOLLY-HOCK, in *Botany* and *Gardening*. See Alcea.

HOLLYMOUNT, in *Geography*, a ſmall poſt-town of the county of Mayo, province of Connaught, Ireland, ſituated on the river Robe. It is on the road from Dublin to Caſtlebar through Tuam, and is 107 miles W. by N. from Dublin, and 14 from Caſtlebar.

HOLM, Hulmus, ſignifies as much as *inſula amnica*, a river iſland, according to Bede; or a plain, graſſy ground, upon the water-ſide, or in the water, according to Camden.

Where any place is called by the name holm, or where this ſyllable is joined with any other in the name of a place, it ſignifies it to be ſurrounded with waters. As the *flatholmes*, the *ſtepholmes*, near Briſtol. If the ſituation of the place be not near the water, it may ſignify a hilly place; for holm, in Saxon, alſo ſignifies a *hill*, or *cliff*.

Holm, or *Holme*, in *Agriculture*, the common name of a low, flat, rich tract of land, which uſually lies on the border of a large river. This ſort of land is fit for almoſt any ſort of culture, but particularly ſo for thoſe of paſture, feeding, and hay. See Holm *Land*.

Holm *Land*, that deſcription of rich ground which is met with on the ſides of large ſtreams of water. This is obviouſly a water-formed kind of land, being gradually conſtituted by time from the frequent depoſitions of the rivers or ſtreams during the periods of their being covered by the floods proceeding from them. This is very clear from the circumſtance of ſuch ſorts of land being uniformly found on the banks of ſuch ſtreams as have a flow, ſmooth courſe, and which are liable to be overflowed by them. Where ſuch ſtreams are uſually diſcharged into larger and more expanded ſpaces of water, it is common to find the more valuable kinds of this ſort of land. In ſome particular caſes of this deſcription of land, it is not unuſual to find the ſoil approaching, in ſome meaſure, to that of a clayey quality; but which, when properly freed from water, and ſubjected to good cultivation, ſpeedily becomes excellent land. Indeed all theſe ſorts of lands are in general well ſuited either for the growth of graſs or grain, moſtly producing heavy crops of the latter as well as the former; but from their being in moſt inſtances ſubject to be overflowed, they are probably more proper for being kept under the graſs ſyſtem.

Holm *Oak*. See Quercus.

Holm, in *Geography*, one of the ſmaller Orkney iſlands, one mile E. of Weſtra.—Alſo, a ſmall iſland between Pomona and Hoy.—Alſo, a ſmall iſland, two miles W. of Eda.—Alſo, a ſmall iſland, on the coaſt of Eſſex, in a large bay. N. lat. 51° 53′. E. long. 1° 10′.—Alſo, a town of Sweden, in the province of Angermannland; 40 miles N.N.W. of Hernoſand.

Holm *Kirk*, a town of the iſland of Pomona; nine miles S.E. of Kirkwall.

HOLME. See Holm.

HOLMES, *Flat and Steep*, in *Geography*, two ſmall iſlands ſituated in the Britiſh channel, between Glamorganſhire and Somerſetſhire. The former contains about 60 acres of land, and is diſtinguiſhed for its light-houſe. Several pilots reſide on it. The Steep Holmes is a ſmall rocky iſland, the higheſt point of which riſes 400 feet above the level of the ſea. It is almoſt diveſted of vegetation, but is the reſort of large flocks of ſea fowls during the ſummer ſeaſon. This ſolitary and inhoſpitable ſpot is ſaid to have been a place of refuge to the ancient Britiſh hiſtorian, Gildas, who hoped thus to preſerve his life from the marauding Picts and Scots. He afterwards retired to Glaſtonbury.

Holmes's *Hole*, a commodious and ſafe American harbour, in Duke's county, Maſſachuſetts, on the N. ſide of Martha's Vineyard; 98 miles S.E. of Boſton.

HOLMESTRAND, a town of Norway, in the province of Aggerhuus; 30 miles S. of Chriſtiania. N. lat. 59° 30′. E. long. 10° 30′.

HOLMON, a ſmall iſland on the W. ſide of the gulf of Bothnia. N. lat. 63° 48′. E. long 20° 37′.

HOLMSKIOLDIA, in *Botany*, was named by profeſſor Retzius of Lund, in honour of a Daniſh nobleman, Theodore Holm, afterwards Holmſkiöld, who wrote a treatiſe in Daniſh on *Anagallis*, in 1761, and a ſplendid folio in Latin and Daniſh on Fungi, explaining the ſtructure of the *Clavariæ* and ſome of their allies, publiſhed at Copenhagen in 1790. He was born in 1732 and died in 1794, according to Dryander's Bibl. Banks, v. 5. 287.—Retz. Obſ. faſc. 6. 31. Willd. Sp. Pl. v. 3. 360. (Haſtingia; Sm. Exot. Bot. v. 2. 41. Intr. to Bot. 403. See Hastingia.)—Claſs and order, *Didynamia Gymnoſpermia*. Nat. Ord. *Verticillatæ*, Linn. *Labiatæ*, Juſſ.

Gen. Ch. *Cal.* Perianth inferior, of one leaf, very large, coloured, turbinate, gradually expanding into a wide bell-ſhaped limb, with five ſhallow, equal, unarmed lobes. *Cor.* of one petal, ringent, tubular; tube longer than the calyx, ſwelling upwards; upper lip ſhorteſt, aſcending, cloven, obtuſe; lower in three rounded lobes, the middle one largeſt, entire. *Stam.* Filaments four, thread-ſhaped, rather longer than the upper lip, two of them ſhorter than the reſt; anthers incumbent, roundiſh, ſimple. *Piſt.* Germen ſuperior, four-cleft; ſtyle the ſize of the ſtamens and ſituated between them, its ſummit bent downward; ſtigma in two ſharp lobes. *Peric.* none, except the faded, ſcarioſe, permanent calyx. *Seeds* four, naked, in the bottom of the calyx, ſomewhat obovate, rugged.

Eſſ. Ch. Calyx bell-ſhaped, dilated, much wider than the corolla, coloured, in five ſhallow, equal, unarmed lobes.

1. H. *ſanguinea*. Retz. and Willd. as above. (Haſtingia coccinea; Sm. Exot. Bot. v. 2. 41. t. 80.)—Gathered by Koenig and by lieutenant-colonel Thomas Hardwicke, in vallies among the mountains of the north part of Bengal, flowering in February or March, and ripening ſeed in April. It is called by the people of the country *Ghurbulpaharia*, a name almoſt as difficult of pronunciation as *Holmſkioldia*, which we are told is ſpoken as if it were written *Holmſhouldia*, to the no ſmall comfort of thoſe who, like us, are forced to adopt it, in juſtice to its meritorious prototype, and thoſe who have delighted to honour him. The original appellation of this new and curious genus, given by Koenig, *Haſtingia*, was retained in the Exotic Botany, becauſe the writer of that work could have no ſuſpicion of any one's having committed ſo great an error as to place this plant in the order

Angioſpermia, its characters and affinity being ſo manifeſtly near *Phlomis* and *Moluccella* in the *Gymnoſpermia*. It was, therefore, concluded to be unpubliſhed.

The only known ſpecies of this genus is a very handſome ſhrub, whoſe *ſtem* is ſmooth, roundiſh, with many oppoſite branches. *Leaves* oppoſite, on furrowed ſtalks, without ſtipulas, ovate, pointed, veiny, two or three inches long, ſlightly ſerrated, almoſt perfectly ſmooth, dotted on both ſides, paler beneath. *Flowers* in terminal, looſe, bracteated bunches, of a vivid ſcarlet. *Flower-ſtalks* downy. *Calyx* an inch wide, veiny, ſlightly downy, as richly coloured as the *corolla*, which is alſo pubeſcent, longer than the calyx, but much narrower, as in *Moluccella*. *Seeds* black.—This plant would be a great ornament to our ſtoves, and might probably ſucceed in a conſervatory with leſs heat than tropical vegetables generally require.

What the worthy Retzius ſaw when he examined "a half-ripe capſule" of this ſhrub, in which he "manifeſtly obſerved ſeveral ſeeds, but could not abſolutely judge whether it were unicapſular (meaning unilocular) or not," we are utterly unable to imagine.

HOLO, in *Geography*, a town of Sweden, in Sudermanland; 24 miles S.W. of Stockholm.

HOLOCAUST, Ὁλοκαυστον, formed from ὁλος, *whole*, and καιω, *I conſume with fire*, a kind of ſacrifice, wherein the whole offering is burnt or conſumed by fire; as an acknowledgment that God, the Creator, Preſerver, and Lord of all, was worthy of all honour and worſhip, and as a token of men's giving themſelves entirely up to him. It is called alſo, in ſcripture, a *burnt-offering*.

Sacrifices of this ſort are often mentioned by the Heathens as well as Jews; particularly by Xenophon, Cyropæd. lib. viii. p. 464. ed. Hutchinſ. 1738, who ſpeaks of ſacrificing holocauſts of oxen to Jupiter, and of horſes to the ſun; and they appear to have been in uſe long before the inſtitution of the other Jewiſh ſacrifices by the law of Moſes. Accordingly, we find this kind of ſacrifice was offered by Noah and Abraham, and alſo by Job, and Jethro, the father-in-law of Moſes. See Job, i. 5. chap. xlii. 8. Gen. xxii. 13. chap. viii. 20. On this account, the Jews, who would not allow the Gentiles to offer on their altar any other ſacrifices peculiarly enjoined by the law of Moſes, admitted them by the Jewiſh prieſts to offer holocauſts; becauſe theſe were a ſort of ſacrifices prior to the law, and common to all nations. During their ſubjection to the Romans, it was no uncommon thing for thoſe Gentiles to offer ſacrifices to the God of Iſrael at Jeruſalem. Vide Philo. Opera. p. 801. E. Ed. Colon. Allobr. 1613. Tertullian. Apolog. § 26. p. 26. ed. Rigalt. 1675.

Holocauſts were deemed by the Jews the moſt excellent of all their ſacrifices. It is ſaid, that this kind of ſacrifice was in common uſe among the heathens, till Prometheus introduced the cuſtom of burning only a part, and reſerving the remainder for his own uſe.

HOLOGNE-aux-Pierres, in *Geography*, a town of France, in the department of the Ourte, and chief place of a canton, in the diſtrict of Liege. The place contains 678, and the canton 17,815 inhabitants, on a territory of 147½ kiliometres, and 30 communes.

HOLOGRAPHUM, compoſed of ὁλος, *all*, and γραφω, *I write*, in the *Civil Law*, ſomething written wholly in the hand-writing of the perſon who ſigns it.

The word is chiefly uſed in ſpeaking of a teſtament, written wholly in the teſtator's own hand. See Testament.

The Romans did not approve of holographic teſtaments; and, though Valentinian authorized them by a novel, they are not uſed where the civil law is in full force.

HOLOKLUB, in *Geography*, a ſmall iſland on the W. ſide of the gulf of Bothnia. N. lat. 60° 51′. E. long. 17° 7′.

HOLOMETER, compoſed of ὁλος, *all*, and μετρεω, *I meaſure*, a mathematical inſtrument ſerving univerſally for the taking of all ſorts of meaſures, both on the earth and in the heavens.

The holometer is the ſame with what is otherwiſe denominated *pantometer*; which ſee.

HOLOMIN, in *Geography*, a ſmall iſland of Scotland, near the W. coaſt of the iſland of Mull.

HOLOSERICA Vestis, a garment entirely of ſilk, as the name imports, which was not uſed at Rome till the time of Heliogabalus.

HOLOSIE, in *Geography*, a town of Auſtrian Poland, in Gallicia; 40 miles W.N.W. of Lemberg.

HOLOSTEMMA, in *Botany*, from ὁλος, *entire*, and στεμμα, *a crown*, becauſe the crown of the ſtamens is a ſimply annular undivided body. Brown Aſclep. (from Tr. of the Wernerian Society, v. 1.) p. 31.—Claſs and order, *Pentandria Digynia*. Nat. Ord. *Contortæ*, Linn. *Apocineæ*, Juſſ. *Aſclepiadeæ*, Brown.

Eſſ. Ch. Corolla ſomewhat wheel-ſhaped, five-cleft. Crown of the ſtamens inſerted at the bottom of their tube, ſimple, annular, entire. Anthers terminated by a membrane; maſſes of pollen pendulous, compreſſed, attached by their ſlender ſummits. Stigma pointleſs. Follicles ſwelling, ſmooth. Seeds with a hairy crown.

The only ſpecies indicated by the author is the *Adakodien*, Rheede Hort. Malab. v. 9. 9. t. 7, found in the Eaſt Indies. This is a twining ſmooth *ſhrub*. The *leaves* are oppoſite (erroneouſly drawn alternate in the figure), ſtalked, croſſing each other in pairs, heart-ſhaped, three or four inches long, entire, ſoft, ſmooth, milky, but not acrid. *Flowers* inodorous, in ſeſſile axillary umbels, large and handſome, variegated with green and white, ſtreaked with purpliſh red. *Follicles* three or four inches long, half-ovate, pointed, filled with innumerable imbricated ſeeds.

HOLOSTEUM, has been ſuppoſed by ſome authors to have been derived from ὁλος, *the whole*, and ὀστεον, *bony*, thus, by antiphraſis, alluding to its extreme delicacy and tenderneſs of ſtructure. An attentive peruſal of Dioſcorides ſeems rather to favour a different explanation, for he ſpeaks of his ὁλεστιον as a conſolidating herb, which its name, from ὁλος, or οὖλος, *entire*, *ſane*, or *perfect*, might poſſibly imply. Linn. Gen. 42. Schreb. 57. Willd. Sp. Pl. v. 1. 488. Mart. Mill. Dict. v. 2. Sm. Fl. Brit. v. 1. 161. Juſſ. 299. Lamarck. Dict. v. 3. 135. Illuſtr. t. 51. Gærtn. t. 130.—Claſs and order, *Triandria Trigynia*. Nat. Ord. *Caryophyllei*, Linn. *Caryophylleæ*, Juſſ.

Gen. Ch. *Cal.* Perianth of five, ovate, permanent leaves. *Cor.* Petals five, unequally jagged, obtuſe, all equal in length. *Stam.* Filaments three, thread-ſhaped, ſhorter than the corolla; anthers roundiſh. *Piſt.* Germen nearly round; ſtyles three, thread-ſhaped; ſtigmas rather obtuſe. *Peric.* Capſule of one cell, ſomewhat cylindrical, gaping at the top. *Seeds* ſix, or more, roundiſh.

Eſſ. Ch. Calyx five-leaved. Corolla of five unequally-jagged petals. Capſule nearly cylindrical, burſting at the top.

Obſ. The petals of *Holoſteum* are deſcribed by authors in general as bipartite, or deeply cloven, and ſometimes trifid; but Dr. Smith has ſuggeſted (in his Prodromus Floræ Græcæ, v. 1. 303.), that the *petala eroſa*, if conſtant to this genus, as he ſuſpects they are, may afford an excellent eſſential mark. Schreber has obſerved, that in *Holoſteum umbellatum* the petals are doubly or triply toothed, and in *ſucculentum* they are deſcribed as ſubtrifid. In *cordatum* we find them ſometimes ſlightly emarginate, ſometimes entire, in the ſame flower. In Swartz's *diandrum* they are ſaid to be deeply divided.

1. *H. cordatum.* Linn. Sp. Pl. 130. (Alſine americana, nummulariæ folio; Herm. Parad. Batav. t. 11.)—Leaves nearly heart-ſhaped. Stipulas four on each ſide.—Native of Jamaica and Surinam.—*Stems* decumbent, creeping, roughiſh at the lower part. *Leaves* oppoſite, roundly cordate, ſmooth, almoſt ſeſſile. *Stipulas* membranaceous. *Peduncles* lateral, elongated, aſcending, about ſeven-flowered, the partial ſtalks falling with the fruit when ripe.

2. *H. diandrum.* Willd. n. 2. Swartz. Prod. 27. Ic. t. 7. —Stems procumbent, rather rigid. Leaves roundiſh. Flowers diandrous. An inhabitant of Jamaica.—*Radicles* capillary, whitiſh. *Stem* much branched, ſtraight, ſmooth. *Leaves* oppoſite, entire. *Stipulas* hairy, at the baſe of the flower-ſtalks. *Capſule* roundiſh, or ſlightly triangular.—Profeſſor Swartz remarks that this is diſtinct from the laſt ſpecies, being altogether a much ſmaller plant; but upon comparing his plate with the Linnæan ſpecimen of *H. cordatum*, it appears that the latter is extremely variable in ſize, and therefore this circumſtance is not ſufficient to make them diſtinct ſpecies. Neither are the diandrous flowers a proper diſtinctive mark, becauſe *H. umbellatum* frequently varies in having from three to ten ſtamens.—We, therefore, only adopt this ſpecies on the authority of Swartz. The *petals* of *H. cordatum* are often as deeply divided as thoſe of *diandrum* are repreſented.

3. *H. ſucculentum.* Linn. Sp. Pl. 130. Amœn. Acad. v. 3. 21.—“Leaves elliptical, fleſhy.”—Native of New York.—*Flowers* white; petals ſubtrifid, ſmaller than the calyx.

4. *H. hirſutum.* Linn. Sp. Pl. 130. Amœn. Acad. v. 3. 21.—“Leaves orbicular, hairy.”—A native of Malabar. —There are no ſpecimens either of this or the laſt ſpecies in the Linnæan Herbarium, nor are they any where figured.

5. *H. umbellatum.* Linn. Sp. Pl. 130. Engl. Bot. t. 27.— “Flowers in umbels.”—This is rather a ſcarce plant, found on old walls, flowering early in the ſpring.—It was firſt detected in England by Mr. Pitchford in the year 1765, on walls in the neighbourhood of Norwich.—The *plant* is in general ſmooth, ſomewhat glaucous. *Stem* branching at the baſe, towards the top hairy and viſcid. *Leaves* oppoſite, ovate, acute. *Umbel* ſimple, terminal. *Peduncles* bracteated, divaricated when the fruit is ripe. *Flowers* white or bluſh-coloured. *Capſule* ſix-toothed. *Stamens* varying from three to ten in number.

This is the only Britiſh ſpecies of *Holoſteum*. It approaches very cloſely in habit to *Ceraſtium*, and was placed in that genus by Mr. Hudſon; but its petals being unequally jagged, and not bifid, warrant its continuance in *Holoſteum*.

HOLOTHURIA, in *Zoology*, a Linnæan genus of the Molluſca tribe of worms, the body of which is detached, cylindrical, thick, naked, open at the extremity, and the mouth ſurrounded by fleſhy tentacula or feelers.

This character aſſociates in the ſame family a number of animals ſo different in form, that it appears ſcarcely poſſible to admit the genus without ſome further modification. It is true that all the ſpecies referred to it by Linnæus and Gmelin are not deſcribed with equal accuracy by their reſpective obſervers, and this conſideration ſhould induce us to ſpeak with caution as to the propriety of reducing ſome particular kinds to the new genera propoſed by ſubſequent authorities. This is not, however, the caſe with all; many have been examined in their native element, and in a living ſtate with unqueſtionable care, and their organization explained in a ſatisfactory manner; upon theſe, therefore, we are enabled to pronounce an opinion, and confining our attention to theſe only we cannot heſitate to believe that the Linnæan holothuriæ are diviſible in a natural arrangement into three, if not a greater number, of diſtinct genera.

The laſt edition of the “Syſtema Naturæ” contains altogether twenty-three ſuppoſed ſpecies of the holothuria, but it is to be obſerved that Gmelin himſelf affixes ſome mark of doubt as to the identity of the true genus to which certain kinds belong; and this not without reaſon, ſince it is clear their eſſential character cannot be reconciled with the natural character of the holothuria tribe in general.

Perhaps Linnæus, in the eſtabliſhment of his genus holothuria, rejected the ideas of Forſkal without ſufficient conſideration. Forſkal, we find from the reſult of his own obſervations on the vermes found in the Arabian ſeas, conceived he had diſcovered, among others, two natural families of theſe marine bodies, and propoſed for their reception the inſtitution of two new genera, to which he applied the ſignificant appellatives of priapus and fiſtularia; theſe Linnæus conſigned to his genus holothuria, and in conſequence moſt probably of his example thoſe genera have never been adopted.

Again, the thalia or thalis genus, ſuggeſted by Brown, is conſolidated by Linnæus with the holothuria. It is probable we may not at preſent ſo clearly underſtand the thalis tribe as to be enabled to form a very poſitive concluſion as to its eſſential characters, though we may, nevertheleſs, obſerve, that it does not ſeem to appertain to the holothuria tribe, being more cloſely allied to that of ſalpa. The obſervations of Boſc are calculated to prove the animals of the thalis kind to be truly ſalpæ, and which, if accurate, muſt occaſion the removal of ſome Gmelinian ſpecies of the holothuria to that genus, as the thalia, caudata, and denudata. Lamarck, however, conceives them equally diſtinct from the holothuriæ and the ſalpæ, and for this reaſon re-eſtabliſhed the genus thalis as originally propoſed by Brown.

As to the propriety of adopting the genus phyſalidis there cannot, we imagine, be any difference of opinion; it is evidently diſtinct from the holothuria.

And, laſtly, we ſhould mention the genus velella, one of thoſe newly inſtituted by the French naturaliſts, and which tends to unite the holothuriæ with the meduſæ by forming an intermediate link between them, and ſtill connecting both. The genus contains two ſpecies, namely, the Velella mutica referred by the Linnæan claſſification to the meduſa tribe under the ſpecific name of velella, and the holothuria tentaculata of Forſkal.

Having pointed out the number of new genera into which the Linnæan holothuriæ are divided by later naturaliſts, it will be proper to ſtate in what material particulars their eſſential characters differ from each.

The true holothuriæ have the body detached, cylindrical, thick, very contractile, with a coriaceous ſkin, and having at the extremity a mouth armed with five calcareous teeth, and a radiation of ramoſe or pinnate tentacula. The genus thalis has the body detached, gelatinous, oval, or oblong, compreſſed at the ſides, and the back either deſtitute of the creſt, or furniſhed only with a very ſhort one, and placed near one extremity; no tentacula under the belly. In the phyſalidis or phyſalia, the body is detached, membranaceous, or gelatinous, oval, compreſſed at the ſides, the back furniſhed with a creſt, and the under part of the belly with a great number of diverſely formed articulated tentacula of different lengths, apparently ſuckers. The body of the velella is detached, elliptic, cartilaginous within, the exterior part gelatinous, and having upon the back an elevated truncated creſt placed obliquely; the mouth beneath and ſituated in the centre. According to the above characters the Gmelinian ſpecies, elegans, pentactes, and priapus: forcipata of O. Fabricius; zonaria of Pallas; and maxima of Forſkal are all of the holothuria genus. The three kinds deſcribed by Brown, thalia, caudata, and denudata, conſtitute the genus thalis. The Linnæan ſpecies phyſalis (Phyſalis pelagica of Oſbeck) is the only example of the genus phyſalidis. And the holothuria tentacula of Forſkal is the velella.

Theſe animals are of the marine kind, and in general ſuppoſed to be viviparous; they live on ſmall fiſhes, worms, teſtaceous bodies, &c. and are uſually diſtinguiſhed by the ſplendour of their colours.

Species.

ELEGANS. With twenty branched tentacula; body papillous, reddiſh above, beneath white. Müll. Stroem. Sondm. &c.

Inhabits the ſeas of Denmark and Norway; the length from eight to eleven inches; body varied with red and white; papillæ pointed, and diſtant, thoſe on the back diſpoſed in ſix ſeries; tentacula fleſhy, and white, the tip furniſhed with a tuft of fibres which are tuberculated within. Squirts out water like a ſiphon from the lower orifice.

FRONDOSA. Tentacula frondoſe; body ſmooth. O. Fabr.

The body ovate; beneath flat, with ten retractile tentacula; the poſterior part conic, perforated at the end. Found in the northern ſeas.

PHANTAPUS. Tentacula branched; poſterior part of the body attenuated; beneath rough with dots. Müll. *Holothuria phantapus,* Linn. *Pudendum miſſum,* &c. Aldr. Geſn. &c.

Native of the Norway and Mediterranean ſeas. The body is ovate, beneath flat; behind conic, with the tip perforated, tentacula 10, and retractile.

TREMULA. Tentacula faſciculate; body covered above with numerous ſub-conic papillæ, beneath with cylindrical ones. *Holothuria tremula,* Linn. *Holothuria tubuloſa,* Gmel. *Holothurius Rondeletii,* Jonſt. *Epipetro zoographi ſimile,* Aldr. *Genitale marinum,* Bell. *Pudendum regale piſcatorium,* Column. *Mentula marina,* Plancus. *Fiſtularia,* Forſk.

Found in the Mediterranean and Adriatic ſeas. Length one foot; the body cylindrical when extended, and oblong when contracted, generally a beautiful mixture of red and white, but it varies in colour; the cylindrical tubes beneath the body act as ſuckers, by means of which it adheres to the rocks.

PHYSALIS. Cirri filiform, pendulous, and of different ſhapes. Linn. *Urtica marina,* Sloane. *Arethuſa criſtata,* &c. Brown. *Phyſalis pelagica,* Oſbeck.

Inhabits the Atlantic ſeas, where it is often ſeen floating in calm weather on the ſurface of the water, and is known to mariners by the name of the Portugueſe man of war; the form ovate, ſomewhat triangular, and hyaline; back acute and duſky green; anterior part reddiſh; ſnout ſpiral and reddiſh; tentacula numerous, unequal, ſome round, thick and ſhort; ſome capillary, with a globular yellow tip, others longer and filiform.

THALIA. Creſt compreſſed; lateral lines entire. Gmel. *Thalia oblonga,* &c. Brown. Jam.

Native of the American and Weſt India ſeas.

CAUDATA. Tailed; creſt compreſſed; lateral lines interrupted. Gmel. *Thalia oblonga, caudata,* &c. Brown.

Inhabits the American ſeas.

DENUDATA. Deſtitute of creſt and tail. Gmel. *Thalia,* &c. Brown.

The body of this ſpecies is oblong, rounded, and gradually tapering to both extremities; the length from three to four inches, diameter one inch; tranſparent, and hollow; the anterior opening triangular, the other rounded. Native of the American ſeas.

PENTACTES. With ten ramified tentacula; body with five rows of papillæ. Müll. *Cucumis marinus,* Geſn. *Cucumer marinus,* Vandell. *Aphrodita quarta,* Hill. *Brimbatus,* Olaff. *Fleurilarde,* Dicquemar.

Length ſix inches; the body greeniſh-brown; tentacula elegantly ramified, of a yellow and ſilver colour; the filaments with ſmall retractile filaments iſſuing from them. Inhabits the ſeas of Europe.

PAPILLOSA. With ten frondoſe tentacula; body ovate, and covered every where with papillæ. Müll. Inhabits the bays of the North ſeas.

SPALLANZANI. With ninety-ſix filamentous tentacula. Spallanz. Native of the Mediterranean.

PRIAPUS. Mouth with fleſhy papillæ; body with annular ſtriæ, and longitudinal ones on the gland. O. Fabr. *Priapus,* Linn.

Inhabits the Indian and Mediterranean ſeas; the length ſix inches. One half of the body cylindrical, with numerous annular ſtriæ, and terminated by the mouth; the other half obovate and gland-ſhaped, with twenty-four longitudinal parallel elevated, diſtant, rough ſtriæ; the aperture concave, and ſurrounded by an excavated annular ſtria, and furniſhed within with numerous recurved ſpines.

SQUAMATA. With eight ſlightly branched tentacula; body rough above, beneath ſoft. O. Fabr., &c. *Actinia ſquamata,* Nov. Act. Nat. Cur. *Aſcidia ſquamata,* Pallas.

Native of the Norway and Greenland ſeas; the ſpecies varies in ſize, and adheres firmly to rocks.

PENICILLUS. With eight branched tentacula; body bony, and five-ſided. Müll.

Lives in the mud in the deeps of the Northern ſeas; the body is immoveable, ventricoſe, ſmooth, white, with a brown collar black at the edges, and a parallel granulated pale ring behind the tentacula, which are carinated and blackiſh-yellow.

FUSUS. With ten tentacula; body fuſiform and downy. Müll.

Like the laſt, inhabits the mud in the deeps of the Northern ſeas. The body is cinereous, rough with minute ſcales, and beſet with very ſhort fibres; protruding a cup-ſhaped hollow body, furniſhed beneath with a neck, and dilated above into an orb, perforated in the middle, with a black foramen, tentacula denticulated at the ſides.

INHÆRENS. Body brown, with longitudinal whitiſh ſtripes, and twelve red tentacula. H. *Inhærens,* Müll. *Fiſtularia reciprocans,* Forſk.

Native of the North and Red ſeas; the body long, narrow, pellucid, and covered with innumerable viſcid papillæ, by means of which it ſticks to whatever it touches; tentacula fleſhy, lanceolate, and denticulated, or ſlightly branched each ſide.

LÆVIS. Elongated, with white tentacula; body with five rows of lines and dots. O. Fabr.

Inhabits the Greenland ſeas, reſiding among rocks, and frequently hiding itſelf in the clay, from whence each alternate tentacula is protruded, while the reſt are contracted; the body is ſoft, ſmooth, whitiſh and pellucid; the length from one to ſix inches; tentacula whitiſh, ſoft, and eight-cleft at the tip.

MINUTA. Oblong, with twelve tentacula; body with five rows of warts. O. Fabr.

Found in the ſame ſeas as the latter, in ſandy bottoms, and moves very ſlowly by means of its extended papillæ. The body four lines in length, glabrous, ſub-membranaceous, whitiſh, and rarely red; each row of papillæ conſiſting of ten; tentacula yellowiſh and ſix-cleft at the tip.

FORCIPATA. Ventricoſe, both ends narrow and conic; the anterior one forcipated. O. Fabr.

Length five inches; the body ſoft, lubricous, with a thin ſkin covered with innumerable ſlightly raiſed dots; forceps rigid, ochrey yellow, with curved fangs. Inhabits clayey bottoms in the Greenland ſeas, and is often devoured by the ſea ſcorpion, Cottus ſcorpio.

ZONARIA. Oblong, depreſſed, with a fleſh-coloured ſheath, and a whitiſh hyaline pouch; body encircled with five yellow zones. Pallas.

Mouth tranſverſe, with prominent gaping lips; inhabits the ſeas about Antigua.

VITTATA. Body ſoft, lax, with white bands dotted with brown; tentacula linear-lanceolate, and toothed at the ſides. Forſk.

The body with five white ſtripes dotted with black, and alternate narrow brown ones dotted with white; tentacula twelve, brown in the middle, and at the ſides paler. Inhabits the Red ſea, among zoſteræ, and adheres to the hands by means of its viſcid papillæ; length a ſpan and a half.

MAXIMA. Body rigid and nearly ſquare; above convex, beneath flat, and edged with white; tentacula filiform, and cut like petals at the tip. *Fiſtularia maxima*, Forſk.

The body about a foot in length, hard, and rough with papillæ; tentacula grey hyaline. Native of the Red ſea.

IMPATIENS. Body rigid and cinereous; tentacula twenty, filiform, ſeven-cleft, and denticulated at the tip. *Fiſtularia impatiens*, Forſk.

Inhabits the ſhores of the Red ſea under ſtones, or in the pores of Spongia officinalis. The body hardiſh, cinereous, varied with ſpots and bands, and rough with hemiſpherical warts, whitiſh in the middle, and contiguous; tentacula hyaline dotted with black, and obtuſely toothed.

NUDA. Orbicular, blue, without creſt; tentacula of the diſk naked; of the rays beſet with three rows of glands. Gmel. *Holothuria denudata*, Forſk.

About an inch in diameter; the body whitiſh in the diſk above, and radiated with concentric ſtriæ, the margin and border blue; tentacula filiform and blueiſh hyaline. Cloſely allied to the meduſa.

SPIRANS. Oval, blue, with oblique divided creſt or veil, and numerous tentacula beneath. Gmel. Forſk.

Native of the Mediterranean; the body thin, convex, and terminating in a whitiſh central protuberance above, blue with brown border; creſt two-parted and ſtriated; tentacula filiform. Length two inches.

TENTACULATA. Oval; tentacula ſurrounding the mouth white. Forſk, &c. An ambiguous ſpecies.

HOLOWNE, in *Geography*, a town of Poland, in the palatinate of Chelm; 28 miles N.E. of Chelm.

HOLQUAHVILT, in *Botany*, a name by which ſome authors have called the tree which produces the Jeſuit's bark.

HOLRAS, in *Geography*, a town of Norway, in the dioceſe of Chriſtianſand; 12 miles S.W. of Chriſtianſand.

HOLRU, a town of Abyſſinia; 65 miles S. of Minè.

HOLSANOE', a ſmall iſland in the N. ſea, near the coaſt of Norway. N. lat. 60° 32'.

HOLSMUNSDEN, or HOLTZMUNDEN, a town of the principality of Wolfenbuttel, on the Weſer; 21 miles W. of Eimbeck.

HOLSOM. A ſhip is ſaid to be holſom at ſea, when ſhe will hull, try, and ride well, without rolling or labouring.

HOLSTABROC, in *Geography*, a town of Denmark, in North Jutland, ſituated on a river, which runs into the North ſea. The trade of the inhabitants chiefly conſiſts in corn, oxen, and horſes; 24 miles W. of Wiborg. N. lat. 56° 22'. E. long. 9° 38'.

HOLSTEIN, DUCHY OF, a country of Germany, in the circle of Lower Saxony. Including the lordſhip of Pinneberg, it is bounded on the N. by the duchy of Sleſwic and the Baltic, on the E. by the Baltic, on the S. by the duchy of Lauenberg, the territories of Lubeck and Hamburg, and the Elbe; and on the W. by the Elbe and the German ſea. It is about 70 miles long from E. to W., and 48 broad from N. to S. Subject to frequent ſtorms and conſequent inundations from its ſituation between the Baltic and the German ſea, its inhabitants are put to great expence in raiſing dykes, particularly in the diſtricts bordering on the German ſea and the Elbe. Theſe diſtricts conſiſt of excellent marſh land, which produce wheat, barley, oats, beans, peas, and rape-ſeed in great plenty. The meadows and paſtures feed great numbers of cattle. The other parts of the country are ſtill more fertile.

Holſtein is divided into four provinces, *viz.* Holſtein Proper, Stormar, Ditmarſen, and Wagria; the three firſt of which were formerly called "Nordalbingia," or "Saxony beyond the Elbe." The Saxons of this country were a free people, till Charlemagne ſubdued them, and removed 10,000 families into Brabant, Flanders, and Holland. By a treaty between this ſovereign and the king of Denmark, the river Eider was fixed as a common boundary of the two countries. The country on the S. of the river was called the Marche, and a marggrave was appointed to defend it. Holſtein Proper and Stormar were erected into a county by Lothario, duke of Saxony, in 1106, in favour of the count of Scauenburg; and his ſon Adolphus II. incorporated Wagria with Holſtein, and peopled the territory with ſtrangers from Holland and Weſtphalia. The territories were afterwards divided into ſeparate principalities; and one of the princes who reigned here obtained from the king of Denmark the inveſtiture of Sleſwick. When this branch became extinct, and the people elected Chriſtian I. king of Denmark, he became duke of Sleſwick, and count of Holſtein, which was ſoon afterwards erected into a duchy. His poſterity reigned here as well as in Denmark. In 1720 the reigning prince of Holſtein Gottorp, founded by the ſecond ſon of Frederick I., was entirely diſpoſſeſſed of his dominions. This prince had eſpouſed Ann, the eldeſt daughter of Peter I. emperor of Ruſſia. In 1743 his ſon, Charles Ulric was, by his mother's ſiſter, Elizabeth, empreſs of Ruſſia, declared grand duke of Ruſſia. The king of Denmark, as duke of Holſtein Gluckſtadt, had formerly a ſeat and voice in the diet of the empire in the college of princes; and the emperor or empreſs of Ruſſia poſſeſſed the ſame prerogatives for Holſtein Gottorp. To the king of Denmark it belonged to appoint a governor over his part of Holſtein, whoſe uſual reſidence was Gluckſtadt, whilſt the regency court for Ruſſian Holſtein was held at Kiel. The principal trading towns are Altona, Gluckſtadt, and Kiel. The exports of Holſtein are wheat, barley, malt, ſtarch, buck-wheat, peas, beans, rape-ſeed, horned cattle, ſheep, rams, ſwine, horſes, poultry, butter, cheeſe, veniſon, and fiſh. Lord Moleſworth obſerves, that Holſtein very much reſembles England; and another traveller has remarked, that the inhabitants are in their perſons very like the Engliſh. Hence it has been inferred, that the Engliſh nation came firſt from this lower circle of Saxony; and in confirmation of this conjecture, it is alleged, that there is an ancient town near it, called Landen, and an iſland called Angles, which gave occaſion to call our Britannia, Anglia. This remark is confirmed by the moſt diligent inquirers into this ſubject, who place the country of our Saxon anceſtors in the Cimbric Cherſoneſe, in the tracts of land ſince known by the names of Jutland, Angelen, and Holſtein.

HOLSTON, a river of America, being a branch of the Teneſſee, which riſes in Virginia, and joins the Teneſſee, 22 miles below Knoxville. At that town it is 300 yards wide, and in a courſe of about 200 miles in length it receives ſeveral conſiderable rivers and ſmaller ſtreams. It is navigable for boats of 25 tons upwards of 100 miles, to the mouth of the N. Fork, where iron-works have been erected upon a large ſcale.—Alſo, a ſettlement on this river, in the ſtate of Teneſſee, containing, in 1790, 28,649 inhabitants. The land is generally fertile, and being ſituated between two mountains, it ſeldom ſuffers for want of rain. It abounds with iron ore. A capital furnace and forge have lately been erected in Holſton, near the Virginia line, a bloomary below the mouth of Watawga, and another 25 miles above the mouth of the French Broad. There are ſeveral lead mines in the ſettlement, and one particularly on the French Broad, that produces 75 *per cent.* pure lead. Morſe.

HOLSTENIUS, or Holstein, Luke, in *Biography*, was born at Hamburg in 1596. Having received a liberal education in his own country he went to Paris, where he acquired a high reputation for learning, but was converted from the principles of Lutheraniſm, in which he had been brought up, to thoſe of Popery. He went from Paris to Rome, where he obtained the patronage of cardinal Francis Barberini, and through his means received diſtinguiſhed marks of favour from the popes Urban VIII., Innocent X, and Alexander VII. By the firſt he was made canon of St. Peter's; by the ſecond librarian of the Vatican; and by Alexander VII. he was ſent to Inſpruck, where he received from queen Chriſtina of Sweden her formal profeſſion of the Chriſtian faith. He died at Rome in the year 1661, leaving behind him a high character for deep learning, a ſound and penetrating judgment, and a fine critical taſte. He was editor of a number of very learned works which he illuſtrated with notes and diſſertations; and he left behind him much valuable matter, which was given to the public after his death, by his friends, in their editions of authors, or in different collections. Among his other pieces was "The Life of Pythagoras, by Porphyry," in Greek and Latin, with a curious diſſertation on the life and writings of Porphyry, and obſervations on the life of Pythagoras. Moreri.

HOLSTER, a caſe for a horſeman's piſtol.

HOLSWORTHY, in *Geography*. See Holdsworthy.

HOLT, when it occurs at the beginning or end of a word, ſignifies that it is, or hath been woody, from the Saxon holt, *a wood*, or ſometimes poſſibly from the Saxon hol, *hollow*. Johnſon.

Holt, *Sir* John, an eminent lawyer and judge, ſon of ſir John Holt, ſerjeant at law, was born at Thame, in Oxfordſhire, in 1642. He received the firſt principles of learning at Abingdon, of which town his father was at that time recorder: he afterwards went to Oriel college, Oxford, and from thence was entered a ſtudent at Gray's Inn. He ſoon became diſtinguiſhed as a barriſter, and in the reign of James II. he was made recorder of London, ſoon after which he was called to the degree of a ſerjeant of the law. By refuſing to give aſſiſtance to the arbitrary meaſures of the king, he was removed from the recorderſhip of the city, but he retired with the approbation of an honeſt mind, and the regrets of the people, of whoſe cauſe he was always the advocate in ſpite of the authority and influence of the court. His principles were too well known for him to be forgotten in times of emergency, and he was choſen member of the convention parliament in 1688, and he was appointed one of the managers for the commons at the conferences held concerning the vacancy of the throne. In 1689 he was raiſed to the dignity of lord chief juſtice of the king's bench, and admitted to the honour of privy counſellor. He refuſed the poſt of chancellor offered him at the death of lord Somers, and continued as chief juſtice till his death in 1709. He is memorable among the Engliſh judges for a thorough knowledge of the law, joined to an invincible firmneſs and reſolution in ſupporting its authority. He held in contempt the aſſumed powers of a houſe of commons, when thoſe powers were evidently hoſtile to the common law of the land. He was the intrepid aſſertor of the rights and liberties of the ſubject, and was remarkably jealous of the interference of the military power in the execution of the laws: of which he gave a very ſignal proof when applied to ſanction, by the preſence of one of his people, the proceedings of the military ſent to quell a riot excited by the infamous practice of crimping. The chief juſtice aſked the officer what he intended to do if the populace refuſed to diſperſe, he replied, "we have orders to fire upon them:" "Have you ſo?" ſaid the judge, "then obſerve, if one man is killed, I will take care that you and every ſoldier of your party ſhall be hanged. Sir, acquaint thoſe who ſent you, that no officer of mine ſhall attend ſoldiers, and let them know, likewiſe, that the laws of this land are not to be executed by the ſword. Theſe things belong to the civil power, and you have nothing to do with them." Such patriotic and virtuous conduct as this chief juſtice ever manifeſted, has not frequently been found in perſons filling that high office. Few inſtances, indeed, have been found, in which judges have not acted the upright and honourable part in all cauſes of individuals brought before them; they have no motive to act otherwiſe: but the inflexible integrity of a judge is brought to the teſt when great political queſtions are to be decided: when one of the people, who is but as duſt in the balance, is about to be borne down by a whole branch of the legiſlature, in ſuch a caſe lord chief juſtice Holt was tried, and his deciſion has inſured for him an unfading immortality. Britiſh Biog.

Holt, in *Geography*, a market town and pariſh in the hundred to which it gives name, in the county of Norfolk, England, is pleaſantly ſituated on an eminence, 121 miles diſtant from London. Great part of the town was deſtroyed by fire in the year 1708, ſince which time many good houſes have been erected. The enumeration under the late act of parliament was 215 houſes, and 1004 inhabitants. The quarter-ſeſſions of the peace are holden here, by adjournment from the city of Norwich. The ſeſſions-houſe, which is a handſome building, is occaſionally uſed for holding ſubſcription aſſemblies. A conſiderable free-ſchool was founded here, in the year 1556, by ſir Thomas Greſham, who was a native of this town, and whoſe memory is perpetuated by the building of the royal exchange, London. The ſchool is well endowed for 30 ſcholars, and has annexed to it a ſcholarſhip and fellowſhip in Sydney college, Cambridge. The patronage and government of the ſchool are, by the appointment of the founder, veſted for ever in the company of fiſhmongers of London. Two fairs are annually held here;

and a weekly market on Saturday. Blomefield's Hiſtory and Antiquities of Norfolk.

Holt, a townſhip and chapelry in the pariſh of Greſford, and hundred of Bromfield, Denbighſhire, Wales, is ſeated on the banks of the river Dee, and was formerly a market town. At this place the river ſeparates England from Wales, the county of Cheſter being on one ſide, and that of Denbigh on the other. Theſe are united by a bridge of 10 arches, which is ſaid to have been built in the year 1345. On the banks of the river formerly ſtood a ſtrong caſtle, which is now nearly levelled to the ground. It was garriſoned for Charles I. in 1643, but, with other fortreſſes in this part of the country, was taken by the parliamentary forces. The inhabitants of Holt, Denbigh, and Ruthin, jointly ſend one member to parliament. In 1801 this townſhip contained 161 houſes and 804 inhabitants. Pennant's Tour in Wales, vol. i. 4to.

Holt, a town of Norway, in the dioceſe of Chriſtianſand; 32 miles N.N.E. of Chriſtianſand.—Alſo, a town of Germany, in the duchy of Cleves; 27 miles S.E. of Cleves. N. lat. 51° 39′. E. long. 6° 26′.

Holt, a village of England, in the county of Wilts, ſeven miles E. of Bath; it has a medicinal ſpring.

Holt, in *Rural Economy*, the name of a morbid affection of the feet of different domeſtic animals. The hoof and feet in this caſe ſhould be carefully examined, and the cauſe aſcertained.

Holt-*waters*. Theſe have been found by experience to be of admirable efficacy in all ſcorbutic and ſcrophulous caſes. An account of ſome very remarkable cures performed by them in theſe caſes, was printed ſeveral years ago; and though known to be fact in the place, was diſbelieved by almoſt every body beſide.

Mr. Lewis, formerly miniſter of the place, confirms their efficacy from his own obſervation; and obſerves that they are of an attenuating, aſtringent, and drying nature. The firſt of theſe properties they poſſeſs in common with all waters which dilute, attenuate, and fit the juices for paſſing the proper veſſels; their aſtringency they owe to the alum and iron which they contain; and their drying, abſorbing, and healing qualities are probably owing to a quantity of ſulphur, and a fine light ochre, which they are impregnated with. Phil. Tranſ. N° 408.

Holt's *Creek*, in *Geography*, a river of America, in the ſtate of Kentucky, which runs into the river Kentucky, N. lat. 38° 37′. W. long. 84° 18′.

HOLTALEN, a town of Norway, in the dioceſe of Drontheim; 54 miles S. of Drontheim.

HOLTEN, a town of Norway, in the government of Aggerhuus, remarkable for its church, which is cut out of a rock; it is very ancient, and ſuppoſed, by Olaus Wormius, to have been an heathen temple; 15 miles N.W. of Tongſberg.

HOLTZBAUER, in *Biography*, in 1772 maeſtro di cappella to the elector palatine at Manheim, when his electoral highneſs had the beſt inſtrumental band in Europe, and operas compoſed expreſsly for his theatre by the greateſt maſters of the time. Holtzbauer, who had been in Italy, was not only an excellent compoſer of ſymphonies on the model of the elder Stanitz, but the opera ſinging-maſter. The Danzi, afterwards Madame Le Brun, and the Allegranti, were his ſcholars.

HOLTZBOGN, an excellent performer on the violin in the ſervice of the elector of Bavaria, in 1772. He was a ſcholar of Tartini, had a great hand, a clear tone, and more fire than was uſual in performers of the Tartini ſchool, which was rather remarkable for delicacy, expreſſion, and highfiniſhing, than for ſpirit and variety. Holtzbogn wrote well for his inſtrument, and we heard him play a very maſterly concerto of his own compoſition.

HOLTZHAUSEN, in *Geography*, a town of Germany, in the biſhopric of Munſter; 8 miles N.W. of Munſter.

HOLTZKIRCHEN, a town of Bavaria; 18 miles S.S.E. of Munich.

HOLUAN, Holwan, or *Hulvan*, a town of the Arabian Irak; 110 miles N.N.E. of Bagdad. N. lat. 34° 50′. E. long 44° 54′.

Holuan, a town of Egypt, on the right bank of the Nile; 12 miles S. of Cairo.

HOLUM, or Hoalum, or *Hola*, a town of Iceland, at the mouth of a ſmall river, the ſee of a biſhop, founded about the year 1106, and ſince improved by Chriſtiern III. Here are a ſchool, cathedral, and printing office. N. lat. 65° 43′. W. long. 15°.

HOLWELL, John Zephaniah, in *Biography*, was born about the year 1709. He went out in early life as a writer in the ſervice of the Engliſh Eaſt India company, and by his aſſiduity he gradually roſe in office till the year 1756, when he was appointed ſecond in council at Fort William. At this period, an offence having been given to the nabob of Bengal, induced him to lay ſiege to that fort with a powerful army. The governor fled, and the command devolved on Mr. Holwell, who, with a few men, was reſolved to defend the place to the laſt extremity. He was, however, obliged to ſurrender, but on the promiſe of ſecurity to their perſons, in violation of which he and his men were ſhut up in a ſmall room, ſince denominated the *black*-hole of Calcutta, which ſee. Of the ſurvivors who eſcaped this infernal charnelhouſe, Mr. Holwell was one, who became the hiſtorian of the ſufferings which were endured on that occaſion; and when Calcutta was brought under the Britiſh dominion he raiſed a monument on the ſpot, at his own expence, to the memory of the unhappy victims, and to record the infamy of him who could perpetrate ſo black a deed. On his return to England Mr. Holwell wrote various tracts upon the concerns of the India company, and he entered deeply into the hiſtory and mythology of the natives of Hindooſtan, concerning which he gave the public ſome curious information in a work entitled "Intereſting hiſtorical Events relative to the Provinces of Bengal and the Empire of Indoſtan." In this he gives a very particular account of the Gentoo Shaſtah, which he repreſents as the oldeſt religious inſtitute extant, and the genuine ſource of the mythology and coſmogony of the Egyptians, Greeks, and Romans. He publiſhed another work, in 1788, connected with this ſubject, entitled "Diſſertations on the Origin, Nature, and Purſuits of Intelligent Beings," &c. The idea that men are fallen angels, condemned to ſuffer in human bodies for the ſins of their former ſtate, is the leading principle of this production. Mr. Holwell was author of ſeveral other pieces, one on inoculation for the ſmall-pox in the Eaſt Indies, with the mode of treating the diſeaſe in that part of the world, and one entitled "A new Experiment for the Prevention of Crimes," which chiefly conſiſts in propoſed premiums for the practice of virtue. He died in 1798, much reſpected by all who knew him. His works diſplay a benevolent heart, and a liberal way of thinking. There is ſtill living, at a very advanced age, in the neighbourhood of London, Captain Mills, one of the fellow ſufferers with Mr. Holwell in the black-hole of Calcutta.

HOLY, halız, Saxon, or *heyligh*, Dutch, from hal, *healthy*, or in a ſtate of ſalvation. The term is variouſly applied; ſometimes in the ſame ſenſe with good, or religious, or ſacred, and ſometimes for hallowed, or appropriated to religious or ſacred purpoſes. Thus, it is uſed in the ſame ſenſe with ſanctified, *i. e.* ſeparated from ordinary uſe, and appropriated to pious or religious purpoſes. In this ſenſe it has been applied to perſons, places, and things. See Holyness.

Holy, *Cape*, in *Geography*, a cape in the Frozen ocean. N. lat. 72° 32′. E. long. 179° 40′.

Holy *Fire*. See Fire.

Holy *of Holies*, called alſo the "moſt holy place," and the "oracle," becauſe God here gave his anſwers to the high prieſt, when conſulted by him, an apartment of the Jewiſh temple, which was divided, in the firſt temple, from the "holy place" by a partition of boards overlaid with gold, in which there was a door-place with a vail over it. It was 20 cubits in length. Although the "holy place" was reckoned very ſacred, yet it was not to be compared in this reſpect with the "moſt holy," which was regarded as the palace of God. For this reaſon none but the high prieſt was permitted to go into it, and that but once a year, *viz.* on the great day of expiation (Exod. xxx. 10. Lev. xvi. 2. 15. 24. Heb. ix. 7.), on which day, as the Jews tell us, it was lawful for him to go in ſeveral times. This part of the temple, as well as the whole building, was ſurrounded with rooms and apartments for different uſes. The roof of the "holy of holies" was not flat, as in the other parts of the temple, and in eaſtern houſes in general, but ſloping, as in our buildings; and, according to Joſephus (De Bell. Jud. l. vi. c. 6.) it was covered and armed all over with pointed ſpikes of gold, to keep off the birds from neſtling upon it. Although the roof was inacceſſible to all, yet there was round it a kind of rail or baluſtrade, according to the law (Deut. xxii. 8.) to keep any one from falling down that ſhould happen to go there. The "holy of holies" was at the weſt end of the temple, and the entrance into it toward the eaſt, contrary to the practice of the heathens. The greateſt ornament of the "holy of holies" was wanting in the ſecond temple, *viz.* the Ark *of the Covenant*, or *Teſtimony*, which ſee.

Holy *Place*, or *Sanctuary*, an apartment of the Jewiſh temple called by the Jews the "outer houſe" (it being ſuch in reſpect of the "holy of holies"), was ſituated between the porch and the moſt holy place, being 20 cubits broad, and 40 in length and height. It had two gates, one of which was called the *leſſer*, through which they paſſed in order to open the *great* gate, which had four folding doors. The ſanctuary was divided from the holy of holies neither by a wall nor gate, but only by a double vail. This is ſuppoſed to have been the vail which was rent in twain at our Saviour's death (Matt. xxvii. 51.), becauſe it was to be of no further uſe. It ſeems to be alluded to in Rev. xi. 19. xv. 5. See Sanctuary.

Holy *Ghoſt*, *Order of the*, is a military order in France; the principal in point of dignity in that kingdom.

It was inſtituted by king Henry III. in 1579, in memory of three great events happening on the ſame day, or Whitſunday: *viz.* his birth, acceſſion to the crown of France, and election to that of Poland; the order was to conſiſt of a hundred knights only, who, to be admitted, were to make proof of their nobility for three deſcents.

The king was the grand-maſter, or ſovereign, and took the oath as ſuch on his coronation day; whereby he ſolemnly vowed to maintain for ever the order of the Holy Ghoſt; and not to ſuffer it to ſhrink, fall, or diminiſh, ſo long as it ſhould be in his power to hinder it; nor even to attempt to alter or diſpenſe with any of the irrevocable ſtatutes of the order.

The knights were all to wear a gold croſs, hung about the neck by a blue ſilk ribband, or collar, hanging ſcarfwiſe from the left ſhoulder; and the officers and commanders are alſo to wear the ſame croſs, embroidered in ſilver, ſewed on the left ſide of their cloaks, robes, and other upper garments.

Before they received the order of the Holy Ghoſt, that of St. Michael was conferred, as a neceſſary degree, for which reaſon their arms were ſurrounded with a double collar.

The collar of the order, at its firſt inſtitution, was compoſed of fleurs-de-lis or, cantoned with flames of the ſame, enamelled gules, intermixed with three cyphers, or monograms, of gold, compoſed of the letters H and L, enamelled white; which letters were the initials of the inſtitutor's name, and that of his wife Louiſa of Lorrain. Henry IV. altered the cypher into a trophy of arms. Afterwards the collar was compoſed of fleurs-de-lis, cantoned with flames and trophies of arms; and at the bottom hung a gold croſs of eight points, enamelled on the edges white, with a fleur-de-lis or, at each angle, and in the middle a dove. In an oval, on the back of the croſs, was repreſented St. Michael trampling on the dragon, all proper.

Holy *Ghoſt*, *Order of*. See Dove.

Holy *Ghoſt*, *Croſs of the*, in *Heraldry*, conſiſts of a circle in the middle of a croſs, and on it the Holy Ghoſt, in figure of a dove: the four arms are drawn narrow from the centre, and widening to the ends, where the returning lines divide each of them into two ſharp points; upon each of which is a pearl.

From the intervals of the circle between the arms iſſue four fleurs-de-lis. This was the croſs worn by the knights of the order of the Holy Ghoſt in France.

Holy *Rood*, in *Geography*, a bay in Newfoundland iſland, at the head of Conception bay.

Holy *Roſe*, or *Rock*-Rose, in *Botany*. See Cistus.

Holy *Sepulchre of Jeruſalem*, *Knights of the order of the*, an order which, according to ſome, was inſtituted by Godfrey of Bouloigne, on the ſeventeenth day of July, in the year 1099; and, according to others, by his brother Baldwin, ſecond king of Jeruſalem, in the year 1103. The badge of this order was a croſs potent gold, cantoned with four croſſes of the ſame, without any enamel, pendent at the breaſt to a black ribband; and a like croſs embroidered on the left ſide of the white cloak or mantle, which the knights were conſtantly to wear.

Holy *Thiſtle*, in *Botany*. See Centaurea *Benedicta*.

Holy *Thurſday*, is what we otherwiſe call *Aſcenſion day*.

Holy *Week* is the laſt week of Lent, called alſo *Paſſion Week*.

Holy *Year* is ſometimes uſed for the year of *jubilee* (which ſee); and ſometimes for the eccleſiaſtical year of the Jews. See Year.

HOLYCROSS, in *Geography*, a village in the county of Tipperary, province of Munſter, Ireland, remarkable for the ruins of an abbey which belonged to the Ciſtercian order of monks. The lands belonging to this abbey were an earldom, and the abbot, according to Archdall, was ſtyled *earl of Holycroſs*: he was certainly a baron of parliament, and was uſually vicar-general of the Ciſtercian order in Ireland. A particular account of the buildings may be found in Archdall's "Monaſticon Hibernicum;" but it will ſuffice to obſerve here, that they appear to have been very unequal, ſome being built of marble and highly finiſhed, whilſt other parts are miſerably mean. Theſe ruins cover a conſiderable ſpace, near the banks of the river Suire. A pariſh church and a few wretched cabins are the only remains of a once celebrated place. It is ſeven miles from Caſhel, on the road to Thurles and Nenagh.

HOLYHEAD, a ſea-port, market-town, and pariſh in the iſland of Angleſea, North Wales, ſtands on a peninſula at the weſtern end of the iſle. In the Britiſh language it is called Caer-Gybi, or the fort or caſtle of Gybi. Having been for many years a ſtation for veſſels that ſail between Ireland and England, it has thereby become a place of trade and public reſort. The diſtance from Holyhead to Ireland is twenty leagues; and for the conveyance of letters, paſſengers, &c. between thoſe places, one packet ſails hence every day in the week excepting on Thurſdays. It generally reaches the oppoſite coaſt in twelve hours; but in ſtormy or calm weather, the time of the paſſage is very uncertain: ſometimes the veſſel has remained at ſea for two or three days, but when the wind is favourable, the voyage may be performed in ſix, ſeven, or eight hours. The church-yard at this place is a vaſt maſs of rock, cloſe to the ſea, and is environed by a wall. Pennant deſcribed this to be ſeventeen feet high, and ſix thick on three ſides of the incloſure, and on the other ſide it has only a parapet wall, the natural boundary being a precipitous rock. "At each corner of the wall is an oval tower. The maſonry of the whole is evidently Roman: the mortar very hard, and mixed with much coarſe pebble. Along the walls are two rows of round holes, about four inches in diameter, which penetrate them. The uſe of this harbour to the Romans, in the paſſage from various places to the ports of Lancaſhire and that of Cheſter, is very evident. They could not find a better place to run into, in caſe of hard weather, than this, as it projected fartheſt into the Vergivian ſea; ſo that they could reach it with leſs danger of being embayed than in any other place." (Pennant's Tour in Wales, vol. ii.) In the vicinity of the town, this author viſited and has left us accounts of other antiquities. On the ſummit of the hill called Pen-Caer-Gybi, are ſome remains of an ancient circular building, which Mr. Pennant conjectures was a Roman *Pharos*, or watch-tower. Remnants of a long wall, built without mortar, were found on the ſide of the hill; and ſome ruins of an edifice, called Capel y Gorles, were remaining between the town and the mountain. In the town was a religious houſe, ſaid to have been erected in the latter part of the ſixth century. A college was alſo founded here ſoon after the year 1137, by Hwfa ap Cynddelw, lord of Llys-Llifon. The preſent pariſh church belonged to the college; but the oldeſt parts of the architecture do not appear to be anterior to the reign of king Edward III. A public ſchool was eſtabliſhed here in 1745. A large inn and hotel, an aſſembly room, and ſome baths have been erected at Holyhead, within the preſent century, and various improvements have been lately made to the town and harbour. The former conſiſts of one principal ſtreet, with ſeveral detached buildings, and according to the population report of 1801 then contained 503 houſes, and 2132 inhabitants. Here is a weekly market on Saturdays. The harbour is formed by cliffs beneath the church-yard, and a ſmall iſland called Ynys-Gybi, on which is a light-houſe. Pennant's Tour. Beauties of England and Wales, vol. xvii.

HOLYNESS, or Holiness, ſanctity; the quality which conſtitutes or denominates a perſon or thing *holy*; *i. e.* pure or exempt from ſin.

Holyness is alſo uſed in reſpect of perſons and things that are ſacred; *i. e.* ſet apart to the ſervice of God, and the uſes of religion.

In this ſenſe we ſay, holy days, holy ordinances, the holy Bible, holy Goſpels, holy war, &c. The Roman Catholics call the inquiſition the holy tribunal; the ſee of Rome, the holy ſee, &c.

Holy oil, holy water, &c. See Unction, Water, &c.

Paleſtine is particularly called the holy land; and Jeruſalem the holy city. Princes formerly made a practice of going to ſignalize their religion in the Holy Land; who would have manifeſted the more genuine ſpirit of religion by ſtaying at home. See Croisade.

In Romiſh countries, one-third part of the year is taken up in holy days, ſaints days, &c. See Feasts.

Urban VIII. iſſued out an edict in the year 1643 for diminiſhing the number of holy days.

In Scotland they obſerve no ſtated holy days, beſides Sundays.

By a decree iſſued at Paris, April 9, 1802, the feaſts to be celebrated in France, beſides Sundays, are, the nativity of our Saviour Jeſus Chriſt, Aſcenſion day, the Aſſumption of the moſt bleſſed Virgin, and the feaſt of All-ſaints.

Holyness is alſo a title of quality, attributed to the pope, as that of majeſty is to kings.

Anciently the ſame title, holyneſs, was given to all biſhops; as appears in St. Auguſtine, Fortunatus, Nicholas I., Caſſiodore, &c. St. Gregory compliments ſome of his contemporary biſhops with your beatitude and your holyneſs.

The Greek emperors of Conſtantinople were alſo addreſſed under the title of holyneſs, on account of their being anointed with holy oil at their coronation. Du Cange adds, that ſome of the kings of England have had the ſame attribute; and that the Orientals have frequently refuſed it to the pope.

HOLY-ROOD Day, a feſtival obſerved by the Roman Catholics, in memory of the exaltation of our Saviour's croſs. See Cross and Exaltation.

HOLY-WATER Sprinkle, among *Hunters*, ſignifies the tail of a fox.

HOLYWELL, in *Geography*, a market town and pariſh in Flintſhire, North Wales, derives its name from a copious ſpring, or well, which was much frequented in former times by religious devotees, who fancied that its waters were ſupernaturally efficacious in curing certain diſorders and purifying the body. In the preſent day, the ſame ſtream is rendered more uſeful to mankind, by being applied to mechanical and manufacturing purpoſes. It is ſo highly important and ſingular, and its hiſtory ſo illuſtrative of ancient monaſtic ſuperſtition and craft, that it will be intereſting to narrate a few particulars. The legendary origin of the well ſtates, that Wenifred, or St. Wenifrede, was a beautiful and devout virgin, who lived in the early part of the ſeventh century. She was placed under the protection of a relation, who had founded a church here. A young prince, named Cradock, attempted to ſeduce her, but ſhe fled towards the church for ſafety. In her road to this place of ſanctuary, ſhe was overtaken by the prince, who, enraged by diſappointment, ſtruck off her head. "This, like an elaſtic ball, bounded down the hill, through the door of the church, and up one of the aiſles, directly to the altar, where her friends were aſſembled at prayers; reſting here, a clear and copious fountain immediately guſhed out. St. Beuno ſnatched up the head, and again joining it to the body, it was, to the ſurpriſe and admiration of all preſent, immediately reunited to the body." Such is the monkiſh origin of the well: and when ſuch a miracle was induſtriouſly circulated, it would neceſſarily excite the aſtoniſhment and reverence of the credulous. Not ſatisfied with ſuch fables, the preſent age has aſſigned a natural and probable origin to the ſpring, by aſcribing it to phyſical cauſes. At the foot of a ſteep hill, and from an aperture in a rock, ruſhes forth a torrent of water, which, from its quantity and regularity, is calculated to aſtoniſh the ignorant and intereſt the geologiſt. It has been aſcertained that this ſpring diſcharges not leſs than eighty-four hogſheads of water in a minute. This is never known to freeze, and the current rarely ever varies in quantity; and from its rapid courſe and quantity, it becomes of ineſtimable value; for though the water has only a mile and 124 yards to flow in its progreſs to the ſea, it turned, a few years ago, the machinery to eleven different extenſive mills. Theſe appertained to ſo many manufactories, &c. for cotton and twiſt, corn, braſs-battery copper, copper wire, braſs-milting, &c. Connected with theſe were nearly forty veſſels, from thirty to fifty tons burthen each, to convey the ſeveral manufactures and the materials to and from Liverpool and other ſea-ports. Over the well is a beautiful polygonal building, ſupported by pillars and arches. The roof, ſays Mr. Pennant, is moſt exquiſitely carved in ſtone. Sculptured ornaments of groteſque animals, armorial inſignia, &c. are attached to different parts of the building. Some of the latter relate to the Stanley family, by one of whom it was probably erected, either in the reign of Henry VI., or Henry VII. An apartment over the well was a free chapel.

Of Holywell town, Mr. Bingley obſerves, that he knows of none in North Wales that, in a commercial view, is of more importance. The numerous manufactures in its vicinity, and its eaſy acceſs to the ſea, have rendered it the great mart of this part of the kingdom. The town is ſpacious, but irregular, pleaſantly ſituated on the ſlope of a mountain, which extends nearly to the water. Many of the houſes are good, and give to it an air of conſiderable opulence. At the baſe of the hill, near the well, is the pariſh-church, which was built in the year 1769, on the ſcite of a more ancient edifice. "It has only one bell," ſays Mr. Pennant, "and that not to be heard at any diſtance; ſo that the congregation is aſſembled by a walking-ſteeple, a man with a ſmall bell who ſounds the notice through the ſtreets." At a ſhort diſtance north of the town, in a narrow, retired vale, are ſome remains of Baſingwerk or Greenfield abbey. Of this building the walls, and ſome pillars of the refectory, are the chief remnants. The knights templars had an elegant chapel here. Veſtiges of Baſingwerk caſtle remain on an eminence near the monaſtic ruins; alſo, ſome mounds called Watt's dyke: this was a bold rampart of earth, which extended from Holywell to Oſweſtry in Shropſhire, and runs nearly parallel with the more noted Offa's dyke. Pennant's Hiſtory of Whiteford and Holywell, 4to. 1796, and Bingley's North Wales, two vols. 8vo. 1804.

HOLZAPFIL, a town of Germany, and capital of a county of the ſame name, ſituated on the borders of the Lahn, erected into a principality of the empire by Ferdinand III. This town lies at the foot of a mountain, on which is the tower of an ancient caſtle, the original ſeat of the princes of Naſſau; 4 miles N.E. of Naſſau. N. lat. 50° 20'. E. long. 7° 52'.

HOLZKIRCHEN, a town of Germany, in the county of Wertheim; 9 miles E. of Wertheim.

HOMA, a town of South America, in the government of Buenos-Ayres; 15 miles S. of Corrientes.

Homa, in *Surgery*, an anaſarcous or dropſical ſwelling.

HOMAGE, in its general ſenſe, denotes the reverence, reſpect, and ſubmiſſion, which a perſon yields his maſter, lord, prince, or other ſuperior.

The word is formed of the Latin *homo, man*; becauſe when the tenant takes his oath, he ſays, *Ego devenio homo veſter, I become your man*; for the ſame reaſon homage is called *manhood*; ſo the homage of his tenant and the manhood of his tenant are the ſame. Coke on Littl. fol. 64.

Homage, *Homagium*, *Hominium*, in *Law*, is an engagement or promiſe of fidelity; which the vaſſal, or tenant who holds a fee, renders to the lord, when admitted thereto.

In the original grants of lands and tenements, by way of fee, the lord did not only oblige his tenants to certain ſervices, but alſo took a ſubmiſſion, with promiſe and oath, to be true and loyal to him, as their lord and benefactor.

This ſubmiſſion, &c. is called homage; the form whereof, as appointed by ſtat. 17 Edward II. is in theſe words; When a free man ſhall do homage to his lord, of whom he holdeth in chief, he ſhall hold his hands together, between the hands of his lord, and ſhall ſay thus: "I become your man from this day forth, for my life, for member, and for worldly honour; and ſhall owe you my faith for the land I hold of you; ſaving the faith that I owe unto our ſovereign lord the king, and to mine other lords."

In this manner the lord of the fee, for which homage is due, takes homage of every tenant, as he comes to the land or fee. Glanvil, indeed, excepts ſome women; who only perform homage by their huſbands; becauſe homage is ſuppoſed to have a more immediate relation to ſervice in war: but Fitzherbert denies this exception. Nat. Brev. fol. 157.

It is added, that biſhops do no homage, but only fealty; and probably for the ſame reaſon as women. Yet do we read, that the archbiſhop of Canterbury does homage on his knees to our kings, at their coronation; and that the biſhop of Man was homager to the earl of Derby.

Fulbeck reconciles this: by our law, ſays he, a religious man may do homage, but may not ſay to the lord, *Ego devenio homo veſter*; becauſe he has already profeſſed himſelf to be only God's man; but he may ſay to him "I do unto you homage, and to you ſhall be faithful and loyal."

Homage and fealty, or faith, are two diſtinct things, and different duties. See Fealty.

Originally homage was performed by the gentlemen, and fealty by the peaſant. Others ſay, that homage was that performed to the lord himſelf, and fealty to his ſeneſchal, or ſteward, for his lord. It is added, that he who holds lands for term of life, owes homage, but not fealty.

Biſhops take the oath of fealty and loyalty to the king, for the temporalities they hold of him, or which are reſtored to them; and at the ſame time do homage to their ſovereign.

Homage-*Fee*. See Fee.

Homage-*liege*, a more extenſive kind of homage, whereby the vaſſal held of the lord, not only for his land, but his perſon; ſo that the lord might uſe him againſt all mankind, whether within or without the kingdom; excepting againſt the king. See Liege.

This kind of homage was rendered bare-headed, with the hands joined on the Goſpels, and one knee on the ground, and without ſword, girdle, or ſpurs. By which it was diſtinguiſhed from frank homage. See Allegiance.

There are alſo other diſtinctions of homage; as,

Homage, *Plain*, or homage of a fee; where no oath of fidelity is taken.

Homage *of Devotion*, which is a donation made to the church; and does not import any duty, or ſervice at all.

Homage *of Peace*, which a perſon makes to another after a reconciliation, as an aſſurance that he will no longer diſturb his peace, &c.

Homage, *Simple*. See Allegiance.

Homage, again, is divided into *new*, or that performed upon the grant of the fee; and *aunceſtrel*.

Homage, *Aunceſtrel*, is where a man and his anceſtors, time out of mind, have held their land of the lord, and his anceſtors, by homage.

If ſuch lord have received homage, he is bound to acquit the tenant againſt all other lords above him, of every manner of ſervice; and if the tenant has done homage to his lord, and is impleaded, and vouches the lord to warranty, the lord is bound to warrant him; and if the tenant loſe, he ſhall recover in value againſt the lord ſo much of the lands as he had at the time of the voucher, or any time after.

Homage is alſo uſed for a jury, in a court-baron, becauſe commonly conſiſting of ſuch as pay homage to the lord of the fee. See Jury, Court-baron, and Manor.

Homage is alſo taken, in ſome caſes, for the particular place, or diſtrict, where the ſervices are to be performed.

HOMAGER, a perſon that does, or is bound to do, homage to another.

HOMAGIO Respectuando, a writ iſſued out to the eſcheator commanding him to deliver ſeiſin of lands to the heir that is of full age, notwithſtanding his homage not being done.

HOMAGIUM Reddere has been uſed to ſignify, to renounce homage: as where the tenant or vaſſal, made a ſolemn declaration of diſavowing his lord, for which there was a form preſcribed by the feudatory laws.

HOMALIUM, in *Botany*, is a genus ſo named by Jacquin, as he informs us, from ὁμαλης, *equality*, becauſe of the equal diſpoſition of the ſtamens. Jacq. Amer. 170. Schreb. 366. Willd. Sp. Pl. v. 2. 1225. Mart. Mill. Dict. v. 2. Swartz. Ind. Occ. v. 2. 988. Prodr. 86. Juſſ. 343. Lamarck Illuſtr. t. 483. (Racoubea; Aubl. Guian. v. 1. 589. t. 236.) Claſs and order, *Polyandria Trigynia*. Nat. Ord. *Roſaceæ*, or perhaps *Rhamni*, Juſſ.

Gen. Ch. *Cal.* Perianth of one leaf, divided into ſix or ſeven ovate-lanceolate, acute, widely-ſpreading ſegments. *Cor.* Petals ſix or ſeven, ovate, flat, a little longer than the calyx, ſpreading; nectary conſiſting of ſix or ſeven flat glands, which are alternate with the petals. *Stam.* Filaments varying from 18 to 28, awl-ſhaped, erect, the length of the corolla, three or four of them being inſerted into the receptacle, between the glands, within the baſe of each petal; anthers roundiſh, ſmall. *Piſt.* Germen roundiſh, hairy, immerſed in the baſe of the calyx; ſtyles three or more, erect; ſtigmas ſimple. *Peric.* Capſule woody, ovate, of one cell. *Seeds* numerous, ſmall.

Eſſ. Ch. Calyx ſix or ſeven-cleft. Corolla of ſix or ſeven petals. Stamens three in a bunch. Capſule of one cell, with many ſeeds.

Obſ. All the parts of the flower are permanent. This genus is ſuppoſed to be akin to *Blackwellia* of Commerſon and Juſſieu, (which is different from *Blackwellia* of Gærtner, t. 117), but the inſertion of the ſtamens is thought to diſtinguiſh them; ſee Willd. Sp. Pl. v. 2. 930. Lamarck. Illuſtr. t. 412. Juſſ. 343. We feel a ſtrong inclination to unite the two genera, but in deference to ſuch authorities ſhall now only ſpeak of undoubted ſpecies of *Homalium*.

1. *H. racemoſum*. Willd. n. 1. Jacq. Amer. 170. t. 183. f. 72. Swartz. Ind. Occ. v. 2. 989. Lamarck Illuſtr. t. 483. f. 2.—Leaves elliptical, with ſhallow ſerratures. Partial flower-ſtalks longer than the calyx. Petals ovate.—Native of banks of rivers in Martinique and Jamaica, flowering late in the autumn.—A lofty *tree*, with a tufted head, in habit like an elm. *Flowers* in bunches. *Stamens* 18 or 21, ſo that three are placed together within each petal. *Germen* ſurrounded by the calyx. *Seeds* browniſh.

2. *H. Racoubea*. Willd. n. 2. Swartz. Ind. Occ. v. 2. 991. Lamarck Illuſtr. t. 483. f. 1. (Racoubea guianenſis; Aubl. Guian. 590. t. 236.)—“ Leaves elliptical, with broad ſerratures. Partial flower-ſtalks ſhorter than the calyx. Petals ovate.—A native of the woods of Guiana, flowering and bearing fruit in May.—*Stem* about four feet high, bearing tortuous *branches* ſix or eight feet long. *Leaves* alternate, ſmooth, ovate, obtuſely pointed. *Flowers* yellow. This ſpecies is very nearly allied to the laſt, but differs in having its leaves almoſt toothed and leathery, flowers larger, and fruit woody.

3. *H. anguſtifolium*. Sm. MSS. Leaves elliptic-lanceolate, ſlightly wavy. Partial flower-ſtalks very ſhort. Petals obovate.—Native of Sierra Leone, communicated by ſir Joſeph Banks in 1792.—The *leaves* are much ſmaller than in the laſt, narrower, and nearly entire. *Cluſters* axillary, ſimple, ſcarcely ſo long as the leaves. *Flowers* nearly ſeſſile, ſmaller than either of the preceding, and eſſentially diſtinguiſhed by the obovate ſhape of their petals.

HOMALOCENCHRUS. See Leersia.

HOMAN, or Oman, in *Geography*, a town of Fez, in the province of Habat, between Alcaçar-quiber, and Arzilla.

HOMBERG, William, in *Biography*, a celebrated phyſician and chemiſt, was born at Batavia, in the iſland of Java, in 1652. His father was a Saxon gentleman, who had entered into the ſervice of the Dutch Eaſt India company, and ultimately obtained the command of the arſenal of Batavia. He quitted that ſettlement however, and went to Amſterdam, where his ſon advanced rapidly in the courſe of his education, and became devoted to ſtudy. He went to Jena, Leipſic, and Magdeburg, where he purſued the ſtudy of the law, and was admitted to the bar in the laſt-mentioned place, in 1674. But without neglecting his profeſſion, he began to take great intereſt in the ſtudy of natural hiſtory; and becoming acquainted with Otto Guericke, who had invented the air-pump, and was purſuing experimental philoſophy with celebrity, he attached himſelf to this able man in order to be inſtructed in thoſe ſciences. His increaſing deſire for knowledge induced him to quit Magdeburg, and he ſet off to Italy, where he applied to the ſtudy of medicine, and particularly of anatomy and botany at Padua. When at Bologna, he diſcovered, by his experiments, the method of making the Bologna ſtone luminous, which had been almoſt loſt. At Rome he formed an intimate acquaintance with Marc Anthony Cœlio, a Roman nobleman, an able mathematician, aſtronomer, and mechaniſt, who was exceedingly dextrous in making large lenſes. Homberg applied ardently to theſe ſtudies, as well as to painting, ſculpture, and muſic, in which he made great progreſs. Leaving Italy, he travelled through France, and viſited England, where he laboured for ſome time with the celebrated Mr. Boyle. He then returned to Holland, and after improving himſelf in anatomy under De Graaf, rejoined his family, then reſiding at Quidlinburg. He had now decided on adopting the profeſſion of medicine, and took the degree of M.D. at Wittemberg; but he was ſtill more inclined to the purſuit of his favourite ſciences, than to ſettle in the practice of his profeſſion. Accordingly, he travelled to the north, in order to viſit Baldwin and Kunkel, the inventors of two ſorts of phoſphorus, which, at that time, made a conſiderable noiſe; and he obtained their methods of preparing it, in exchange for ſome other chemical ſecrets. He proceeded thence to the mines of Saxony, Hungary, Bohemia, and Sweden, in order to purſue his inquiries reſpecting the metals; and at Stockholm he laboured, together with M. Hierna, firſt phyſician to the king, in the laboratory recently eſtabliſhed there by his majeſty. He was ſtill urged by the love of liberty and ſcience to purſue his travels, notwithſtanding the wiſhes of his family that he ſhould ſettle in his own country, and he repeated his journey to Holland and France, where he was received by the ſcientific men with great favour. At the urgent requeſt of his father, who was now impatient at his delay, he had fixed the day of his departure from Paris, when M. Colbert, in the name of the king, made him ſuch advantageous offers, as induced him to remain in that metropolis. In 1682 he embraced the Catholic religion; but the next year he loſt his patron Colbert, and was diſinherited by his father for having changed his religion. In 1685 he was induced to pay a ſecond viſit to Rome, where he remained ſome years, practiſing medicine with great ſucceſs. On his return, his extenſive information, his phoſphorus, his microſcopes, an air-pump which he had invented, more perfect than thoſe of Guericke and Boyle, and various operations and diſcoveries, ſoon acquired for him a diſtinguiſhed rank among the moſt eminent philoſophers. In 1691 he was admitted a member of the Academy of Sciences, and through the favour of the abbé Bignon, director, he obtained the uninterrupted uſe of the laboratory of the academy. In 1702 the duke of Orleans ordered a magnificent laboratory, fitted up in the completeſt manner, to be put under the direction of Homberg, to whom he alſo aſſigned a penſion; and in 1704 the duke appointed him his firſt phyſician. Homberg married in 1708 the daughter of M. Dodart, an eminent phyſician, with whom he lived but a few years, being carried off by a dyſentery, to returns of which he had been for ſome time liable, in September 1715, at the age of ſixty-three. Homberg, although of a weak conſtitution, was exceedingly laborious. His acquirements were very extenſive; for beſides a thorough knowledge of every department of natural philoſophy and chemiſtry, he was well acquainted with hiſtory and languages. His mind was capable of a degree of attention, which enabled him to make obſervations, that might have eſcaped others; and his method of explaining them was ſimple, accurate, and conciſe. He never publiſhed any large work, but he furniſhed a great number of curious and intereſting memoirs to the Academy of Sciences, which were printed in their collections. Gen. Biog. Eloy. Dict. Hiſt.

Homberg, or *Homburg*, in *Geography*, a town of Germany, in the duchy of Berg; 24 miles E.S.E. of Cologne.—Alſo, a town of the principality of Heſſe Caſſel, ſituated on the Efze. It contains an iron-forge and a glaſs manufacture; 20 miles S. of Caſſel. N. lat. 51° 2′. E. long. 9° 20′.

Homburg *vor der Hohe*, or *Homburg in the mountains*, a town of Germany, which gives title to a branch of the houſe of Heſſe, called Heſſe-Homburg; ſeven miles N. of Frankfort on the Maine. N. lat. 50° 15′. E. long. 8° 32′.

Homberg *an der Ohm*, a town of Upper Heſſe, on the Ohm, with a caſtle on an eminence; 11 miles S.E. of Marpurg. N. lat. 50° 43′. E. long. 9 1′.

Homberg, or *Homrig*, a town of Wurzburg; 14 miles W. of Wertheim.

Homburg, or *Hombourg*, a town of France, in the department of Mont Tonnerre, and chief place of a canton, in the diſtrict of Deux-Ponts; five miles N.N.W. of Deux-Ponts. N. lat. 49° 11′. E. long. 7° 21′. The place contains 1761, and the canton 4581 inhabitants, in 14 communes.

Homburg, or *Hockenburg*, a town of the duchy of Wurzburg, ſituated on the Maine; 15 miles W.S.W. of Wurzburg.

HOME, Henry, *Lord* **Kames**, in *Biography*, eminent as a judge and writer, was born in the county of Berwick in 1696. He was educated at home till he was of a proper age to be ſent to the univerſity of Edinburgh, to ſtudy the law as his future profeſſion. The acuteneſs of his genius, and the ſucceſs with which he applied himſelf to profeſſional ſtudies, were diſplayed by a number of publications on the civil and Scotch law. The firſt of theſe, publiſhed in 1728, conſiſted of "Remarkable Deciſions of the Court of Seſſions," which he afterwards publiſhed, much enlarged, in the form of a dictionary in two volumes folio. Without enumerating all his works on legal ſubjects, we may mention, as the moſt curious of his productions in this claſs, "Hiſtorical Law Tracts," containing fourteen ſeparate treatiſes upon intereſting ſubjects connected with the judicial and conſtitutional hiſtory of the country. He gave a multitude of proofs of indefatigable induſtry, and profound knowledge, which raiſed him to the firſt rank in his profeſſion, and in 1752 he was advanced to the bench of judges of the court of ſeſſion, on which promotion he took, according to the cuſtom of Scotland, the title of lord Kames, and his authority as a law writer is ſtill quoted at the Scotch bar, with the ſame reſpect as is paid to the luminaries of law in the Engliſh courts. We are now to conſider lord Kames in the character of a literary man; from his earlieſt days he had a decided turn for metaphyſical diſcuſſions, and maintained a correſpondence on theſe ſubjects with biſhops Berkeley and Butler, Dr. Clarke, and other great men who have become illuſtrious, by their talents, in the annals of their country. In 1752 he publiſhed "Eſſays on the Principles of Morality and Natural Religion." In this work he endeavoured to eſtabliſh ſeveral general principles of action. He alſo openly avowed the doctrine of philoſophical neceſſity, which had become obnoxious by being adopted by ſome writers who rejected revealed religion; and though he cloſely allied it with the duties of morality and real religion, he underwent many attacks on its account. In 1761 he publiſhed for young perſons his "Introduction to the Art of Thinking," which conſiſts of maxims and general obſervations on human nature and the conduct of life illuſtrated by examples. His great work, the "Elements of Criticiſm," was given to the world in the year 1762, which is a truly original performance, and which diſcarding all arbitrary rules of literary compoſition derived from authority, eſtabliſhes a new theory upon the principles of human nature. In 1773 he appeared again before the public in his "Sketches of the Hiſtory of Man," in two volumes 4to. This work compriſes many ſubjects of the greateſt importance relative to human ſociety. They are not all treated with equal accuracy, and ſome of the examples are taken from ſuſpected ſources. He publiſhed, in 1777, "The Gentleman Farmer, being an attempt to improve Agriculture by ſubjecting it to the Teſt of rational Principles." This work was the reſult of much obſervation and practical knowedge of the buſineſs of farming, which he acquired by the purſuit on a large ſcale, on his own eſtate, in Perthſhire. In 1781 he publiſhed another work, entitled "Looſe Hints upon Education, chiefly concerning the Culture of the Heart," and in the following year he died at the age of eighty-ſix. Lord Kames was as much diſtinguiſhed by his vivacity in converſation, as the extent of his legal knowledge and literary labours. To a very advanced age he was the life and ſoul of all the parties with which he mixed: no topic could be ſtarted above or below his powers of diſcuſſion. Lord Kames was in the habit of riſing very early, and he was a man of great regularity and order in the diſpoſition of the ſeveral parts of his time: he ſeemed to know the value of each minute as it paſſed, and it was thus he roſe to the high eminence which he poſſeſſed, in oppoſition to all the obſtacles which the tumult of public buſineſs could throw in his way. In the friendſhips which he formed he was ardent, zealous, and ſincere. He attained to conſtant habits of devotion, and a perpetual ſenſe of the Deity, and a veneration for an over-ruling Providence ever dwelt upon his mind. From this ſource aroſe that propenſity, which appears in all his writings, of inveſtigating final cauſes, and tracing the wiſdom of the Supreme Author of nature. A few days before his death he went to the court of ſeſſion, addreſſed all the judges ſeparately, told them he was ſpeedily to depart, and took a ſolemn and affectionate farewel.

Home, in *Sea Language*, denotes either the ſituation of ſome object, where it retains its full force of action; or where it is properly lodged for convenience or ſecurity. In the former ſenſe it is applied to the ſails, and ſignifies, that their clues or lower corners are cloſe to the blocks upon the yard-arm, immediately beneath them: hence to haul home the top-ſail-ſheets, is to extend the bottom of the top-ſail to the lower-yard, by means of the ſheets. In the latter ſenſe, it uſually refers to the ſtowage of the hold; as a caſk, &c. is ſaid to be *home*, when it bears againſt and lies cloſe to ſome other objects: or to the anchor, which is ſaid to come home, when it looſens from the ground, by the effort of the cable, and approaches the place where the ſhip floated, at the length of her moorings.

Home *Breeds*, in *Rural Economy*, a term ſignifying ſuch breeds of cattle or other ſorts of live-ſtock, as are bred and reared in the particular diſtrict or county.

Home-*Diſtrict*, *the*, in *Geography*, a diſtrict of Naſſau, in the province of Quebec, Upper Canada, ſo conſtituted by a proclamation of lord Dorcheſter, in July 1788, and deriving its preſent name from an act of the provincial legiſlature. It is bounded E. by a meridian paſſing through the mouth of the river Trent; N. by the Ottawa river, into lake Tomigcanning and the bounds of the Hudſon's bay company, and alſo by part of lake Huron; W. by a meridian paſſing through the eaſtern extremity of Long point, or the N. Foreland; and S. by part of lake Ontario, and part of lake Erie.

Home, *Harveſt*. See HARVEST.

Home-*ſtall*, in *Rural Economy*, a term frequently applied to the ſcite or ſituation of the farm-houſe, and other buildings including the farm-yard. It cannot be diſputed that farms are of greater or leſs value in proportion to the conveniencies which they poſſeſs, and the facility of the means of occupying them. It is well known that arable farms require an extent of buildings and other conveniencies adequate to the ſizes and particular kinds of them. Tenants are not unfrequently ſeen much checked and confined in their operations and improvements, as well as ſubjected to great waſte of produce, in conſequence of the want of a ſufficient extent of farm offices. But on the contrary, it is occaſionally to be noticed, that there is a prodigality of this ſort of buildings, which incurs vaſt unneceſſary expence, not only at firſt, but afterwards in the repairs that become requiſite. The extent of buildings ſhould conſequently be well proportioned to that of the farm, and rarely extended much beyond it. All extremes muſt be moſt carefully avoided. See FARM, and FARM-YARD.

Home-*ſtead*, the name of the ſituation or ſpace of ground on which the farm-houſe, buildings, and offices are raiſed. The ſituations intended for this purpoſe ſhould be choſen with much care and circumſpection, regard being conſtantly had to convenience, water, and various other points of importance. See FARM-YARD, and HOME-*ſtall*.

HOMER, in *Biography*, juſtly celebrated as the prince of poets, flouriſhed, according to Blair, about 900 years before the Chriſtian era, though Prieſtley and others place this event half a century later. Seven cities diſputed the glory of having given him birth, *viz.* Smyrna, Rhodes, Colophon, Salamis, Chios, Argos, and Athens, but the probability is, that he was born either on the continent of Leſſer Aſia, or upon one of the iſlands near it. We have nothing certain reſpecting the life of this poet: critics have uſually thrown aſide as ſpurious and fabulous the life of Homer, ſaid to have been written by Herodotus. The detail of circumſtances contained in that piece is ſo circumſtantial and minute, that it can deſerve no credit whatever. There ſeems no doubt that, notwithſtanding the high reputation and vaſt celebrity which he has enjoyed for nearly three thouſand years, he ſpent his life in poverty, wandering about from city to city, and from the court of one prince to that of another, obtaining temporary patronage from the recital of his poems. If he were blind he probably became ſo in his old age. The origin and compoſition of the poems attributed to Homer, are involved in as much obſcurity, as the facts relating to his birth-place and life. In his celebrated poems entitled the Iliad and Odyſſey, the poet has diſplayed the moſt conſummate knowledge of human nature, and rendered himſelf immortal by the ſublimity, the fire, the ſweetneſs, and elegance of his poetry. In his Iliad, Homer has deſcribed the reſentment of Achilles, and its fatal conſequences in the Grecian army before the walls of Troy. In the Odyſſey, the poet has for his ſubject the return of Ulyſſes into his country, with the many misfortunes which attended his voyage after the fall of that city. Theſe poems are each divided into 24 books, the ſame number as there are letters in the Greek alphabet, and, though the Iliad claims an unconteſted ſuperiority over the Odyſſey, yet the ſame force, the ſame ſublimity and elegance prevail, though diveſted of its more powerful fire: and the great author of the "Sublime," compares the Iliad to the mid-day, and the Odyſſey to the ſetting-ſun, and adds that the latter ſtill preſerves its original ſpendour and majeſty, though deprived of its meridian heat. "Whether theſe were epic poems in the ſenſe now attached to the word, primarily formed upon a determinate plan, and conſtituting a whole;—whether they were a fortuitous aſſemblage of detached parts, connected by ſome later hand, by means of an aſſumed ſubject, or, laſtly, whether theſe rhapſodies were the work of one author or of ſeveral, are queſtions which have exerciſed, and which ſtill continue to exerciſe, the ingenuity of critics. There is no doubt that the conſtituent parts of theſe poems long wandered ſeparately through the principal cities of Greece, and the whole of them are ſaid by Plutarch to have been brought from Aſia to Greece by Lycurgus, and their firſt arrangement, in the order we now have them, is aſcribed to Piſiſtratus. But whatever doubt theſe circumſtances might throw upon the original plan of their compoſition, it is contended that all the parts ſo manifeſtly conſpire to that general purpoſe which is propoſed in the exordium, that they muſt have flowed from uniform deſign. The difficulty of conceiving how ſuch long works could be accurately tranſmitted by memory through ages, previouſly to the uſe of writing, increaſes the intricacy of the queſtion;" but in anſwer to this it has been obſerved, that the poetry of Homer was ſo univerſally admired, that, in ancient times, every man of learning could repeat with facility any paſſage in the Iliad and Odyſſey. Theſe poems, it appears, from the very earlieſt times, were conſulted as authorities for local claims, and controverſies were decided reſpecting boundaries and prerogatives, by lines from the catalogue of Homer's ſhips. Modern travellers have been aſtoniſhed to behold the different ſcenes which the poems of Homer deſcribed 3000 years before, ſtill exiſting in the ſame unvaried form, and the navigator, who ſteers his courſe along the Ægean ſea, finds all the promontories and rocks which appeared to Neſtor and Menelaus, when they returned victorious from the Trojan war. By the ancients Homer was venerated and worſhipped as a god. The inhabitants of Chios celebrated feſtivals in his honour every fifth year: and the people of Cos conſidered it as their greateſt glory that the poet of Greece was buried in their iſland. Alexander was ſo much attached to the works of Homer, that he uſually placed them under his pillow, with his ſword, and he depoſited the Iliad in one of the richeſt and moſt valuable caſkets of Darius, obſerving, that the moſt perfect work of human genius ought to be preſerved in a box the moſt valuable and precious in the world. The beſt editions of the Iliad and Odyſſey are that by Dr. Barnes with the Greek ſcholia, in two volumes 4to.: that by Dr. Clarke publiſhed in 4to. 1729, and that by the learned Heyne. The moſt elaborate commentary is that by Euſtathius, biſhop of Theſſalonica, and the beſt Engliſh tranſlation is that by Pope: though Cowper's, in blank verſe, is thought to come nearer to the original.

Homer, in *Geography*, a military townſhip of America, in Onondago county, New York, on the head-waters of the N. W. branch of Chenengo river; containing 612 inhabitants.

Homer, *Omer*, or *Chomer*, a Jewiſh meaſure, containing the tenth part of the epha. See Corus and Measure.

HOMESOKEN, or rather Hamſoken; ſometimes alſo written *Hamſoka*, and *Hamſokna*, the privilege or protection which every man enjoys in his own houſe.

" Hamſokne, hoc eſt quietus eſſe de amerciamentis pro ingreſſu hoſpitii violenter et ſine licentia contra pacem regis, et quod teneatis placita de hujuſmodi tranſgreſſione in curia veſtra." W. Thorn. 2030.

Hence, he who invades that freedom, is properly ſaid, *frangere homſocnam.*

This crime ſeems to amount to what we now call burglary; which is a crime of a heinous nature, as being not only a breach of the king's peace, but a breach of that liberty which a man hath in his own houſe, which, as we commonly ſay, ſhould be his caſtle, and therefore ought not to be invaded. Bracton. lib. iii.

HOMFELDS, in *Geography*, a town of Germany, in the county of Lippe; 9 miles E. of Lemgow.

HOMICIDE, of *homo, a man*, and *cædo, I kill,* in *Common Law*, the killing of a man.

Homicide is divided into three kinds: *viz. juſtifiable*, *excuſable*, and *felonious*. The firſt has no guilt at all; the ſecond very little; but the third is the higheſt crime againſt the law of nature, which man is capable of committing.

Juſtifiable homicide is ſuch as is owing to ſome unavoidable *neceſſity*, without any intention or negligence in the perſon that kills, and, therefore, without any ſhadow of blame. Of this kind is the act of a magiſtrate or officer, who puts a malefactor to death, in obedience to the law, and in the execution of public juſtice. Homicide is alſo *juſtifiable* for the advancement of public juſtice; as, where an officer, in the execution of his office, either in a civil or criminal caſe, kills a perſon that aſſaults or reſiſts him (1 Hal. P.C. 494. 1 Hawk. P.C. 71.); where an officer, or any private perſon, attempts to take a man charged with felony, but is reſiſted, and in the endeavour to take him, kills him (1 Hal. P. C. 494.); where officers, in caſe of a riot or rebellious aſſembly, endeavouring to diſperſe the mob, kill them; ſuch officers are juſtified both by common law (1 Hal. P. C. 495. 1 Hawk. P. C. 161), and by the riot act, 1 Geo. I. cap. 5. Where priſoners are killed by the gaoler or officer, in endeavouring to prevent their eſcape (1 Hal. P. C. 496.); where treſpaſſers in foreſts, parks, chaſes, or warrens, refuſe to ſurrender to the keepers, they may be ſlain; (21 Edw. I. ſtat. 2. 3 & 4 W. & M. cap. 10.) But in all theſe caſes there muſt be an apparent neceſſity; ſo that the party could not be arreſted or apprehended, the riot could not be ſuppreſſed, the priſoners could not be kept in hold, the deer-ſtealers could not but eſcape, unleſs ſuch homicide were committed, without which this kind of homicide is not juſtifiable. When one champion killed another in battle, ſuch homicide was juſtifiable, and was imputed to the juſt judgment of God (1 Hawk. P. C. 71.) Moreover, ſuch homicide, as is committed for preventing any forcible and atrocious crime, is juſtifiable by the law of nature, and by the law of England. (24 Hen. VIII. cap. 5.) Thus, if any perſon attempts a robbery or murder, or endeavours to break open a houſe in the *night-time*, or to burn it (1 Hal. P. C. 488.), and ſhould be killed in the attempt, the ſlayer ſhall be acquitted and diſcharged. This is agreeable to the Jewiſh law, Exod. xxii. 2. to the laws of Athens, and the Roman law of the Twelve Tables. The Engliſh law alſo juſtifies homicide in defence of *chaſtity*; which ſee.

Excuſable homicide is ſuch as the law excuſes from the guilt of felony, though it implies ſome degree of fault and blame. This is either *per infortunium, i. e.* by miſadventure, or *ſe defendendo*, upon a principle of ſelf-preſervation in a ſudden affray. See Chance-*medley*.

The firſt is, where a man doing a lawful act, without any intention of hurt, unfortunately kills another; as where a man has a hatchet at work, the head of which flies off, and kills a ſtander-by, or where a perſon, qualified to keep a gun, is ſhooting at a mark, and undeſignedly kills a man (1 Hawk. P. C. 73, 74.). Thus alſo, when a parent is moderately correcting his child, a maſter his apprentice or ſcholar, or an officer puniſhing a criminal, and happens to occaſion his death, it is only miſadventure; but if he exceeds the bounds of moderation, in the manner, the inſtrument, or degree of puniſhment, and death enſues, it is at leaſt manſlaughter, and in ſome caſes, according to circumſtances, murder.

Theſe two ſpecies of *excuſable* homicide are ſimilar in their blame and puniſhment. Among the Jews, the ſlaughter even of enemies required a ſolemn purgation, which implies that the death of a man, however it happens, will leave ſome ſtain behind it. And the Moſaical law (Numb. c. 35. and Deut. c. 10.) appointed certain cities of refuge for him who killed his neighbour unawares, &c. But he was not held wholly blameleſs, any more than in the Engliſh law; ſince the avenger of blood might ſlay him before he reached his aſylum, or if he afterwards ſtirred out of it till the death of the high-prieſt. In the imperial law likewiſe caſual homicide was excuſed, by the indulgence of the emperor, ſigned with his own ſign manual, "adnotatione principis:" otherwiſe the death of a man, however committed, was in ſome degree puniſhable. Among the Greeks homicide by miſfortune was expiated by voluntary baniſhment for a year. (Plato de leg. l. ix.) In Saxony a fine is paid to the kindred of the ſlain: which alſo, among the weſtern Goths, was little inferior to that of voluntary homicide (Stiern. de jure Goth. l. iii. c. 4.): and in France no perſon was ever abſolved in caſes of this nature, without a largeſs to the poor, and the charge of certain maſſes for the ſoul of the party killed. By our laws theſe two ſpecies of homicide formerly incurred a forfeiture, as ſome ſay, of all the goods and chattels; according to others, only of part of them, by way of fine or *weregild*, which was probably diſpoſed of, as in France, *in pios uſus*, or for the benefit of his ſoul. But the delinquent has now a pardon, and writ of reſtitution of his goods, as a matter of courſe and right, only paying for ſuing out the ſame (2 Hawk. P. C. 381.); and in moſt caſes the judge will grant a general verdict of acquittal. Foſt. 289.

Felonious homicide is the act of killing a human creature without juſtification or excuſe. This is either ſelf-murder (ſee Felo *de ſe*); or the killing of another man, which is divided into *manſlaughter* and *murder;* which ſee reſpectively. Blackſt. Com. book iv. cap. 14.

HOMILY, Ὁμιλια, formed of ὁμιλος, *aſſembly*, originally ſignifies a conference, or converſation; but the word has ſince been applied to an exhortation, or ſermon, delivered to the people.

The Greek *homilia*, ſays M. Fleury, ſignifies a familiar diſcourſe, like the Latin *ſermo;* and diſcourſes delivered in the church took theſe denominations, to intimate, that they were not harangues, or matters of oſtentation and flouriſh, like thoſe of profane orators, but familiar and uſeful diſcourſes, as of a maſter to his diſciples, or a father to his children.

All the homilies of the Greek and Latin fathers are compoſed by biſhops. We have none of Tertullian, Clemens Alexandrinus, and many other learned perſons; becauſe, in the firſt ages, none but biſhops were admitted to preach.

The privilege was not ordinarily allowed to prieſts, till toward the fifth century. St. Chryſoſtom was the firſt preſbyter that preached ſtatedly. Origen and St. Auguſtine alſo preached, but it was by a peculiar licence, or privilege.

Photius diſtinguiſhes homily from ſermon; in that the homily was performed in a more familiar manner; the prelate interrogating and talking to the people, and they, in their turn, anſwering and interrogating him; ſo that it was properly a converſation; whereas the ſermon was delivered with more form, and in the pulpit, after the manner of the orators.

There are ſeveral fine homilies of the fathers ſtill extant; and, particularly, of St. Chryſoſtom, St. Gregory, &c. The practice of compiling homilies, which were to be committed to memory, and recited by ignorant or indolent prieſts, commenced towards the cloſe of the eighth century; when Charlemagne ordered Paul Deacon and Alcuin to form homilies or diſcourſes upon the Goſpels and Epiſtles, from the ancient doctors of the church. This gave riſe to that famous collection, entitled the Homiliarium of Charlemagne, and which being followed as a model by many productions of the ſame kind, compoſed by private perſons, from a principle of pious zeal, contributed much (ſays Moſheim,) to nouriſh the indolence, and to perpetuate the ignorance of a worthleſs clergy. Eccleſ. Hiſt. vol. ii. p. 254. 8vo. ed.

At the time of the Reformation there were ſeveral of theſe homilies compoſed and printed, and ordered to be read in ſuch churches as were not provided with a ſufficiently learned miniſter, in order to prevent unſound doctrine being taught in remote country places. The homilies of the eſtabliſhed church of England are contained in two books; the former of which was publiſhed in the reign of Edward VI., and the latter in the beginning of the reign of queen Elizabeth. Both theſe are pronounced by the 35th article of the church to "contain a godly and wholeſome doctrine, and neceſſary for theſe times," *i. e.* for the times in which they were publiſhed. The authors of theſe homilies were the great reformers Cranmer, Ridley, Latimer, and Jewel. Biſhop Tomline mentions, in his "Refutation of Calviniſm, 8vo. 1811, that not one of the peculiar doctrines of Calvin is mentioned in either of theſe two books: the word Predeſtination does not occur from the beginning to the end of the homilies; the word Election occurs upon one occaſion only, and then it is uſed in its true ſcriptural ſignification, very different from that in which it is uſed by Calviniſts: the word Reprobation does not occur at all: nothing is ſaid of abſolute decrees, partial redemption, perſeverance, or irreſiſtible grace.

HOMILIES, Clementine. See Clementina.

HOMINE *capto in withernam*, in *Law*, a writ for apprehending him that has taken any bondman or woman, and led him or her out of the country; ſo that he or ſhe cannot be replevied according to law. See Withernam.

Homine *eligendo ad cuſtodiendam peciam ſigilli pro mercatoribus editi*, a writ directed to a corporation for the choice of a new perſon to keep one part of the ſeal appointed for ſtatutes merchant, when a former is dead according to the ſtatute of Acton Burnel.

Homine *replegiando*, a writ for the bailing of a man out of priſon, when he is confined without commandment of the king or his judges, or for any cauſe that is repleviable. But this writ is now ſeldom uſed; a writ of habeas corpus being ſued out on the neceſſary occaſions.

HOMINICOLÆ, formed of the Latin *homo*, *hominis*, *man*, and *colo*, *I worſhip*, in *Antiquity*, a name which the Apollinarians gave to the orthodox, to denote them worſhippers of man.

As the orthodox maintained that Jeſus Chriſt was God-man, the Apollinarians accuſed them of adoring a man, and therefore called them *hominicolæ*.

HOMMACKS, in *Engineery*, are uſed by Mr. Smeaton to denote ſand hills thrown up by the tide; ſometimes alſo they are called paddocks.

HOMMEDAL, in *Geography*, a town of Norway, in the dioceſe of Chriſtianſand; 19 miles N.N.E. of Chriſtianſand.

HOMMOC, in *Sea Language*, ſignifies a hillock, or ſmall eminence of land reſembling the figure of a cone, and appearing on the ſea-coaſt of any country.

HOMNONA, in *Geography*, a town of Hungary; 14 miles N.E. of Matusfalva.

HOMO, Man, in *Zoology*. See Man.

HOMOCENTRIC, compoſed of ὁμος, *ſimilar*, and κεντρον, *centre*, in *Aſtronomy*, a term of the ſame import with concentric.

HOMOCHROA, in *Natural Hiſtory*, the name of a genus of pebbles.

The word is derived from the Greek ὁμος, *ſimilar*, and χρωα, *colour*, and expreſſes ſuch pebbles as are not veined, but all of one ſimple and ſimilar colour. Theſe are bodies compoſed of cryſtalline matter, conſiderably debaſed by earth, and this of various kinds in the different ſpecies, but only of one kind in the ſame ſpecies, which is thence always of one colour, and not ſubject to veins. Of this genus there are only five known ſpecies; the white, red, yellow, blueiſh, and greeniſh. All theſe are covered with external coats or cruſts, like thoſe of the common pebble. Hill's Hiſt. of Foſſ. p. 510.

HOMODROMUS Vectis, in *Mechanics*, a lever, in which the weight is in the middle between the power and fulcrum, or the power in the middle between the weight and fulcrum. See Lever.

The word homodromus is derived from ὁμος, *ſame*, and δρομος, *courſe*, becauſe in this ſpecies of lever the weight and power move in the ſame direction; as in the heterodromus they move in contrary directions.

HOMOEOTELEUTON, Ὁμοιοτέλευτον, a figure in *Rhetoric*, whereby ſeveral verbs in a ſentence are made to end alike; as, eos deduci, evehi quam deferi malui: or, ut vivis invidioſe, delinquis ſtudioſe, loqueris odioſe.

HOMOGENEOUS, or Homogeneal, compoſed of the Greek ὁμος, *like*, and γενος, *kind*, is a term applied to various ſubjects, to denote that they conſiſt of ſimilar parts, or of parts of the ſame nature and kind; in contradiſtinction to heterogeneous, where the parts are of different natures, &c.

Natural bodies are generally compoſed of homogeneous parts, as a diamond, a metal, &c. Artificial bodies, on the contrary, are aſſemblages of heterogeneous parts, or parts of different qualities; as a building of ſtone, wood, &c.

HOMOGENEAL Light, is that whoſe rays are all of one and the ſame colour, degree of refrangibility, and reflexibility. See Light.

Homogeneal *Numbers* and *Plants*, are thoſe of the ſame kind and nature.

Homogeneal *Surds*, are ſuch as have one common radical ſign; as $\sqrt[3]{27}$, and $\sqrt[3]{3}$. See Surd.

HOMOGENEUM Comparationis, in *Algebra*, the known quantity in an equation; called alſo *abſolute number*.

It is called *homogeneum comparationis*, of *compariſon*, to diſtinguiſh it from the other terms; which, though homogeneous as well as this, *i. e.* always raiſed to the ſame degree of power, are not the quantities of which things are here compared or referred.

HOMOGRAMMI, Ὁμογραμμι, among the ancients, an appellation given to the athletæ who drew the ſame letter, and on that account were to engage together; for when any number of athletæ were to enter the liſts, in order to determine with whom every one ſhould contend, they threw into an urn a number of letters equal to that of the athletæ, but ſo that there were always two leters of a ſort, as two *a*'s, or two *b*'s. After theſe had been ſhaken together, the athletæ drew them out, and thoſe who got the ſame letter were to fight each other.

HOMOIOCATALECTON, Ὁμοιοκαταληκτον, in *Rhetoric*, a figure wherein the different parts of a ſentence have the ſame termination.

Homoiocatalecton is uſed as a genus to denote ſimilar terminations and words; and homoioptoton and homoioteleuton are made its ſpecies.

HOMOIOMERICAL Principles, of ὁμοιος, *ſimilar*, and μερη, *part*, a peculiar kind of principle, ſuppoſed by Anaxagoras in all mixed bodies; being determinate numbers of ſuch ſimilar principles, as, when they came to be parts, *e. gr.* of an animal body, would there make ſuch maſſes and combinations as their nature required; *viz.* the ſanguinary particles would then meet together, and make blood, the urinous particles conſtitute urine, the oſſeous ones bones, the carneous fleſh, &c. See Principle.

HOMOIOPTOTON, Ὁμοιοπτωτον, a figure in *Rhetoric*, whereby the ſeveral parts of a ſentence end with the ſame caſe, or tenſe of a like ſound; *e. gr. mærentes, flentes, elachrymantes, & miſerantes.* Iſocrates is particularly celebrated for this figure. Some of the beſt orators have induſtriouſly avoided this figure, becauſe it has too much the appearance of art.

HOMOLINON, a word uſed by ſome authors to expreſs crude flax, and by others for a coarſe ſort of flaxen linen, made of the rough threads unwhitened, which was uſed by the ancients for towels to rub people after bathing.

HOMOLOGATION, in the *Civil Law*, the act of confirming or rendering a thing more valid and ſolemn, by publication, repetition, or recognition thereof.

The word comes from the Greek ὁμολογια, *conſent*, *aſſent*, formed of ὁμος, *ſimilis*, *like*, and λογος, of λεγειν, *dicere*, *to ſay*; *q. d. to ſay the ſame thing, to conſent, agree.*

HOMOLOGOUS, in *Geometry*, is applied to the correſpondent ſides of ſimilar figures, which are ſaid to be homologous, or in proportion to each other.

The word is compoſed of ὁμος, *ſimilar*, and χογος, *ratio*, *reaſon*; *q. d.* quantities *alike* to each other in ratio. So, if the ratio of A to B be the ſame as of C to D, here A is homologous to C, as B to D; becauſe of the ſimilitude between the antecedents and conſequents. The two antecedents, and the two conſequents, then, in any continued geometrical proportion, are homologous terms.

Thus, the baſe of one triangle is homologous to the baſe of another ſimilar triangle: ſo in ſimilar triangles, the ſides oppoſite to equal angles are ſaid to be homologous.

Equiangular, or ſimilar triangles, have their homologous ſides proportional.

All ſimilar triangles, rectangles, and polygons, are to each other as the ſquares of their homologous ſides.

Homologous *Things*, in *Logic*, are ſuch as agree in name, but are of different natures. Theſe coincide with what we otherwiſe call *equivocal* and *homonymous* terms.

HOMONOIA, in *Botany*, from ὁμονοια, *concord*, alluding to the union of the ſtamens into various tribes, all co-operating to one end. Lour. Cochinch. 636. Claſs and order, *Dioecia Polyadelphia*. Nat. Ord. *Tricoccæ*, Linn. *Euphorbiæ*, Juſſ.

Gen. Ch. Male, *Cal.* Perianth of three ovate, concave, coloured leaves. *Cor.* none. *Stam.* Filaments about 200, equal to the calyx, united into 20 bundles; anthers roundiſh.

Female, on a ſeparate plant, *Cal.* Perianth of one leaf, many-cleft, acute, permanent. *Cor.* none. *Piſt.* Germen ſuperior, roundiſh; ſtyle none; ſtigmas three, oblong, villous. *Peric.* Capſule three-lobed, with three cells, and three valves. *Seeds* roundiſh, ſolitary.

Eſſ. Ch. Male, Calyx of three coloured leaves. Corolla none. Stamens 200, in 10 bundles.

Female, Calyx inferior, many-cleft. Corolla none. Stigmas three. Capſule of three cells. Seeds ſolitary.

1. H. *riparia.* A native of the banks of rivers in Cochinchina, where it is called *Rì rì bò ſoung*. It is a *tree*, ſix feet high, with a thick, upright ſtem, much branched. The *leaves* are linear, lanceolate, alternate, entire; downy. *Flowers* ſmall, in nearly terminal linear ſpikes, called by Loureiro *amenta*, or catkins; but as he deſcribes the male catkin with three ſcales to each flower, and a three-leaved perianth beſides, it is manifeſt the former muſt be bracteas. The whole of his deſcription beſides indicates one of the natural order of *Euphorbiæ*, which are not amentaceous plants.

HOMONOPAGIA, a word uſed by ſome medicinal authors for the head-ach.

HOMONYMIA, in *Logic*, an equivocation. See Homonymon, &c.

HOMONYMON, Ὁμονυμον, compoſed of ὁμος, *ſimilis*, and the Ionic ονομα, for ονυμα, *name*, a word which has different meanings, or which is uſed to expreſs things of different nature and quality.

Homonyma are the ſame with what are otherwiſe called *polyſema*, *ſynonema*, and *equivocals*.

HOMOOUSANS, Homousians, *Homouſianianiſts*, *Homouſiaſts*, formed of ὁμȣσιος, or ὁμοȣσιος, ſignifying *of the ſame ſubſtance*, are names which the Arians anciently gave to the orthodox, becauſe they held that God the Son is *homoouſios*, *i. e. con-ſubſtantial* with the Father. Hunneric, king of the Vandals, who was an Arian, publiſhed a reſcript, directed to all the Homoouſian biſhops. See Person, &c.

HOMOOUSIOS, Ὁμοȣσιος, among *Divines*, a being of the ſame ſubſtance or eſſence with another.

The divinity of Chriſt having been denied by the Ebionites and Cerinthians in the firſt century, by the Theodotians in the ſecond, by the Artemonians at the beginning of the third, and by the Samoſatenians, or Paulians, towards the cloſe of the ſame, a council was aſſembled at Antioch in 269, wherein Paulus Samoſatenus, head of this laſt ſect, and biſhop of Antioch, was condemned and depoſed, and a decree publiſhed, as ſome have ſaid, wherein Chriſt is aſſerted to be God of God, and ὁμοȣσιος, *i. e. conſubſtantial* with the Father.

It has been urged by ſeveral ancient writers of the fourth century, *viz.* Athanaſius, Hilary of Poictiers, and Baſil, that the council of Antioch rejected the word ὁμȣσιος, or *conſubſtantial*, as improper: and if we conſider that Euſebius, who has been called an Arian, ſpeaks of Malchion, who directed and governed at this council, as a man of uncommon ſoundneſs in the faith of Chriſt, we may preſume that the term was not introduced in this council. The council of Nice, however, aſſembled in 325, expreſsly eſtabliſhed the Homoouſian doctrine. Many learned writers have taken pains to vindicate the orthodoxy of the council of Antioch, and to ſhew that both theſe councils held the ſame doctrine. See Arians.

HOMOPHAGI. See Omophagi.

HOMOPHONI, in the *Ancient Greek Muſic*, implied uniſons, contraſted with *Antiphoni*, which meant ſymphonies, or muſic in octaves. The word is derived from ὁμος, *alike*, and φωνη, *ſound*

Homophoni, *Homophonous*, in *Greek Muſic*, was equivalent to *uniſons*, or uniſonous performance vocal or inſtrumental, in which the ſeveral parts were of the ſame pitch.

HOMORAN, or Homran, in *Geography*, a town of Arabia, in the province of Yemen; between Sana and Beit-al-Fakih. In a hill in the vicinity of this town, there are ſaid to be 360 reſervoirs for water, cut in the rock. In its diſtrict is comprehended a large and fertile mountain, called Burra.

HOMORIUS, in *Mythology*, is an epithet given to Jupiter by the Greeks, anſwering to *Terminalis* among the Romans. Polyb. Hiſt. lib. ii.

HOMOROD, in *Geography*, a town of Tranſilvania; 15 miles N. of Fogaras.

HOMOTONOS, in *Medicine*, an epithet made the characteriſtic of a certain kind of fevers, which continue from the beginning to the end in one equable and uniform tenor, without exacerbation or relaxation.

HOMS, in *Geography*. See Emesa.

HOMUNCIONALES, in *Eccleſiaſtical Hiſtory*, an appellation given by the Arians to the orthodox, who ſaid there were two natures and ſubſtances in Chriſt.

HOMUNCIONISTS, Homuncionistæ, formed of *homuncio*, a diminutive of *homo*, *a man*, q. d. *little man*, a ſect of heretics, the followers of Photinus, and from him alſo called Photinians.

They had this appellation, becauſe of their denying the two natures of Jeſus Chriſt, and holding that he was only mere man.

HOMUNCIONITES, Homuncionitæ, were a ſect of ancient heretics, whoſe diſtinguiſhed dogma it was, that the image of God was impreſſed on the body, not on the ſoul or mind of man.

HO-NAN, in *Geography*, a moſt delightful province of China, ſituated near the centre of the country, and called by the Chineſe Tong-hoa, or the Middle Flower. It is bounded on the N. by the provinces of Pe-tcheli and Chan-ſi, on the S. by Hou-quang, and on the E. by that of Chan-tong. Its capital is Cai-fong. The ancient emperors, invited by the mildneſs of the climate and the beauty of the country, fixed their reſidence here for ſome time. The abundance of its fruits, paſtures, and corn, the effeminacy or rather voluptuouſneſs of its inhabitants, and the cheapneſs of its proviſions, have prevented trade from flouriſhing in this, as it has done in other provinces of the empire. The whole country is flat, except towards the weſt, where ariſes a long chain of mountains, covered with thick foreſts; and the land is in ſuch high ſtate of cultivation, that thoſe who travel through it imagine they are walking in an immenſe garden. Beſides the river Hoang-ho, which traverſes this province, it is watered by a great number of ſprings and fountains; it has alſo a valuable lake, which invites to its banks a prodigious number of workmen, becauſe its water has the property of communicating to ſilk a luſtre, which cannot be imitated. Excluſively of forts, caſtles, and places of ſtrength, this province contains eight *fou*, or cities of the firſt claſs, and 102 of the ſecond and third. The population of this province, according to ſir George Staunton, amounts to 27,000,000 perſons.

Ho-nan, a city of the firſt claſs in the fore-mentioned province, ſituated amidſt mountains and between three rivers. The Chineſe formerly believed this city to be the centre of the earth, becauſe it was the middle of their empire. Its juriſdiction is very extenſive; for it comprehends one city of the ſecond claſs, and 13 of the third. One of theſe cities named Teng-fong-hien, is famous on account of the tower erected by the celebrated Tcheou-kong for an obſervatory; in it is to be ſtill ſeen an inſtrument which he made uſe of to find the ſhadow at noon, and to determine the latitude. This aſtronomer lived above 1000 years before the Chriſtian era, and the Chineſe pretend that he invented the mariner's compaſs. N. lat. 34° 44′. E. long. 112° 9′.

HONANELLA, a town of Hindooſtan, in Sanore, on the Tungebadra; 15 miles E. of Sanore.

HONCKENYA, in *Botany*, named by profeſſor Willdenow, in honour of his friend Gerard Auguſtus Honckeny, an able agriculturiſt. Willd. in Uſt. Delect. v. 2. 200. Sp. Pl. v. 2. 325.—Claſs and order, *Octandria Monogynia*. Nat. Ord. *Tiliaceæ*, Juſſ.

Gen. Ch. *Cal.* Perianth inferior, of five coriaceous, linear leaves, hairy and coloured externally, deciduous. *Cor.* Petals five, oblong, obtuſe, rather ſhorter than the calyx, deciduous. Nectaries very numerous, capillary, dilated at the top, reſembling ſtamens, ſhorter than the petals, inſerted into the receptacle. *Stam.* Filaments eight, rather longer than the nectaries, inſerted into the receptacle, compreſſed, linear, ſlightly dilated at their baſe; anthers erect, oblong, of two cells. *Piſt.* Germen ſuperior, oblong, hiſpid; ſtyle thick, cylindrical, ſhorter than the ſtamens, erect; ſtigma with ſix teeth. *Peric.* Capſule oblong, clothed with very long thorns, of five cells and five valves, whoſe edges form the partitions. *Seeds* numerous, roundiſh, rather compreſſed, brown, rough with elevated points, half clothed with a thin membranous tunic, and affixed to the central column.

Eſſ. Ch. Calyx of five leaves, inferior. Petals five. Nectaries numerous, reſembling ſtamens. Capſule thorny, with five cells and five valves. Seeds numerous, each with a membranous tunic.

1. H. *ficifolia.* Willd. in Uſt. Delect. v. 2. 201. t. 4. Native of Guinea, where it was gathered by Mr. Iſert. *Stem* woody; its branches round, clothed with ſhort brown pubeſcence. *Leaves* alternate, on ſhort ſtalks, toothed, or rather ſharply ſerrated, two or three inches long; tawny and downy beneath: the upper ones oblong, obtuſe, undivided; the lower palmate, with three or five blunt lobes. *Flowers* terminal, ternate, ſtalked, above an inch wide, of a blueiſh purple.—Nearly akin to *Aubletia* of Schreber and Willdenow, as the latter obſerves, but "diſtinguiſhed by the form of its capſule, the ſtamen-like nectaries, and the tunicated ſeeds."—The latter is indeed a good mark, but the ſuppoſed nectaries are probably only barren ſtamens.

HOND, in *Geography,* a town of Hungary, 10 miles N.W. of Tokay.

HONDA, a town of America, in New Granada, ſituated on the river Magdalena, in N. lat. 5° 16′, and long. E. of Quito 4° 9′. M. Bouguer repreſents it as a pleaſant little town, and the chief mart of the commerce between Quito and the northern provinces.

HONDA, a bay on the N. coaſt of the iſland of Cuba; 70 miles W. of Havannah. N. lat. 22° 58′. W. long. 83° 25′.—Alſo, a bay on the E. coaſt of the province of Honduras, northward of Cape Gracias á Dios.—Alſo, a bay on the coaſt of South America, in the province of St. Martha. N. lat. 12 . W. long. 71° 6′.

HONDEKOETER, GILLES, in *Biography,* born at Utrecht in 1583, imitated the ſtyle of compoſition, and the manner of colouring, of Roland Savery, and David Vinckenbooms. He ſtudied after nature theſe views which he intended for his landſcapes, and in general made an agreeable choice. The forms and leafing of his trees are more in the taſte of Vinckenbooms than Savery; but they are well handled, and firmly pencilled, though ſometimes perhaps they are a little too brown, or too yellow.

He painted different kinds of fowls with ſingular truth and exactneſs, and frequently filled his ſmall landſcapes with no other objects; but thoſe he finiſhed highly, and with great tranſparence of colouring.

HONDEKOETER, GYSBRECHT, born at Utrecht in 1613, was ſon of the preceding, from whom he learned deſign and colouring. The ſubjects he painted were, cocks, hens, ducks, and other domeſtic fowls, which he deſcribed in a lively and ſtrong manner, giving his objects agreeable attitudes, and colouring them exactly after nature. The works of this maſter are very often injudiciouſly aſcribed to his ſon, although the paintings of Gyſbrecht are in every reſpect abundantly inferior to thoſe of Melchier Hondekoeter.

HONDEKOETER, MELCHIER, ſon of the preceding, was born at Utrecht in 1636, and from his infancy was carefully trained up to the profeſſion by his father. He choſe the ſame ſubjects; but, in his manner of painting them, he ſurpaſſed not only his maſter, but even the beſt of his contemporaries, in a very high degree. Till he was ſeventeen years of age he practiſed under the direction of Gyſbrecht and accuſtomed himſelf to paint ſeveral ſorts of birds; but he was particularly pleaſed to repreſent cocks, hens, ducks chickens, and peacocks, which he deſcribed in an elegant variety of actions and attitudes.

After the death of his father, which happened in 1653, he received ſome inſtructions from his uncle John Baptiſt Weeninx; but his principal and beſt inſtructor was nature, which he ſtudied with intenſe application, and that enabled him to give to every animal he painted ſuch truth, ſuch a degree of force, expreſſion, and life, as ſeemed to equal nature itſelf; nor did any artiſt take more pains to ſtudy every point that might conduce to the perfection of his art. His pencil was wonderfully neat and delicate; his touch light, his colouring exceedingly natural, lively, and remarkably tranſparent; and the feathers of his fowls were expreſſed with ſuch a ſwelling ſoftneſs, as might readily and agreeably deceive the eye of any ſpectator.

It is reported, that he had trained up a cock to ſtand in any attitude he wanted to deſcribe, and that it was his cuſtom to place that creature near his eaſel; ſo that, at the motion of his hand, the bird would fix itſelf in the proper poſture, and would continue in that particular poſition, without the ſmalleſt perceptible alteration, for ſeveral hours at a time.

The landſcapes which he introduces as the back grounds of his pictures, are adapted with peculiar judgment and ſkill, and admirably finiſhed; they harmonize with his ſubject, and always increaſe the force and the beauty of his principal objects. His touch was very ſingular in imitating the natural plumage of the fowls he painted; which not only produced a charming effect, but alſo may prove ſerviceable to an intelligent obſerver, to aſſiſt him in determining which are the genuine pictures of this maſter, and which are impoſitions. The works of Hondekoeter are juſtly in very great requeſt and eſtimation, and they generally afford a large price, almoſt in proportion to their value. He died 1695, aged 59.

HOND-HABEND. See HAND-HABEND.

HONDIUS, ABRAHAM, in *Biography.* This painter, who is well known in our kingdoms, was born at Rotterdam in 1638, according to the moſt authentic writers, though Deſcamps fixes his birth in 1650, twelve years later. He appears to have been an univerſal maſter, painting, with equal readineſs, landſcapes, animals of all kinds, particularly dogs, huntings of wild animals, boars, deer, wolves, and foxes, as alſo converſations and fowls; but his favourite ſubjects were huntings.

His manner ſeems peculiar to himſelf; it was bold and free; and, except Rubens and Snyders, few maſters have painted animals in a greater ſtyle, or with more ſpirit. There is certainly a great deal of fire in his compoſitions; but his colouring is often extravagant, and his drawing extremely incorrect. In general his pencilling was harſh, and he delighted in a fiery tint; yet ſome of his ſmall pictures are very neatly finiſhed. There is a great inequality as to the merit of the works of Hondius, ſome of them being in every reſpect abundantly ſuperior to others; but there is ſcarce any maſter whoſe compoſitions are ſo eaſily diſtinguiſhable as thoſe of Hondius, by certain particularities in his touch, his taſte of deſign, and his colouring.

Several of his pictures of dogs are much eſteemed; and one eſpecially is mentioned, in which he repreſented thirty different ſpecies of thoſe animals, all being well deſigned, and every diſtinct animal being characteriſed with ſome peculiar air, action, expreſſion, or attitude. As he was exceedingly haraſſed and tormented with the gout, the works of his latter time are more negligently executed than thoſe which he finiſhed in his prime; and, therefore, they very much contribute to leſſen the reputation he had acquired by ſome of his more ſtudied and better finiſhed performances.

His moſt capital picture is the burning of Troy, in which there are a variety of figures, many of them well deſigned and diſpoſed with judgment. Houbraken alſo mentions a candle-light of this maſter's hand, in which appeared a fine oppoſition of light and ſhadow, and the figures were extremely well deſigned and well coloured. He died 1691, aged 53.

HONDO, in *Geography*, a kingdom of Africa, in the Sierra Leone country, bordering on Quoja, between the Grain Coaſt and the river Scherbro.

HONDTSCHOOTE, a town of France, in the department of the North, and chief place of a canton, in the diſtrict of Bergues; 10 miles S. E. of Dunkirk. The place contains 3168, and the canton 11,194 inhabitants, on a territory of 130 kiliometres, in eight communes.

HONDURAS, a province of the domain or kingdom of Guatimala, in the Spaniſh dominions of North America, bounded on the N. by a bay of its own name, on the E. by the Moſquito ſhore and Caribbean ſea, on the S. by Nicaragua, and on the W. by Guatimala and Vera Paz. The extent of this province is reckoned about 390 miles from E. to W., and 150 from N. to S. The country, which conſiſts of mountains, vallies, and plains, is watered by many rivers, and the land is thus much enriched. It abounds with honey, wax, cotton, fine wool, and particularly dyeing woods, and has ſome gold and ſilver mines; the air is good except near low grounds and moraſſes; the ſoil is fertile, and in many parts produces Indian corn thrice in the year, together with wheat, peas, &c. Its paſtures are excellent, and it furniſhes all kinds of proviſions. Its vineyards afford grapes twice in the year; for immediately after the vintage, the grapes are cut again; and the ſecond grapes are ripe before Chriſtmas. For want of cultivation, many parts of this rich country have become deſert. Its chief towns are Valladolid the capital, Truxillo, Omoa, Gracias á Dios, and St. Jago. It derives its chief importance from thoſe tracts on the bay which furniſh logwood. (See *Bay of* HONDURAS.) The Moſquito Indians have entered into treaties with the Engliſh, who carry on the trade of mahogany and dyeing-woods.

HONDURAS, *Bay of*, a bay of the Caribbean ſea, adjoining the province of the ſame, and ſituated between Cape Honduras and Cape Catoche, the north-eaſternmoſt point of Yucatan, in lat. 21° 14′. The country, adjacent to this bay, is chiefly inhabited by the Moſquito Indians, who were formerly more numerous, but their population has been diminiſhed by the prevalence of the ſmall-pox. A nation, ſtill populous, has been fixed in the environs of Cape Gracias á Dios. This conſiſts of the Samboes, ſaid to be the deſcendants of the crew of a Guinea-ſhip, which was formerly wrecked in theſe latitudes. Their complexion, their features, their hair, and their propenſities, will ſcarcely allow us to trace them to any other origin. The firſt eſtabliſhment of the Engliſh in theſe regions was formed about the year 1730, at the diſtance of 26 leagues from Cape Honduras. At the diſtance of 54 leagues from this colony is Gracias á Dios, the harbour of which, formed by an arm of the ſea, is immenſe, and tolerably ſafe. It was near this famous cape that the Engliſh fixed themſelves, upon a navigable river, the borders of which are very fertile. Seventy leagues beyound this, theſe people found at Bluefield ſome ſpacious and fruitful plains, an acceſſible river, a convenient harbour, and a rock which might be eaſily made impregnable. In 1769 the three factories did not employ more than 206 white men, as many mulattoes, and 900 ſlaves. Excluſively of the mules and other articles ſent to Jamaica, they ſent this year to Europe 800,000 feet of mahogany, 200,000 pounds weight of ſarſaparilla, and 10,000 pounds of tortoiſe-ſhell. This commerce had been very much carried on by ſmugglers; but in 1763 the liberty of ſelling logwood was ſecured to Great Britain; however, ſhe was not permitted to raiſe forts, and was even obliged to deſtroy thoſe which had been built. The abbé Raynal obſerves, that the wood which grows upon the dry ſoil at Campeachy, is much ſuperior to that which is cut in the marſhes of Honduras; though the laſt-mentioned wood was moſt in uſe, becauſe the price of the former had for a long time paſt exceeded all bounds. Captain Henderſon has lately (*viz.* in 1809,) publiſhed "An Account of the Britiſh Settlement of Honduras," the reſult of his own obſervations and inquiries. The climate, he ſays, is better than that of moſt of our Weſt India iſlands; the air being refreſhed with regular ſea-breezes at all ſeaſons, except during the early part of ſummer, *viz.* the months of April, May, and June. The average heat is 30°. The only ſettlement formed by the Engliſh, which deſerves the appellation of a town, is called Balize, lying at the mouth of a river of the ſame name; which contains about 200 houſes, all built of wood, and raiſed on pillars eight or ten feet from the ground. The ſtores and offices occupy the firſt floor, and the dining and ſleeping rooms are placed on the ſecond. Each houſe has, likewiſe, its upper and lower piazzas, which form the cooleſt retreats in the building. The river Balize is navigable above 200 miles up the country; and ſeveral of our ſettlers have proceeded to that diſtance in queſt of wood. The bay of Honduras is ſprinkled with a great number of ſhoals, rocks, and cluſters of drowned iſlands, which render the navigation dangerous, and which, without ſkilful pilots, has occaſioned many wrecks. The danger is increaſed during the prevalence of the northerly winds, when the weather is generally hazy, and the currents are ſubject to the influence of the winds. The vicinity of Honduras to ſeveral of the Spaniſh ſettlements renders it an appropriate ſtation for the introduction of our manufactures, which has been hitherto ſubject to conſiderable impediments. The induſtry of our ſettlers has been ſo excluſively directed to the wood-trade, that agricultural cultivation has been neglected; though the ſoil is admirably rich, and fitted to produce either the ſugar, coffee, and cotton of our Weſt India iſlands, or the rice and maize of the continent. The fiſheries might alſo be rendered very productive; that which is moſt regarded is the turtle-fiſhery. Some few of the turtle caught here find their way to London; but moſt of them, eſpecially the ſpecies called "Hawk's bill," which yield the tortoiſe-ſhell, are conſumed on the ſpot. The country ſtill remains almoſt wholly covered with wood. The cutting of mahogany takes place twice in the courſe of the year; *viz.* at Chriſtmas and in autumn. The labour is performed by negroes, each gang of whom has a "huntſman," whoſe buſineſs it is to ſearch the woods and diſcover the ſpot where the exertions of his fellow-labourers may be moſt profitably employed. In order to effect his purpoſe, he cuts his way through the woods, and climbs the talleſt trees, in order to ſurvey the ſurrounding country. The colour of the mahogany leaves aids his eye in tracing the moſt abundant ſpot. The mahogany tree is cut about twelve feet from the ground, the axe-man ſtanding on a ſtage. The trunk of the tree furniſhes, of courſe, the wood of largeſt dimenſions; but for ornamental purpoſes the branches are preferable, the grain in them being cloſer, and the veins more variegated. As theſe trees are generally found ſeparate and diſperſed, a mahogany-walk comprehends an extent of ſeveral miles. Their growth is rapid, but leſs ſo than that of the logwood-tree, which is ſaid to attain maturity in five years. The trunks and branches are dragged to the riverſide, put together in rafts, and floated to the coaſt. Moſt of the negroes employed here have been brought from Jamaica, or have accompanied their owners from the United States; no direct importation from Africa having taken place, they are ſubjected to much leſs labour than the ſlaves in our ſugar colonies. The protection afforded by government to the Honduras trade, conſiſts in a convoy being appointed from Jamaica twice in the year, *viz.* in January and July. The annual revenue of the ſettlement is about 5000*l.* ſterling.

Of the aquatic ſpecies of birds around the bay of Honduras, the pelican and cormorant are the moſt predominant, induced to reſort thither for prey by the tranſparency of the ſea on this coaſt. Swallows alſo appear in great numbers in the rainy ſeaſon. They are obſerved to quit in a body, as ſoon as the dawn appears, the Savannah, in which they have reſted during the night, and to aſcend into the air in a compact ſpiral form, like a water-ſpout or column of ſmoke. Having attained a certain height they diſperſe in queſt of food, which forms the occupation of the day. At ſun-ſet their deſcent takes place in the ſame manner, with inconceivable rapidity, and with a noiſe which can be compared only to the ruſhing of a blaſt or the fall of a torrent. On the Moſquito coaſt the flies are ſo troubleſome that the natives are obliged to quit their dwellings in certain ſeaſons, and to paſs their nights in little barks upon the water. Theſe people ſeem to have arrived at that ſtage of ſavage ſociety which belongs to the claſs of "ſmall deſpotiſms." All the affairs of domeſtic life are performed by women; the ſucceſſion to the crown is hereditary; and the royal power is completely deſpotic, abſorbing within itſelf the executive, the legiſlative, and the judicial functions. They manifeſt no trace of religion except the adoration of evil ſpirits; and they have among them neither phyſician nor lawyer, but abound in conjurors. Polygamy is freely allowed; but adultery is puniſhed, though not capitally. They can ſupport long abſtinence from food, but they indulge in the cuſtomary exceſſes of ſavages when they get poſſeſſion of proviſions, continuing their repaſt day and night, except in the ſhort intervals of ſleep, until they have conſumed their whole ſtock. The warriors of the Moſquito tribe may amount to the number of 1500; and ſmall as this force is, they are able to keep their inland neighbours, whoſe manners are much ruder, in a ſtate of dependence. The Moſquitos have an hereditary averſion to the Spaniards, and profeſs great attachment to our countrymen.

HONDURAS, *Cape*, called alſo *Punta de Caſtilla*, a cape of North America, at the eaſtern ſide of the bay of Honduras. N. lat. 16°. W. long. 86° 16′.

HONDURAS, *Sea of*, is that part of the North ſea bounded N. by the iſland of Cuba, S. by the Moſquito ſhore, S.W. by the bay of Honduras, W. by the peninſula of Yucatan, N.W. by the gulf of Mexico, E.N.E. by Jamaica, and the Caribbean ſea.

HONDUROS, a town of the iſland of Cuba, 63 miles N.E. of Bayamo. N. lat. 21° 21′. W. long. 76° 4′.

HONE, NATHANIEL, in *Biography*, a portrait painter, who practiſed in London, with conſiderable reputation, in oil and miniature, and more particularly in enamel. He was one of thoſe artiſts who were created members of the Royal Academy at its foundation. He died in 1784.

HONE, *Cape*, in *Geography*, a cape on the coaſt of Algiers, called by the natives "Ras Hunneine," and by the ancients "Promontorium Magnum," ſituated, according to Dr. Shaw, in N. lat. 35° 24′. W. long. 1° 0′.

HONE *Key*, a ſmall iſland in the Spaniſh main, at the entrance of Bluefield's bay. N. lat. 11° 30′. W. long. 83° 1′.

HONE, a fine ſort of whet-ſtone, uſed for ſetting razors, pen-knives, &c. (See WHET-*ſtone*.) This is the cos novacula of Linnæus, with ſmall gritty particles. See COS *Novacula* and OIL-*ſtone*.

It is of a yellowiſh colour, and is vulgarly, but erroneouſly, ſuppoſed to be holly-wood petrified or changed into ſtone, by lying in a petrifying water for a certain ſeaſon.

Of theſe waters there are ſaid to be ſome in Oxfordſhire, that will thus petrify in a very ſhort time.

A ſort of hones is dug near Drogheda in Ireland: ſome have deſcribed theſe as petrified wood, from the vicinity of Lough Neagh.

At Woodthorp, Codnor upper park, and other iron-ſtone mines in Derbyſhire, thin beds of iron-ſtone are found in the binds belonging to the coal-meaſures, which make pretty good hones when cut and ground to a face. See Farey's Derbyſhire Report, vol. i.

HONES, *bed of*, or HONE-*pavement*, is one of the tools uſed in the operation of grinding ſpecula for teleſcopes. This is formed of pieces of the fineſt blue hone or whet-ſtone, which are nearly of the ſame breadth and thickneſs, and which, when whetted, appear moſt even and uniform in their colour and grain. Theſe pieces are to be cut into ſquare bits, and having ground one ſide of each concave on the convex marble, to which they are to be applied, with emery or fine ſand, they are to be cemented upon this thick round piece of marble in a kind of pavement, leaving a ſpace of a ſmall ſtraw's breadth between each, and placing their grain in an alternate direction. Mr. Mudge, inſtead of marble, uſes metal made of lead and tin, on which the hones are to be ſo diſpoſed that the lines between them may run ſtraight from one ſide to the other; and by this diſpoſition, the teeth of a fine ſaw, moved along each of the diviſions, will clear away the cement which riſes between the ſtones. This bed of hones ſhould be at leaſt a fourth part larger than the metal which is to be ground upon it. The ſurface of the metal, upon which it is to be cemented, may or may not, at the pleaſure of the workman, be turned of a convexity ſuitable to the gage. As ſoon as the hones are cemented down, and the joints cleared by the ſaw, the tool muſt be fixed in the lathe, and turned as exactly true to the gage as poſſible. By this inſtrument the ſpherical figure of the ſpeculum is completed, and its ſurface rendered fit for the poliſher. See *Plate* VI. *Optics*, *fig.* 2. Smith's Optics, book iii. chap. ii. art. 791. Phil. Tranſ. vol. lxvii. part i. p. 307. See GRINDING.

HONE-*wort*, in *Botany*. See SISON.

HONESTY. See LUNARIA.

HONEY, MEL, is a ſweet vegetable juice, collected by the bee from the flowers of different plants, and depoſited in the cells of the combs. See BEE.

It has been long known, that the bees collect their honey as well as their wax from the flowers of plants; but former writers had no diſtinct knowledge of the ſeveral parts of the flowers which furniſhed theſe induſtrious inſects with two ſuch different ſubſtances. It is now known that the honey is procured from thoſe parts of the flowers which were firſt diſcovered by Linnæus, and to which he has given the name of *nectaria*: theſe are certain veſicles or glands ſituated near the baſis of every petal, and continually ſecreting a nectareous or melleous juice. It is not yet aſcertained from what part of the flower or plant the bees collect the wax: ſome have ſuppoſed that it is furniſhed by the farina contained in the apices of the flowers; but N. Polhill, eſq. an ingenious friend of the editor, of whoſe extenſive and accurate acquaintance with the economy of the bees he has availed himſelf in articles pertaining to this ſubject, aſſures him that this is not the caſe; and that it is ſtill undiſcovered from whence they procure the wax. See Wax.

The bee ſeizes upon this part of the flower, and ſucks from it their honey, or a juice of that nature, which will become honey under her management. She receives this into her body, and carries it home to the hive, where ſhe unloads herſelf by emptying it into the cells which were before prepared to receive it. The bee does not receive the honey in collecting it from the flowers into the body, by means of her trunk, as many have ſuppoſed; for this trunk ſerves only to collect the ſweet juice, in ſmall drops, from the nectaria of flowers. When the trunk is thus loaded with the juice or honey, it depoſits it on the tongue, which is exerted for that purpoſe, and being drawn back into the mouth, conveys it into the œſophagus. The œſophagus of the bee is a long and ſlender canal, paſſing from the mouth into the thorax; towards its termination in that part it is diſtended into a ſort of bag, which forms the firſt ſtomach of the bee. Maraldi ſuppoſed the receptacle of the honey to be a bag, cloſed at the lower end, and only deſtined to receive the honey, and diſgorge it again upon occaſion; but Swammerdam, on a more accurate diſſection of this inſect, found it to be a real ſtomach, opening into another or ſecond ventricle. The firſt ſtomach, when empty, is no more than a white filament, which, being hollow, is capable of receiving the honey; and, when received, it becomes ſwelled and diſtended in proportion to the quantity it contains, and is very narrow at its lower part, where it is joined to the ſecond ſtomach. This is a ſort of white tranſparent bladder, and is uſually much diſtended, and ſo covered with large and broad circular muſcles, that it ſeems to reſemble a tub with many hoops. This ſtomach becomes again very ſlender and narrow at its lower end, where it is joined to the inteſtines. The ſecond ſtomach and the inteſtines of the bee are often found to contain a great quantity of the farina; but the firſt ſtomach contains only honey, and is ſeen, by diſſection, to be furniſhed with all the organs of contraction and diſtenſion which are neceſſary for throwing out its contents. When the honey has undergone a kind of concoction in the ſtomach, and is become much thicker than in its undigeſted ſtate (though the gentleman already referred to apprehends that it undergoes no kind of change in the ſtomach of the bee), it is diſgorged again through the mouth, and not as Swammerdam erroneouſly imagined, through a ſmall orifice in the end of the trunk. The proceſs of this operation may be eaſily diſcovered in glaſs hives, where the cells reach to the glaſs, and have only four ſides of wax, the glaſs ſerving for the other two ſides.

The bee that comes loaded to the cell thruſts its head very deep into it, and diſcharges the honey from its ſtomach in a very little time, and ſeemingly with very little trouble, by the mouth. One bee ſucceeds another till the whole cell is filled. In this work, it has been often obſerved, that what appears to be the laſt quantity of honey diſgorged into the cell is always of a different appearance from the reſt: this is of the nature of a cream, and is always much thicker than the reſt of the honey, which appears of one colour and conſiſtence; it ſeems to be very uſeful in the economy of the work, ſerving at once to keep the honey moiſt, and to prevent its running out by any accident. Though this cream or cruſt appears to be the laſt voided quantity, it is not ſo in reality, for it ſeems to have been gathered together from the firſt; and every freſh quantity of honey is added under, not upon its ſurface. To this purpoſe it is always obſerved, that the bee which comes loaded to the cell does not at once diſcharge its honey into it, but entering into the cell as deep as poſſible, it puts forward the anterior pair of legs, and with them pierces a hole through the cruſt or cream. While this hole is kept open by the feet, the bee diſgorges the honey in large drops from the mouth; theſe, falling into the hole made by the feet, mix with the maſs below, and the bee, before it flies off, new-models the cruſt, and cloſes up the hole; and this is regularly done by every bee that contributes to the general ſtore of the cell.

The ſeveral cells of the combs in every hive are differently filled with honey, and for different purpoſes: ſome is laid up for immediate conſumption, on occaſions of bad weather and the like accidents, or for the uſe of thoſe bees that in good weather ſtay at home to work, and are not ſupplied in any other way by thoſe which have been abroad collecting honey; and ſome is more carefully preſerved and deſtined for the ſupport of the ſwarm in the winter. Whenever any cell is filled with honey, it is always cloſed up, and never opened again, till all the honey in the cells which were not full is expended. The manner in which the bees make the lids or covers of the cells is this: they form a circle or ring of wax juſt within the verge of the cell; to this they add another ſuch ring, and then another within that; and thus the aperture is rendered ſmaller and ſmaller, and by a continuance of the ſame operation is finally cloſed, the lid being compoſed of a vaſt number of concentric circles. This covering is deſigned for preſerving the incloſed honey in a ſtate of proper conſiſtence, for a winter ſtore.

Honey has been ſuppoſed by many to be the only food of the bees who collect it; but this is evidently erroneous. The farina of flowers ſerves as food for young bees, whilſt they are in the form of maggots, but it is not ſo certain whether the old bees eat it or not; after which ſome ſay it is again thrown out of their mouths in form of wax, and uſed in the ſtructure of their cells; but others abſolutely deny this, becauſe the farina of different flowers varies in colour, whereas the wax is uniformly white.

Honey and wax form ſo conſiderable an article in the riches of a kingdom, that M. Reaumur ſtrongly recommended to the court of France, the encouragement of thoſe who raiſe ſwarms of bees, by deducting ſomething from their taxes in proportion to every hive of bees kept by them above a certain number. And as bees are ſo eaſily raiſed, and kept with ſo little expence and trouble, it is a wonder that they are not more generally propagated in the kingdom. One great means of preſerving and multiplying the bees would be the aboliſhing of that barbarous as well as prejudicial cuſtom, which has hitherto very generally prevailed, of deſtroying the whole hive of bees in order to obtain the honey. Reaumur's Hiſt. Inſ. vol. x. p. 89, &c. See Hive.

Honey is an article from which the cottage labourer frequently derives a very beneficial profit; and this would ſtill be conſiderably larger, if greater care was taken to have a more abundant ſupply of flowers in or near the ſituations in which the bees are kept.

There are many circumſtances neceſſary to the forming of good honey, ſuch as a warm and clear air, a good ſtate of health of the bees, and a quantity of aromatic and ſweet flowers in the neighbourhood of their hives. Some naturaliſts ſuppoſe that honey is of a different colour, according to the difference of the flowers or plants from which the bees ſuck it. The ancients eſteemed that of lilies and roſes to be the beſt; and Strabo relates, that there is a kind of honey in Pontus which is a ſtrong poiſon, being procured by bees which feed upon aconite and hemlock. F. Lamberti, however, aſſures us of the contrary, and affirms it to be the beſt honey in the world, on account of the great quantity of baum that grows there. He adds, that there is another very white kind of honey, hard as ſugar, which does not ſtick to the hands. At preſent, the honey of Narbonne, in France, is held to excel all others, on account of the roſemary which abounds there. Bees are uncommonly fond of the lime-tree, the privet, and phillyrea; and in Lithuania, there are large quantities of wild bees, who lodge in hollow trees in woods, and collect their honey chiefly from the lime; ſo that when the ſeaſon happens to be unfavourable at the time of the blowing of the lime, it is ſucceeded by a ſcarcity of honey. However, it is not to be ſuppoſed, that the bee confines itſelf to one particular flower; nor does it appear that the honey collected from one kind of flower differs eſſentially from that which is the produce of another; the only difference being in the quantity, colour, or ſome ſlight flavour from the flower. Excellent honey has been produced where nothing grew but nettles and other weeds.

The honey taken out of the hives in the beginning of ſummer is preferable to that gathered in autumn, ſince the firſt is the ſeaſon in which the bees are moſt vigorous, and the plants in their flowering ſtate.

We have two kinds of honey, the *white* and *yellow*.

The *white*, *mel album*, called alſo *virgin* honey, is that depoſited in clean new cells, which, when firſt formed, are of a pure white colour; but when the combs are old, eſpecially if bees have been bred in then, they become foul and diſcoloured, and vitiate the honey lodged in them. New honey is nearly as fluid as water, by age it acquires a greater degree of conſiſtence, and the cold of winter frequently congeals it. The ſecond kind, or *mel flavum*, is ſqueezed from the combs in a preſs, after having firſt ſoftened them with a little water over the fire. There is alſo an intermediate ſort of a yellowiſh white colour, drawn by expreſſion, without fire. That which runs ſpontaneouſly is purer than the expreſſed; a quantity of the wax and other impurities being forced out along with it by the preſſure, eſpecially when the combs are previouſly heated. The beſt ſort of honey is of a thick conſiſtence, eaſily and totally ſoluble in cold water, of a whitiſh colour, an agreeable ſmell, and a very pleaſant taſte.

Honey, expoſed to a gentle heat, as that of a water-bath, becomes thin, and throws up to its ſurface its waxy impurities, together with the meal or flower ſometimes fraudulently mingled with it, which may be thus ſeparated by deſpumation, ſo as to leave the honey pure, and to form the *mel deſpumatum* or clarified honey. On continuing the heat, there riſes a conſiderable quantity of aqueous fluid, impregnated with the fine ſmell of the honey; the inſpiſſated reſiduum, like the honey at firſt, diſſolves both in water and in rectified ſpirit, and promotes the union of oily and reſinous ſubſtances with watery liquors. By treating the inſpiſſated maſs with moiſt clay, as practiſed by the ſugar-baker for purifying ſugar from its unctuous treacly matter, the unctuous parts of honey may in like manner be ſeparated, and its pure ſweet matter obtained in the form of a ſolid, ſaline, white concrete.

The ſpecific gravity of clarified honey has been fixed at 1.31; but the tenacity of medicated honeys in general is the more uſual teſt of the proper conſiſtence. If a portion of it, when cold, be divided by the edge of a ſpoon, it ought to unite again very ſlowly.

It is obſerved, that the boiling of honey, though it diſſipates great part of its odorous matter, and thus proves in ſome caſes injurious to it, is nevertheleſs in other caſes of advantage. There are particular conſtitutions with which honey diſagrees, and in which very ſmall quantities occaſion gripes, purging, and great diſorders; but boiling deprives it of that quality which produces theſe effects. Neumann's Chem. by Lewis, p. 330. Lewis's Mat. Med. p. 376.

This juice is an uſeful ſweet for medicinal as well as domeſtic purpoſes: it is more aperient and detergent than the ſimple ſweet prepared from the ſugar-cane; and particularly ſerviceable for promoting expectoration in diſorders of the breaſt, and as an ingredient in cooling and detergent gargariſms. For theſe and other ſimilar intentions it is ſometimes mixed with vinegar in the proportion of two pounds of clarified honey to one pint of the acetic acid, boiled down to a proper conſiſtence in a glaſs veſſel over a ſlow fire, and thus forms the oxymel ſimple of the ſhops; it is alſo impregnated with the virtues of different vegetables, by boiling it in the ſame manner with their juice or infuſions, till the watery parts of the juice or infuſion have exhaled and left the active matter incorporated with the honey. See OXYMEL.

Honey contains a quantity of fixed air, and is antiſeptic as well as detergent and diuretic. Sir John Pringle recommends one pound and a quarter to be taken regularly every week in caſes of the gravel, or when the kidnies are loaded with ſand.

Honey is the baſis of ſeveral compoſitions in pharmacy, though in this reſpect it is leſs uſed than formerly. Of honey, with the addition of roſes or violets, mercurialis, &c. (ſee OXYMEL), was made *mel roſatum*, *mercuriale*, *helleboratum*, &c. There is alſo a *mel ſcilliticum*, or a preparation of ſquills; *mel paſſulatum*, made with raiſins boiled in hot water; and *mel anthoſatum*, made with roſemary-flowers.

Roſe honey, *mel roſæ*, *roſaceum*, or *roſatum*, is prepared by macerating four ounces of red roſe petals dried in three pints of boiling water for ſix hours, and then ſtraining, and afterwards adding five pounds of clarified honey to the ſtrained liquor, and by means of a water-bath, boiling it cloſely down to a proper conſiſtence.

Honey of *borax*, *mel boracis*, is prepared by mixing a dram of borate of ſoda powdered with an ounce of clarified honey. This combination is uſefully employed as a detergent in aphthous affections of the fauces.

Honey is alſo an ingredient in ſeveral drinks, as mum, metheglin, &c.

The chemiſts alſo draw a water, a ſpirit, an oil, &c. from honey.

Mr. Lemery, in his analyſis of honey, obſerves, that two pounds of fine honey diſtilled in balneo Mariæ, afford ſix ounces of clear water of an inſipid taſte and of the ſmell of honey: this is commonly called the *dew* of honey. A larger quantity of phlegm may be procured by continuing the diſtillation, but it becomes foul. This liquor, though inſipid to the taſte, yet contains a latent acid, for it reddens the turnſole; but it neither ferments with the volatile nor fixed alkalies. The cucurbit being now placed in the ſand heat, there come over four ounces of a yellowiſh pellucid water of an acrid taſte, of a ſtrong ſmell of honey, and ſomewhat empyreumatic: this liquor reddens the turnſole colour more than the former. The fire being increaſed, there ariſe white clouds, which fill the head of the cucurbit and the receiver, and theſe finally condenſe into a third liquor, which is called the ſpirit of honey. This will be about three ounces in quantity, and of a red colour and empyreumatic ſmell, yet with an agreeable flavour, and of an acrid and burning taſte. This is a ſtronger acid than either of the former, and ferments with an alkali.

The fire being again increaſed, more clouds ariſe, and, in fine, there is a fourth liquor produced; this is in quantity about two ounces, of an orange colour, and of an acid taſte, but leſs acrid than the third liquor, as it contains more oil, which ſoftens and ſweetens it. Like the former, it ferments with alkalies, and reddens the colour of turnſole When the diſtillation is thus finiſhed, there will remain in the cucurbit fifteen ounces and a half of a light ſpungy black coal. (Mem. Acad. Par. 1706.) This is to be then put under a retort for a freſh diſtillation, and a ſtrong fire under this veſſel will raiſe from it ſeven ounces of a reddiſh brown liquor, which ſtains the fingers to an orange colour, of a burnt ſmell, yet with ſomething agreeable in it, and of an acid and very acrid pungent taſte. Beſides this, there come over two drams of a thick black oil, looking like tar; this alſo was of an acrid taſte, which was owing to ſome of the ſalts of the honey being blended with it. There is much more oil contained in the honey, but it does not come over ſeparate but blended with the other liquors; and after they have ſtood ſome days precipitates itſelf from them, and is found ſticking to the ſides and bottom of the veſſel. The matter remaining in the retort is about ſeven ounces of a black coal, of a light ſpungy texture, and of a taſte almoſt inſipid, and only ſeeming to contain a little ſalt. We ſee by this proceſs, that thirty-two ounces of honey yield twenty-four ounces and two drams of liquor, that being the difference in weight, between the honey when firſt put in, and the laſt caput mortuum. Twenty-two ounces and ſix drams are the quantity here preſerved of the ſeveral liquors, the reſt having eſcaped through the junctures of the veſſels, as will always be the caſe in ſuch diſtillations. Id. ibid.

The caput mortuum of this, and ſeveral other diſtillations of honey, the whole making three pounds and a half, were put into an unglazed earthen pot, and calcined over the fire for ten hours; this readily took fire like common charcoal, and burnt till it loſt ten ounces in weight, but without falling into aſhes. The remaining coal had then a more ſaline taſte than before. Any acid liquor poured upon this fermented, as with the common alkalies; and when thrown into water to make a lixivium, it bubbled in the manner of quick-lime thrown into water; and in the common way of making the lixivial ſalts, this yielded a dram and a half of an acrid alkaline one.

It is remarkable, that the calcined caput mortuum of honey contains, like other vegetable aſhes, true particles of iron, which adhere to a knife touched with a magnet.

HONEY, *Wild*. St. Adaman, abbot of Hii, in his deſcription of the holy places, obſerves, that in the place where St. John the Baptiſt lived in the Deſert, there are locuſts which the poor people boil with oil, and a ſort of herbs with large, long leaves of a milk colour, and a taſte like that of honey; and that this is what in ſcripture is called *wild* honey. See ACRIDOPHAGI.

HONEY-*bird*, in *Ornithology*. See TROCHILUS.

HONEY-*buzzard*, the Engliſh name of the *Buteo apivorus*. See FALCO *Apivorus*.

HONEY *of Roſes*. See ROSE, and HONEY, *ſupra*.

HONEY-*comb*, a waxen ſtructure, full of cells, framed by the bees to depoſit their honey, eggs, &c. in.

The conſtruction of the honey-comb ſeems one of the moſt ſurpriſing parts of the work of inſects, and the materials of which it is compoſed, which though evidently collected from flowers of plants, yet do not, that we know of, exiſt in them in that form, have given great cauſe of ſpeculation to the curious. The regular ſtructure of the comb is alſo equally wonderful. When the ſeveral cells in it are examined, it ſhould ſeem that the niceſt rules of geometry had been conſulted for its compoſition, and all the advantages that could be wiſhed or deſired in a thing of that kind are evidently found in it.

The bees, in the ſtructure of this receptacle of their honey, ſeem to have reſolved a geometrical problem, far from an eaſy one, and indeed clogged with ſo many conditions, that it might have puzzled able proficients in that ſcience. This may be expreſſed in theſe words: a quantity of wax being given, to form it into a number of angular and equal cells, of a determinate capacity, but the greateſt that can be made with that quantity of wax, and, at the ſame time, that theſe cells ſhall be ſo diſpoſed as to take up as little room as poſſible in the hive. In order to this laſt condition, it is neceſſary that the cells touch one another, in ſuch a manner, that there be no angular ſpace nor cavity between them. The bees have effected all this by making the cells all hexangular, or tubes of ſix equal ſides; triangular, quadrangular, and ſome other figures; for the cells might have been indeed ſo diſpoſed between one another as to leave no ſpace; but then an equal number of them could not be made with the ſame quantity of wax. The body of the bee being rounded, it will alſo be received into an hexangular cell, without leaving ſuch large ſpaces as it muſt if received into a triangular or ſquare one.

The method of making two ſets of cells in each comb, is alſo admirably contrived to ſave the expence of wax, ſince, had they been made ſingle, every comb muſt have had its peculiar baſe, and every ſet of cells their bottom of wax; whereas one bottom now ſerves to two cells, and there is but one plate of wax in the centre of a double comb. There is, however, this farther difficulty attending it, that the ſeveral cells are not ſo many hexagonal tubes with flat and broad baſes, or tubes of an equal breadth all the way; but they are truly pointed at the bottom, being every one of them a hexangular cell, with a pyramidal baſe, and forming that kind of figure, as Maraldi and Reaumur firſt diſcovered, which requires at leaſt wax for containing the ſame quantity of honey. Each of theſe baſes is compoſed of three equal rhombuſes, and each baſe, in this manner, becomes the baſe of three other cells on the oppoſite ſide of the comb.

This is eaſily demonſtrated to thoſe who underſtand geometry, by means of the ſeveral figures and poſitions of the oppoſite baſes of the cells of the two ſides of the comb; but the moſt familiar explication of it to a common obſerver, is to ſtick three ſmall pins through the baſe of any one cell, each in the centre of the rhomb that makes one ſide of that baſe: if, after this, the comb be turned, the three pins will be found in the centres of three different cells of the oppoſite ſide.

The obtuſe angles of the three equal rhombuſes that form the baſe, are found to be the doubles of an angle, (which often comes under conſideration in queſtions relating to *maxima* and *minima*,) whoſe tangent is to the radius as the diagonal is to the ſide of the ſquare. By this conſtruction, three of the ſix ſolid angles at the baſe, that correſpond to the angles of the hexagon, are equal to each other, and alſo to the ſolid angle at the apex of the figure, each of which ſolid angles is reſpectively formed from three equal, plane, obtuſe angles; and the other three ſolid angles are alſo equal to each other, but each of them is formed by four equal, plane, acute angles, which are the ſupplements of the former obtuſe angles. Monſ. Maraldi found, by menſuration, that the obtuſe angles of the rhombuſes were nearly 110°, and obſerved, that if they were ſuppoſed equal to each other, each of them muſt be 109° 28′; and Mr. Koenig, by the method of infiniteſimals, found, that this angle, in order to employ the leaſt wax poſſible in a cell of the ſame capacity, ought to be 109° 26′. Mr. Maclaurin has alſo demonſtrated, from the principles of common geometry, that the moſt advantageous angle is that which reſults from the ſuppoſed equality of the three plane angles forming the ſolid angle. We ſhall ſubjoin the demonſtration for the ſake of the mathematical reader.

Let G N and N M (*Plate* VIII. *Geometry*, *figs.* 98 and 99.) repreſent any two adjoining ſides of the hexagon, or the ſection of the cell perpendicularly to its length. The ſides of the cell are not complete parallelograms, as C G N K, B M N K, but trapezia, C G N E, B M N E, to which a rhombus C E B *e* is fitted at O E, that has the oppoſite point *e* in the apex of the figure; ſo that three rhombuſes of this kind, with ſix trapezia, may complete the figure of the cell. Let O be the centre of the hexagon, of which C K and K B are adjoining ſides; join C B and K O interſecting in A; and, becauſe C O B is equal to C K B, and K E equal to O *e*, the ſolid E B C K is equal to the ſolid *e* B C O; whence it follows, that the ſolid content of the cell will be the ſame, wherever the point E is taken in the right line K N, the points C, K, B, G, N, and M, being given. It is, therefore, neceſſary to enquire, where the point E is to be taken in K N, ſo that the area of the rhombus C E B *e*, together with that of the two trapezia C G N E, E N M B, may form the leaſt ſuperficies. Becauſe E *e* is perpendicular to B C in A, the area of the rhombus is $AE \times BC$, and that of the trapezia $\overline{CG + EN} \times KC$; the ſum of theſe is $AE \times BC + 2\,KN \times KC - KE \times KC$; and becauſe $2\,KN \times KC$ is invariable, we are to enquire when $AE \times BC - KE \times KC$ is a minimum?

Suppoſe the point L to be ſo taken upon K N, that K L may be to A L as K C is to B C. From the centre A deſcribe in the plane A K E, with the radius A E, an arc E R meeting A L, produced, if neceſſary, in R: let E V be perpendicular to A R in V, and K H be perpendicular to the ſame in H; then the triangles L E V, L K H, L A K, being ſimilar, we have $LV : LE :: LH : LK :: LK : LA :: KC : BC$ by the ſuppoſition, Hence, when E is between L and N, we have $LH + LV (= VH) : LK + LE (= KE) :: KC : BC$; and when E is between K and L, we have $LH - LV (= VH) : LK - LE (= KE) :: KC : BC$; that is, in both caſes we have $KE \times KC = VH \times BC$; and conſequently $AE \times BC - KE \times KC = AE \times BC - VH \times BC = \overline{AE - VH} \times BC = \overline{AR - VH} \times BC = \overline{AH + VR} \times BC$: which expreſſion, becauſe A H and B C do not vary, is evidently leaſt when V R vaniſhes, *i. e.* when E is upon L. Therefore C L B *l* is the rhombus of the moſt advantageous form in reſpect of frugality, when K L is to A L as K C is to B C. But as O K is biſected in A, $KC^2 = OK^2 = 4\,AK^2$, and $AC^2 = 3\,AK^2$, or $BC = 2\,AC = 2\sqrt{3} \times AK$; conſequently, $KC : BC :: 2\,AK : 2\sqrt{3} \times AK :: 1 : \sqrt{3}$; and $KL : AL :: (KC : BC ::)\ 1 : \sqrt{3}$; or $AL : AK :: \sqrt{3} : \sqrt{2}$; and (becauſe $AK : AC :: 1 : \sqrt{3}$) $AL : AC :: 1 : \sqrt{2}$; *i. e.* the angle C L A is that, whoſe tangent is to the radius as $\sqrt{2}$ to 1, or as 14142135 to 10000000; and therefore it is 54° 44′ 8″, and conſequently the angle of the rhombus of the beſt form is that of 109° 28′ 16″.

By this ſolution it is eaſy to eſtimate what ſaving is obtained by means of this conſtruction.

If the baſe were flat, and not of the pyramidal form above deſcribed, then, beſides completing the parallelograms C G N K and B M N K, the ſurface of the baſe had would be $3\,CB \times AK$; what they really do form amounts in ſurface to the ſame parallellograms, and $3\,CB \times AH$; the ſavings therefore amount to $3\,CB \times \overline{AK - AH} = 3\,CB \times AH \times \frac{\sqrt{3} - \sqrt{2}}{\sqrt{2}}$, which is almoſt a fourth part of the pains and expence of wax they beſtow above what was neceſſary for completing the parallelogram ſides of the cells.

Mr. Maclaurin has alſo demonſtrated, that the plane angles C L B, C L N, and B L N, which form the ſolid angle at L or the apex at *l*, are equal to each other; from which it is obvious, that the four acute, plane angles, which form the ſolid angle at C or B, are likewiſe mutually equal. It may be alſo added, that if the cells had been of any other form than hexagonal, and the baſes had ſtill been pyramidal, theſe muſt have been terminated by trapezia, and not by rhombuſes, and therefore they would have been leſs regular, becauſe O A and A K would have been unequal. Nor could there have been room for ſuch an advantageous or frugal conſtruction as that we have deſcribed, becauſe the ſolid contents of the cell would have increaſed with the right line K E. See Phil. Tranſ. abr. vol. ix. p. 2, &c.

This conſtruction not only occaſions a very great ſaving of the wax or matter of the comb; but beſides this, there is another great advantage, which is, that the angles, reſulting from this combination of the baſes, greatly ſtrengthen the whole work.

The matter of which the comb is made, coſts the bees ſo much pains and labour in collecting, that it is no wonder they are careful and ſparing of it in the work. The ſides of the cells are all much thinner than the fineſt paper, and yet they are ſo ſtrengthened by their diſpoſition, that they are able to reſiſt all the motions of the bee when within them, as they are very frequently obliged to be. The effect of their thruſting their bodies into the cells, would be the burſting of thoſe cells at the top, were not this well guarded againſt. But to prevent this, the creatures extend a cord or roll of wax round the verge of every cell, in ſuch a manner, that it is ſcarcely poſſible they ſhould ſplit in that particular part. This cord or roll is at leaſt three times as thick as the ſides of the cell, and is even much thicker and ſtronger at the angles of the cell than elſewhere; ſo that the aperture of each cell is not regularly hexagonal, though its inner cavity be perfectly ſo.

The baſes of the cells are not always perfectly trilateral; ſometimes, inſtead of the three rhombs they ſhould be compoſed of, they conſiſt of four pieces, the bee having begun her work wrong; but then it is admirable to obſerve, how nicely the two ſmaller pieces are afterwards joined, that the angle they make may be as nearly as poſſible equal to that of one of the rhombs, ſo that the baſe of the cell ſtill remains very nearly trilateral.

It would be a moſt deſirable thing to ſee the bees at work in their making theſe elegant and regular fabrics; but it is ſcarcely poſſible to ſee any thing of this kind diſtinctly, even with the advantages of glaſs hives; for no bee ever works ſingly on this occaſion, but wherever the fabric is erecting, there are numbers together, all trying to aſſiſt one another; and their motions are ſo ſwift, and ſo hid by their ſtanding before one another, that very little is to be ſeen of them. New bees are every moment coming to the place, and old ones going away; and very frequently thoſe which arrive late are diſpatched away immediately after they arrive. There are only ſome very ſhort moments in which the glaſſes of the hives can give a view of the creatures regularly employed in their work, for the moment that one ſees a bee at work in building, that moment we ſee one either fly off, or ſome other bee get before her, ſo as to hinder the view.

Theſe momentary ſights, however, are ſufficient to make it plain, that the bee uſes her teeth in modelling and faſhioning the wax. The ſide of a cell is always received between the two teeth on this occaſion, and by means of repeated blows on each ſide from each tooth, the ſide is brought to a proper thinneſs, and the wax is by the ſame means wrought up to a proper conſiſtence and firmneſs.

The celerity with which a ſwarm of bees received into a hive, where they find themſelves lodged to their minds, bring their works of the combs to perfection, is amazing. In a week's time, when the weather favours, the half or two-thirds of a hive will be filled with combs. There are vaſt numbers at work all at once, and that they may not incommode one another, they do not work upon the firſt comb till it is finiſhed; but when the foundation of that is laid, they go to work upon another; ſo that there are often the beginnings of three or four ſtories made at once, and ſo many ſwarms allotted to the carrying on the work of each.

The ſeveral combs are all placed parallel one to another, and hang perpendicularly from the top of the hive to the bottom; they begin each comb at the top or upper part of the hive, and carry it down to the floor, from ſide to ſide; and there is ſuch a ſpace left between them, that the bees can eaſily paſs between: there are alſo holes made through the ſubſtances of the ſeveral combs, by which they paſs from the ſpace that lies between one pair of combs and another. They often place a part of the combs in a contrary direction to the reſt; ſo that while the others are placed horizontally, theſe ſtand perpendicular: there are alſo ſeveral other directions, in which they are diſpoſed, which are eaſily accounted for from the nature of the place, and are always found to be the very beſt that could be uſed for the occaſion.

Though the ſides of all the cells are extremely thin, yet the combs are very heavy when full of honey. This might endanger their breaking their hold, if only ſuſtained from the top; and for this reaſon, the bees give them ſeveral additional ſupports in whatever places they can, often faſtening them in many places one to another, and often fixing them to the ſides of the edifice by large and ſolid lumps of wax.

It has generally been ſuppoſed that every bee of a ſwarm has its particular cell in ſome comb which was its own, and contained honey for its peculiar food; but the uſe of the glaſs hives has ſhewn us that all the cells are uſed in common. Reaumur, Hiſt. Inſ. vol. ix. p. 282. vol. x. p. 21, &c.

HONEY-*comb*, in *Gunnery*, is a flaw in the metal of a piece of ordnance, when it is ill caſt and ſpongious.

HONEY-*comb-ſtone*, in *Natural Hiſtory*, the name given by many authors to a ſpecies of foſſile coral, which is uſually found in large maſſes, and thoſe full of large hexagonal cells, reſembling thoſe of a honey-comb. Theſe are but lightly ſtriated, and uſually run deep into the ſtone.

HONEY-*comb-ſtone*, or Lapis favaginoſus, is enumerated by Dr. Woodward in his Method of Foſſils, and is mentioned by Dr. Plot as found in the north-eaſt part of Staffordſhire, which refer, it ſeems, to a ſpecies of coralline in the lime-ſtone rocks.

HONEY-*dew*, a term frequently applied to a clammy saccharine ſubſtance, which is often ſeen covering the leaves and other parts of different kinds of trees and plants, at ſome particular ſeaſons of the year. It does not appear that the cauſe of this extraordinary appearance is yet fully underſtood, as it has not, by any means, been well aſcertained, whether it derives its origin from external circumſtances, or ſome morbid affection of the vegetables themſelves. The author of Phytologia appears to incline to the latter ſuppoſition, and conceives it to be an excretion from the parts of the plants which are affected with it. Indeed, it ſeems not improbable but that there may be ſome local derangement in the parts of the plants which are covered with this ſticky material.

Gaſſendus holds, that a viſcid juice, tranſpiring out of the leaves, helps to compoſe this honey; or to convert the dew, falling on them, into a honey ſubſtance, which before had nothing of it: hence he accounts for the reaſon why we find it on ſome trees and not on others.

This honey-dew, falling on the ears and ſtalks of wheat, beſmears them with a different colour from the natural; and, being of a clammy ſubſtance, ſo binds up the young, tender, and cloſe ears of the wheat, by the heat of the ſun, that it prevents the growth and completing of the perfect grain therein.

Hops, when in flower, are ſubject to the diſtemper called the honey-dew, which appears in the form of a meal, and is found by the microſcope to contain the eggs of ſmall inſects, which fly about in ſwarms near the time when the hop is in flower, and gnaw the leaves and ſhoots. Several methods have been propoſed for preventing the damage ariſing from this dew; particularly by ſurrounding the hop-hills with hot dung, or cauſing wood-aſhes to be ſcattered with the wind over the hops at the time when the mealy dew falls. But the moſt effectual way of preventing its ill effects is to ſtrip off the leaves, whereby the ſmall inſects contained in it periſh at once, and before freſh leaves ſpring forth, their ſeaſon of breeding is paſt.

A ſhower of rain, ſucceeding preſently after the fall thereof, or the wind blowing ſtiffly, are the only natural remedies againſt it. See APHIS, DEW, MILDEW, and *Perſpiration of* PLANTS.

HONEY-*flower*, in *Botany*, &c. See MELIANTHUS.

HONEY-*graſs*, the common name of a ſort of graſs that is occaſionally found in ſhady ſituations, but which is not found of much utility as the food of domeſtic animals. See MELLICA.

HONEY-*guide*, in *Ornithology*. See CUCULUS *Indicator*.

HONEY *Iſland*, in *Geography*, a ſmall iſland in the Atlantic, near the coaſt of Guinea. N. lat. 10° 18′. W. long. 15°.

HONEY-*locuſt*, or *three-thorned Acacia*, in *Botany*. See GLEDITSIA.

HONEY-*ſuckle*, in *Botany* and *Gardening*. See LONICERA.

HONEY-*ſuckle*, *African-fly*. See HALLERIA.

HONEY-*ſuckle*, *American upright*. See AZALEA.

HONEY-*ſuckle*, *French*. See HEDYSARUM.

HONEY-*ſuckle Clover*, in *Agriculture*, a term not unfrequently made uſe of to ſignify white clover. It is likewiſe often ſimply termed honey-ſuckle. See CLOVER, and *White* CLOVER.

HONEY-*ſuckle*, *Trumpet*. See HONEY-*ſuckle*, ſupra.

HONEY-*ſuckle Graſs*. See TREFOIL.

HONEY-*wort*. See CERINTHE.

HONEYYOE, in *Geography*, a lake of America, in the Geneſſee country, New York, W. of Canandarque lake, five miles long and three broad.

HONFLEUR, a town of France, in the department of the Calvados, and chief place of a canton, in the diſtrict of Pont l'Evêque; ſeven miles N.N.E. of Pont l'Evêque. The place contains 9,600, and the canton 16,107 inhabitants, on a territory of 100 kiliometres, in 16 communes. N. lat. 49° 25′. E. long. 0° 19′.

HONGIE, a town of Auſtrian Poland, in Galicia; 30 miles W.S.W. of Halicz.

HONGILAX, a town of Sweden, in the government of Abo; 35 miles S. of Biorneborg.

HONG-TCHEOU, a town of the kingdom of Corea; 20 miles S.S.E. of Haimen.

HONG-TSE, a large lake of China, which diſcharges its waters into the Hoang; 60 miles from the ſea.

HONHAY, a town of Bengal; nine miles S.S.E. of Ramgur.

HON-HOTOU, a lake of Chineſe Tartary; 24 miles in circumference. N. lat. 48 29′. E. long. 92° 46.

HONI *ſoit qui mal y penſe*, q. d. *evil to him that thinks evil;* the motto of the moſt noble order of the knights of the Garter. See GARTER and MOTTO.

HONIDA, in *Geography*, a town of Perſia, in the province of Irak; 45 miles E.N.E. of Gnerden.

HONIGFELTZ, a town of Pruſſia, in Pomerelia; 15 miles S. of Marienburg.

HONIMAO, or ULIASSER, one of the Molucca iſlands, about 9 miles long, and from 3 to 5 wide. The land is fertile, and its chief productions are rice and cloves. S. lat. 3° 30′. E. long. 129° 2′.

HONINGDAEL, a town of Norway, in the dioceſe of Drontheim; 80 miles S.W. of Romſdal.

HONITON, is a borough, market town, and pariſh in the hundred of Axminſter, and county of Devon, England. It conſiſts principally of one broad handſome ſtreet, running from eaſt to weſt, and another croſſing it at right angles: through the former flows a ſmall ſtream, from which the inhabitants are ſupplied by a dipping place oppoſite to almoſt every door. The buildings are moſtly modern; the town having ſuffered conſiderably by fire at different times. In the year 1747, three-fourths of the houſes were reduced to aſhes, and ſeveral hundreds of the labouring inhabitants thrown out of employ. In 1765, nearly 180 dwellings, and other buildings, were deſtroyed: another fire, in 1790, conſumed 30 more; and a fourth, in 1797, the ſame number, together with the bank. The town is now in a ſtate of great improvement; and the buildings are in general covered with ſlate: the number of houſes returned, under the late act, was 557; the inhabitants 2377. The chief article of manufacture is broad lace, and edgings, of which conſiderable quantities are diſpoſed of in the metropolis. The pariſh church is ſituated on an eminence at the diſtance of about half a mile from the town. It was originally a ſmall chapel for mendicant friars, but was enlarged about the year 1482, chiefly at the expence of Courtenay, biſhop of Exeter; who alſo gave the curious ſcreen which ſeparates the chancel from the nave. The ancient parochial church is ſuppoſed to have ſtood in the town on the ſpot now occupied by Allhallow's chapel; which is a neat ſtructure, with a ſquare embattled tower of flint; and was erected by ſubſcription, in place of an older edifice, about the year 1765. Beſides theſe places of religious worſhip, here are three meeting-houſes for the reſpective denominations of Independents, Baptiſts, and Preſbyterians. The education of the poorer claſſes is partly provided for in a ſmall free-ſchool for boys, and a ſchool of induſtry for girls: the latter is ſupported by the ſubſcription of females. This town poſſeſſed the privilege of a market previous to the reign of king John, by whoſe direction the day on which it was held was changed from Sunday to Saturday. Honiton ſends two members to parliament; but, though an ancient borough by preſcription, it was only twice repreſented prior to the time of Charles I.: the firſt return was made in the twenty-eighth year of Edward I. The right of election, which was formerly extended to every houſekeeper not receiving alms, is now veſted ſolely in the burgage holders paying ſcot and lot: the number of voters is about 350. The government of the town is under the direction of a portreve and bailiff, who are annually choſen at the court of the lord of the manor. Honiton is 159 miles diſtant from London. Polwhele's Hiſtory and Antiquities of Devonſhire, fol.

HONNOCHETO LAKE, a lake of Weſt Florida. N. lat. 31° 22′. W. long. 91° 27′.

HONOMINIES, a river of America, in the N.W. territory, which runs S.E into Puan bay. Between the head of this river and lake Superior is a ſhort portage.

HONOPOLOGAN, a town of the iſland of Ceylon; 55 miles N.N.W. of Parroah.

HONORAT, a ſmall iſland in the Mediterranean, near the coaſt of France. N. lat. 43° 30′. E. long. 7° 7′.

HONORIACI, in *Antiquity*, a ſpecies or order of ſoldiery under the eaſtern empire, who introduced the Goths, Vandals, Alani, Suevi, &c., into Spain.

Didymus and Verinianus, two brothers, had, with great vigilance and valour, defended the paſſages of the Pyreneans againſt the Barbarians, for ſome time, at their own expence; but being at length killed, the emperor Conſtantius appointed the honoriaci to defend thoſe paſſages, who, not contented to lay them open to all the nations of the North, then ravaging the Gauls, joined themſelves to them.

HONORIS RESPECTUM, *Challenge propter*, in *Law*. See CHALLENGE.

HONORIUS, emperor of the Weſt, in *Biography*, ſecond ſon of the great Theodoſius, was born in 384; obtained the title of Auguſtus, with his brother Arcadius, in 393, and ſucceeded to his portion of the empire at his father's death in 395. The reins of government were, during his minority, placed in the hands of the illuſtrious general Stilicho, whoſe daughter he married in 398. As his character opened he appeared ill adapted to his high ſtation, and was addicted to puerile amuſements, void alike of vigour and talents, and in every reſpect unfit to wield the ſceptre of a mighty people. The times, however, wore a ſerious aſpect; and the danger to which the empire was expoſed required wiſdom and fortitude. The revolt of the Goths, and an invaſion of Italy by Alaric, with whom Stilicho had been obliged to make a kind of compromiſe, ſo alarmed the young emperor, that in 403 he fled from his palace, and was for a time beſieged by the Goths in a town of Liguria, in which he had taken ſhelter. His faithful general Stilicho came to his releaſe, and, by the defeat of Alaric, freed Italy from preſent danger. The pageant prince was led to Rome, and had the honour of a triumph, at which, for the laſt time, there was an exhibition of the inhuman combats of gladiators. After this the emperor fixed the ſeat of empire at Ravenna: he conquered his enemies by his generals, being reſolved never more to expoſe his ſacred perſon to any riſk: he ſuffered himſelf to be governed by his miniſters, who took advantage of their imperial maſter's indolence and inactivity. He died of a dropſy, in the 39th year of his age. Under Honorius and his brother the Roman power was divided into two different empires. The ſucceſſors of Honorius, who fixed their reſidence at Rome, were called emperors of the Weſt, and the ſucceſſors of Arcadius, who ſat on the throne of Conſtantinople, were diſtinguiſhed by the title of emperors of the Eaſtern Roman empire. Honorius was twice married, but left no iſſue. Gibbon. Univer. Hiſt.

Honorius I., pope, ſon of Petronius, a perſon of conſular dignity, was choſen to fill the Roman ſee on the death of Boniface V., in the year 626. The moſt remarkable circumſtance in the life of this pope was, his having been induced to give his ſanction to the opinion of the Monothelites, who maintained that in Chriſt there was only one will, one operation, for which he was ſolemnly condemned by the ſixth general council, in the pontificate of pope Agatho. Some account of the ſects MONOTHELITES, and MONOPHYSITES, will be found under their reſpective articles. Honorius probably knew little about the matter, nor was able to attach any preciſe and definite meaning to the expreſſions which he was led to make uſe of. He died in 638, after a reign of nearly thirteen years. He is greatly praiſed for having employed diligence and zeal in embelliſhing churches, and other conſecrated places, with the moſt pompous and magnificent ornaments. Some of his letters are extant in the fifth volume of the "Collect. Concil." He is author of an epigram on the apoſtles looking up towards heaven with aſtoniſhment at the aſcenſion of Chriſt, which is to be found in the twelfth volume of the Bibl. Patr. Moreri. Bower.

Honorius II., pope, whoſe original name was Lambert, was a native of the province of Bologna. Having embraced the eccleſiaſtical life he was preferred by pope Paſchal II. to the epiſcopal ſee of Veletri, and afterwards tranſlated to that of Oſtia. Upon the death of Calixtus in 1124, Honorius was elected to the popedom. Soon after his conſecration he iſſued a ſentence of excommunication againſt William, the ſon of Robert count of Normandy, for having married within the forbidden degree of conſanguinity, and for having publicly burnt a letter ſent to him by the pope's legate, in which his marriage was declared null. On the death of the emperor Henry V., in the year 1125, Honorius ſent his legates into Germany, to aſſiſt at the election of a new king, in whoſe preſence Lotharius was anointed with the uſual ceremonies. In the following year the pope ſucceeded in perſuading Henry I. of England to admit a legate into his kingdom, whoſe uſurpations quickly provoked the ſpirited oppoſition of the clergy and laity. In 1127, upon the death of William, duke of Apulia, without leaving any iſſue, his uncle Roger, count of Sicily, paſſed over into Italy, and took poſſeſſion of his nephew's dominions as his next heir. But Honorius having heard of his proceedings, pretended that the late duke had, by his laſt will, left his dominions, and whatever elſe he was poſſeſſed of, to St. Peter, and inſtantly denounced a ſentence of excommunication againſt Roger. The queſtion was diſputed at the point of the ſword, but the army of the prince prevailed againſt that of the pope, and his holineſs was glad to grant him the inveſtiture to the duchy. Honorius died in 1130. Twelve of his letters are preſerved in the tenth volume of the Collect. Concil. Moreri. Bower.

Honorius III. pope, whoſe former name was Cencius Sabelli, was a deſcendant from an illuſtrious family, and a native of Rome, where he diſcharged ſeveral eccleſiaſtical employments with great reputation, and was held in high reſpect for his learning and probity. In 1216, having already filled the poſts of cardinal-deacon and cardinal-prieſt, he was unanimouſly elected pope. The firſt act of his pontificate was to ſend letters to all Chriſtian princes to acquaint them with his promotion, and to exhort them to ſend ſuccours, without delay, to the armies of the cruſaders in the Eaſt. Their ſucceſs was the object of his utmoſt ſolicitude; as was likewiſe the deſtruction of the Albigenſes in France, which he inſtigated the Catholics to attempt, by every method of perſuaſion adapted to produce an effect on credulous or ſuperſtitious minds. In 1217, Henry, emperor of Conſtantinople, dying without iſſue, the princes of the cruſade choſe Peter, count of Auxerre, his brother-in-law, for his ſucceſſor, who, as ſoon as he heard of his election, left France, together with his wife, and repaired to Rome, where they were crowned by Honorius. In the year 1219, Reginald, king of the Iſle of Man, at that time an independent kingdom, apprehenſive that it might be invaded and ſubdued by the kings of England, reſolved to engage the protection of the ſovereign pontiff by ſurrendering himſelf a vaſſal of the apoſtolic ſee. He accordingly made a donation of the whole iſland to Honorius as fief of the Roman church, and afterwards received the inveſtiture of it, upon binding himſelf and his heirs to pay a yearly ſtipulated ſum to the pope as an acknowledgment of vaſſalage. From this time the pope was eager in the attempt to diſpoſſeſs the infidels of the Holy Land, and was particularly deſirous of engaging in the cauſe the emperor Frederic II. But this prince excuſed himſelf from time to time by different pleas, which his holineſs was obliged to admit, till at length, in 1227, he died, after a pontificate of nearly eleven years. Honorius was a man of conſiderable learning for the age in which he lived, and was author of ſeveral works, of which there are ſtill extant, "Sermons;" the "Life of Pope Celeſtine III.;" "A Statement of all the Revenues of the Roman Church," and many others of leſs moment. Several of his letters are inſerted in the eleventh volume of the Collect. Concil. Moreri. Bower.

Honorius IV. pope, who, before his elevation to the popedom, was called James Sabelli, or Savelli, was deſcended from the ſame family with Honorius III., and was created cardinal deacon by pope Urban VI. in 1261. In 1285 he was elected pope, as ſucceſſor to Martin IV., and on this occaſion he aſſumed the name of Honorius IV. He was ſo much afflicted with the gout, that he was unable to ſolemnize the maſs in a proper manner, and only in a ſitting poſture; but he had a mind equal to all the difficulties of his ſituation. One of his earlieſt acts was to renew the anathemas which his predeceſſor had fulminated againſt Peter of Arragon, and by cauſing a cruſade to be preached againſt him in France, he raiſed a powerful army in that country, at the head of which king Philip entered Arragon, and gained a bloody victory over Peter. That prince died in a ſhort time after the battle, and by his will deviſed the kingdom of Arragon to his ſon Alphonſus, and that of Sicily to his ſon James. Honorius no ſooner heard of his death, and the diſtribution which he had made of his territories, than he iſſued his bull, commanding Alphonſus to releaſe, without delay, Charles, prince of Salerno, who had been taken priſoner by his father's fleet, and, at the ſame time, ordering James to quit the iſland of Sicily, and to deliver it up to Charles as the lawful heir. As thoſe princes paid no regard to his holineſs's bull, he excommunicated them, at three different times, in the year 1286, and laid the whole iſland of Sicily under an interdict. Honorius condemned and ſuppreſſed a new ſect founded by Gerhard Sagarelli, who ſtyled themſelves "The Order of the Apoſtles," or "The Apoſtolic Brethren." But the objects apparently neareſt the heart of Honorius were the extenſion of the papal power againſt all daring opponents, and the triumph of the cruſaders over the infidels. His firſt attention was devoted to the former; and in ſubſerviency to it, he had projected a deſign of uniting all the Chriſtian princes in a holy league againſt the two kings of Arragon and Sicily. While, however, he was wholly intent upon carrying it into execution, he was cut off by death, in 1287, when he had but juſt completed the ſecond year of his pontificate. He is ſaid to have been eminent for wiſdom, temperance, and a ſound diſcretion; and as a proof of his regard to the intereſts of learning, he made proviſion for the eſtabliſhment of a college at Paris, for the ſtudy of the Oriental languages, though he did not live to ſee the completion of ſuch an inſtitution. He confirmed the order of the hermits of St. Auguſtine, and that of the Carmelites, which had been only tolerated by the ſecond council of Lyons. Some of his letters are preſerved. Moreri. Bower.

HONOUR, among the *Ancients*, was worſhipped as a divinity, and had a temple erected to it, which had no entry but through the temple of Virtue; in order to teach men that true honour was only to be acquired by the practice of virtue. In conformity to this wiſe maxim, Virtue was ſometimes painted with wings, becauſe ſhe procured honour and victory to thoſe who ſtudied her. Plutarch alſo obſerves to the ſame purpoſe, that they ſacrificed to Honour with the head uncovered; it being uſual to uncover upon meeting with thoſe who by their virtues have acquired honour in the world; and we learn from Pliny, that Fab. Rutilianus was the firſt who made a law, that on the Ides of July the Roman knights ſhould march on horſeback from the temple of Honour to the capitol.

Honour is repreſented on many medals under the figure of a man holding a pike, and ſometimes an olive branch, in the right hand, and a cornucopia in the other.

Beſide its literal ſenſe, wherein it denotes a teſtimony or token of eſteem or ſubmiſſion, honour is particularly applied in our cuſtoms to the more noble kind of ſeignories, or lordſhips, whereof other inferior lordſhips or manors hold or depend. See SEIGNORY.

As a manor conſiſts of ſeveral tenements, ſervices, cuſtoms, &c. ſo an honour contains divers manors, knights-fees, &c. See MANOR.

It was alſo formerly called *beneficium*, or *royal fee*, being always held of the king in capite. Spelman.

Anciently honour ſignified the ſame as *baronia*.

HONOUR, *Counſellors of*, or *Honorary Counſellors*, are ſuch as have a right to enter or ſit in aſſemblies, courts, &c. to deliberate or give judgment in the ſame, though they do not regularly and properly belong to them.

The French call *chevaliers d'honneur*, *knights* or *gentlemen of honour*, the gentlemen uſhers of queens and princeſſes, who attend them, give them their hand, &c. See USHER.

HONOUR, *Court of*. See COURT *of Chivalry*.

HONOUR *Courts* are held within the honours, or ſeignories, above-mentioned.

HONOUR, *Maids of*, are young ladies in the queen's houſhold, whoſe office is to attend the queen when ſhe goes abroad, &c. In England they are ſix in number, and their ſalary 300*l. per annum* each.

HONOUR, *Pages of*, are officers both of the king's and queen's houſhold, under the maſter of the horſe. Of the former there are four, whoſe annual ſalary is 260*l.* each; and of the latter two, with a ſalary of 150*l.* each.

HONOUR *of a Peer*. See PEER.

HONOURS *of the Louvre*, among the *French*, are certain privileges annexed to divers dignities, or offices, particularly thoſe of duke, peer, chancellor, &c. as to enter the Louvre in a coach, to have the tabouret, or ſtool, in the queen's preſence, &c.

HONOURS *of the Church* are the rights belonging to the patron, &c. as a ſeat and ſepulchre in the chancel, to be firſt ſerved with the conſecrated bread and wine, &c.

HONOURS *of the City* are the public offices or employments thereof. He who has been conſtable, overſeer of the poor, and churchwarden of his pariſh; common-councilman, alderman, and laſtly mayor; has paſſed all the honours of the city.

HONOURS *of the Houſe* are certain ceremonies obſerved in receiving viſits, making entertainments, &c. performed either by the maſter himſelf, or by ſome perſon appointed for that purpoſe; as to go and receive the gueſts, to conduct them out again, to ſee they be well ſeated, and, in ſhort, to perform all the civilities and ceremonials of polite hoſpitality.

HONOURS are alſo applied to the principal part of the apparatus of great ceremonies; as coronations, conſecrations, chriſtenings, &c. Such are the oil, tapers, &c.

In obſequies they anciently repreſented the honours, that is, the ſhield, creſt, ſword, gantlets, ſpurs, banner, horſe, &c.

HONOURS, *Funeral*, are the ceremonies performed at the interment of great men; as hangings, hearſes, funeral harangues, &c.

HONOURS, *Military*. All armies ſalute crowned heads in the moſt reſpectful manner, colours and ſtandards dropping and officers ſaluting. Their guards pay no compliment except to princes of the blood, and that by courteſy in the abſence of crowned heads.

A field-marſhal is to be ſaluted with the colours and ſtandards of all the forces, except the horſe and foot-guards, and excepting when any of the royal family ſhall be preſent; but in caſe a field-marſhal is colonel of any regiment, or troop of horſe, or foot guards, he is to be ſaluted by the colours or ſtandards of the regiment or troop he commands.

Generals of cavalry and infantry, upon all occaſions, are to have the march beat to them, and to be ſaluted by all officers, thoſe bearing the colours excepted.

Lieutenant-generals of cavalry and infantry are, upon all occaſions, to be ſaluted by all officers. They are to have three ruffles given them with preſented arms.

Major-generals are to have two ruffles with preſented arms.

Brigadier-generals are to have one ruffle with preſented arms.

To colonels their own quarter-guards in camp turn out, and preſent their arms, once a day, after which they only turn out with ordered arms.

To majors their own guards turn out with ordered arms once a day; at other times they ſtand by their arms.

When a lieutenant-colonel or major commands a regiment, their own quarter-guards pay them the ſame compliment as is ordered for the colonel.

The maſter-general of the ordnance is to have the ſame reſpect and honours paid to him as the generals of horſe and foot.

Honours to be paid by the Cavalry.—A general of cavalry or infantry is to be received with ſwords drawn, kettle-drums beating, trumpets ſounding the march, and all the officers to ſalute, except the cornet bearing the ſtandard.

A lieutenant-general is to be received with ſwords drawn, trumpets ſounding twice the trumpet flouriſh, as in drawing ſwords, and all the officers to ſalute, except the cornet bearing the ſtandard; but the kettle-drums are not to beat.

A major-general is to be received with ſwords drawn, one trumpet of each ſquadron ſounding once the trumpet flouriſh, as in drawing ſwords; no officer to ſalute, nor kettle-drum to beat.

A brigadier-general is to be received with ſwords drawn ; no trumpet to ſound, nor any officer to ſalute, nor kettle-drum to beat.

All officers in the command of forts or garriſons, have a right to the complimentary honours from the troops under their command, which are due to the rank one degree higher than the one they actually poſſeſs.

Manner of paying honours.—The king's ſtandard, or colour in the guards, is never to be carried by any guard, except that which mounts on his majeſty's perſon.

The firſt ſtandard, guidon, or colour of regiments, which is the union colour, is not carried by any guard, but that on the king, queen, prince of Wales, or commander in chief, being of the royal family ; and, except in thoſe caſes, it ſhall always remain with the regiment.

When general officers, or perſons entitled to a ſalute, paſs in the rear of a guard, the officer is only to make his men ſtand ſhouldered, and not to face his guard to the right about, or beat his drum.

All ſentries are to pay a due reſpect to every officer who paſſes by their poſts, but are to keep their proper front while paying the compliment.

All governors, whoſe commiſſions in the army are under the degree of general officers, ſhall have, in their own garriſons, all the guards turn out with reſted arms, and beat one ruffle ; and though the main guard turns out with reſted arms every time he paſſes, yet they give him the compliment of the drum but once a day ; but all the other guards beat as often as he appears near them.

If they are general officers likewiſe, they are then to have the further compliments paid them, by the ſeveral beatings of the drum, as practiſed in the army.

Regulation of honours to be paid to admirals.—Admirals, with their flags on the maintop, are to have the ſame reſpect from the troops as generals of cavalry and infantry ; that is, upon all occaſions to have a march beat to them, and to be ſaluted by all the officers, thoſe bearing the colours excepted.

Vice-admirals are to have the ſame reſpect as lieutenant-generals of cavalry and infantry ; that is, upon all occaſions to be ſaluted by all the officers in the garriſon, the drummers beating three ruffles.

The rear-admirals are to have the ſame reſpect as major-generals, who have two ruffles, and not to be ſaluted by any officer.

Commodores with broad pendants have the ſame reſpect as brigadier-generals ; which is to have one ruffle.

Rank and precedence between ſea and land officers.—The admiral, or commander-in-chief of his majeſty's fleet, is to rank with a field-marſhal of the army.

The admirals with their flags on the main-top-maſt-head, are to have rank with generals.

Vice-admirals are to have rank as lieutenant-generals.

Rear-admirals are to have rank as major-generals.

Commodores with broad pendants are to have rank as brigadier generals.

Captains commanding poſt-ſhips, after three years from the date of their firſt commiſſion for a poſt-ſhip, are to have rank as colonels.

All other captains commanding poſt-ſhips, are to have rank as lieutenant-colonels.

Captains of his majeſty's ſhips or veſſels, not taking poſt, are to have rank as majors.

Lieutenants of his majeſty's ſhips are to have rank as captains.

The rank and precedence of ſea-officers, in the claſſes above-mentioned, are to take place according to the ſeniority of their reſpective commiſſions.

Poſt-captains commanding ſhips or veſſels that do not give poſt, rank only as majors during their commanding ſuch veſſels.

No land-officer is to command any of his majeſty's ſquadrons or ſhips, nor any ſea-officer to command at land ; nor ſhall either have a right to demand military honours due to their reſpective ranks, unleſs they are upon actual ſervice.

All guards and centinels are to pay the ſame compliments to the officers of the royal navy, as are directed to be paid to the officers of the army, according to their relative ranks.

The compliments above directed are to be paid by the troops, to officers in the ſervice of any power in alliance with his majeſty, according to their reſpective ranks.

Turning out of the line.—The line turns out without arms, whenever any part of the royal family, or the general commanding in chief, comes along the front of the camp.

When the line turns out, the private men are to be drawn up in a line with the colours and ſtandards ; the corporals on the right and left of their reſpective companies, the picquet forms behind the colours, accoutred, but without arms.

The officers and non-commiſſioned officers are to be drawn up with their reſpective companies. The field-officers in their proper poſts in battalion, two enſigns taking hold of the colours.

When the commander-in-chief comes along the line, the camp-colours on the flanks of the parade are to be ſtruck, and planted oppoſite to the bells of arms, and the drums piled up behind the colours ; the halberts are to be planted between, and on each ſide of the bells of arms, the hatchets turned from the colours. James.

Honour *Point*, in *Heraldry*, is that next above the centre of the eſcutcheon, dividing the upper part into two equal portions. See Point and Escutcheon.

Honour, *Abatements of.* See Abatement.

Honour, *Additions of.* (See Additions.) Theſe additions are ſaid to be nine in number ; *viz.* a border, a quarter, a canton, a gyron, a pile, a flaſque, a flanche, a voider, and an eſcutcheon of pretence. (See each term reſpectively.) When additions of honour have been granted, faſhion alone ſeems to have guided the choice of the particular ordinary. In the reign of king Henry VIII., the pile had the preference ; and was granted by that king, as an augmentation of honour, to the lady Jane Seymour, and alſo to the lady Catharine Parr. But of late years, when the ſovereign grants an augmentation to the arms of a ſubject, it hath been uſual to place it either on a quarter, or on a canton. The eſtimation in which theſe ordinaries were anciently held, on account of their being occaſionally granted as additions of honour, hath been conſiderably diminiſhed, ſince it has been cuſtomary for any perſon of property, wanting and applying at the college for a coat of arms, not only to obtain a grant of arms, to him and his heirs, on paying the fees, but to have the figures of any of the additions of honour, in caſe he requeſts it, placed in the coat, although neither he nor any of his anceſtors ever had any particular merit to intitle him to marks of the royal favour.

HONOURABLE Amends, *Amende honorable.* See Amende.

Honourable, or *Honourable ordinaries*, in *Heraldry*. See Ordinary.

HONOURARY, or Honorary, is underſtood of a perſon who bears or poſſeſſes ſome quality or title, only for the name's ſake, without doing any of the functions thereto belonging, or receiving any of the advantages thereof. See *Counſellors of* Honour.

In the College of Phyſicians, London, are honourary fellows. The Royal Academy of Sciences at Paris formerly conſiſted of four claſſes of members, viz. honourary, penſionary, aſſociates, and adjuncts. See Academy.

Honourary *Feuds.* See Fee and Descent.

Honourary *Games.* See Games.

Honourary *Services* are thoſe incident to the tenure of grand ſerjeantry, and commonly annexed to honours.

Honourary *Tutor* is a perſon of quality appointed to have an eye over the adminiſtration of the affairs of a minor, while the onerary tutors have the real effective management thereof.

Honourary, *Honorarium*, is alſo uſed ſubſtantively for a lawyer's fee, or a ſalary given to public profeſſors of any art or ſcience.

HONRUBIA, in *Geography*, a town of Spain, in New Caſtile; 10 miles N.W. of Alarcon.

HONSDORF, a town of Pruſſia, in the palatinate of Culm; 27 miles N.E. of Culm.

HONTAN, La, *Baron*, in *Biography*, was born in Gaſcogny, and ſerved in Canada, firſt as a ſoldier, then as an officer. From Canada, he was ſent to Newfoundland as king's lieutenant, where he quarrelled with the governor, and was caſhiered. He retired, firſt to Portugal, then to Denmark. As an author he is known by "Voyages dans l'Amerique Septentrionale," two volumes 12mo. in which we have an account of the different tribes inhabiting North America, their government, laws, cuſtoms, religion, &c.

HONTFONGENETHEF, a thief taken hond-habend, *i. e.* having the thing ſtolen in hand.

HONTHORST, Gerard, in *Biography*, was born at Utrecht in 1592, and was placed as a diſciple with Abraham Bloemart: but when he quitted that maſter, he travelled to Rome, and proceeded ſo happily in his ſtudies as to be accounted one of the beſt artiſts of his time. He continued at Rome for ſeveral years, being employed there by perſons of the firſt rank, and particularly by prince Juſtiniani, for whom he performed many conſiderable works.

His particular excellence was ſhewn in his night-pieces, repreſenting figures by candle-light, which uſually were as large as life. Even Rubens profeſſed himſelf an admirer of his paintings in that ſtyle; and Sandrart highly commends a picture of the Decollation of St. John by torch-light, which he ſaw at Rome, in the church of Madonna della Scala. He alſo mentions another in the Juſtiniani gallery, of which the ſubject is, Chriſt brought bound before Pilate, in a white robe; and in that compoſition, the light proceeding from the flambeau and torches produced ſo uncommon a luſtre, and ſo bold an effect, that no preceding artiſt had performed any thing in that ſtyle that could be compared with it. Sandrart alſo obſerves, that Honthorſt was as much diſtinguiſhed, while he reſided at Rome, for his night-pieces in large, as Elſheimer was for his manner of deſigning the ſame ſubjects in ſmall.

Soon after his returning to his own country he viſited London, and obtained the favour of king Charles I. by ſeveral grand performances and portraits; eſpecially by one allegorical picture, in which he repreſented the portraits of the king and queen, in the characters of two deities, and the portrait of the duke of Buckingham in the character of Mercury, introducing the liberal arts to that monarch and his conſort. For that compoſition, which was well drawn and extremely well coloured, the king preſented him with three thouſand florins, a ſervice of plate for twelve perſons, and a beautiful horſe; and he had afterwards the honour to inſtruct the queen of Bohemia, and the princeſſes her children, in drawing.

His pencil is free and firm, and his colouring hath a great deal of force, although it often is not pleaſing, by a predominancy of the yellow and brown tints; yet undoubtedly Honthorſt would have been an excellent painter, if he had known how to give more grace, and more correctneſs to his figures.

At his return from London to Holland, he adorned the pleaſure houſes of the prince of Orange with many poetical ſubjects, which he executed in freſco as well as in oil; but he principally was employed in painting portraits, which are deſcribed as having good expreſſion, and extraordinary life and force, by their broad maſſes of light being contraſted by ſtrong ſhadows. He died in 1660, aged 68.

Honthorst, William, brother to the preceding, was born at Utrecht in 1604, and learned the art of painting from Abraham Bloemart. The portraits which he painted were very much eſteemed, and in reality thoſe were his moſt commendable performances; for the hiſtorical ſubjects of his hand, which generally were painted in a large ſize, are in no degree equal to thoſe of Gerard, either in reſpect of the compoſition, the handling, or the colour, although they are frequently ſold for the works of that maſter. He died in 1683, aged 79.

HONTHY, or Honddy, in *Geography*, a river of South Wales, which runs into the Uſk, at Brecknock.

HONTORIA *de Valdecarados*, a town of Spain, in Old Caſtile; 22 miles W. of Oſma.

HOOBARREE, a town of Africa, in the country of Sahara; 320 miles S.W. of Moorzouk. N. lat. 27° 12'. E. long. 9° 25'.

HOOD. See Chaperoon and Cucullus.

Hood, in *Falconry*, is a piece of leather, wherewith the head of a hawk, falcon, or the like, is covered.

After ſealing or ſewing up the eyelids of a young hawk, ſhe is to be fitted with a large eaſy hood, which is to be taken off and put on very often, watching her two nights, and handling her frequently and gently about the head. When you perceive ſhe has no averſion to the hood, unſeal her in the evening by candle-light, continuing to handle, hood, and unhood her, as before, till at laſt ſhe takes no offence, but will patiently endure handling.

After unſealing, anoint with the finger and ſpittle the place where the ſealing thread is drawn through; then hood her, and hold her on your fiſt.

As ſoon as ſhe is well reclaimed, let her ſit upon a perch; but every night keep her on the fiſt three or four hours, ſtroaking, hooding, and unhooding, &c. And thus you may do in the day time, when ſhe hath learnt to feed eagerly and without fear.

Hood, on *Ship-board*, is a copper frame, made to go on the top of the chimney, and to ſhift as the wind does, that the ſmoke may always fly to leeward.

Hood is alſo a ſort of low wooden porch, placed over the ſtair-caſe or ladder, which leads into the ſteerage or apartments, where the crew generally reſide in a merchant-ſhip. The uſe of the hood is to admit air and light, and at the ſame time to prevent the rain from falling into the ſteerage. The wooden porch over the entrance or ſtair-caſe of the maſter's cabin is called *companion*.

Hood's *Bay*, in *Geography*, a harbour on the W. coaſt of Admiralty iſland, in Chatham ſtrait. N. lat. 57° 26'. E. long. 225° 36'.

Hood's *Iſland*, an iſland in the Southern Pacific ocean, the moſt northerly of the five Marqueſas iſlands, diſcovered by captain Cook in April 1774, and ſo called after the name of the young gentleman by whom it was firſt ſeen; about 48 miles in circumference. It is called by the natives Tebooa. S. lat. 9° 26′. W. long. 138° 52′. See Marquesas.

Hoods, in *Rural Economy*, the names of the ſheaves which head or cover the ſhocks or ſtouks of corn.

Hood *Sheaves*, another term employed to ſignify the ſame.

HOODED *Milfoil*, in *Botany*. See Utricularia.

Hooded *Willow-herb*. See Scutellaria.

HOODERS, a term given to the hood ſheaves of corn hattocks in many diſtricts.

HOOF, Ungula, the horny part which covers the feet of divers animals, as horſes, bullocks, &c.

The hoof ſerves much the ſame purpoſes as the nails of ſome animals and the claws of others.

The hoof of a horſe ſurrounds the ſole and the coffin-bone. To be good, it ſhould be of a dark colour, ſomewhat ſhining, high, ſmooth, of a round ſhape, but a little larger below than above; ſhort, that the horſe may tread more on the toe than on the heel; and ſomewhat hollow within, having a narrow fruſh and broad heels.

The hoof ſhould not have circles, which are a ſign of its being brittle, and that the horſe, being often ſhod, has had his feet ſpoiled by the many pieces broke out of it. A white hoof alſo is commonly brittle.

To judge whether the hoof be good and ſtanch, lift up the foot, and conſider if it have a ſhoe forged purpoſely for it, and be very much pierced, and the holes made in the unuſual parts, as wanting horn enough to take hold by in thoſe places where the nails are commonly driven. Sometimes they are forced to pierce the ſhoes nigh the heels, becauſe the fore-part is bad; it being unuſual to drive the nails near the heels, except the toe be ſo much ſplit and broke as not to bear nails.

If the hoof be not round, but broad, and ſpreading out at the ſides and quarters, the horſe commonly has narrow heels, and, in time, will be flat-footed; which ſort of foot is weak, and will not carry a ſhoe, nor travel far, but ſurbate; add, that treading more on his heels than his toes, will cauſe him to go low on his paſterns.

If the hoof be long, it will make him tread altogether on his heels. If crooked, *viz.* broad without and narrow within, ſo that the horſe is ſplay-footed, it will cauſe him to tread too much inward, and cut or interfere. If the fruſh be broad, the heels will be weak and ſoft. If the heel be narrow and tender, the horſe will in time grow hoof-bound.

This ſort of horny material, when ground or broken down in proper mills, has been found an extremely laſting manure, and capable of affording large crops. See Manure.

Hoof, *Bony*, is a round bony ſwelling, growing on the top of a horſe's hoof, which is always cauſed by ſome blow or bruiſe. This is firſt to be ripened and brought to ſuppuration by digeſting it with rotten litter, or hay boiled in ſtale urine, or with a plaſter of ſtale wine-lees and wheat-flour boiled together. When it is come to a head, let it be lanced with a thin hot iron, and put a tent into it made of turpentine, deer's fat, and wax, boiled together in equal quantities, and lay a plaſter of the ſame over the tent.

Hoof, *Brittle*, the name of an infirmity to which horſes are ſubject. It comes ſometimes naturally, and ſometimes artificially. When it comes naturally, it is generally hereditary, the ſire or dam having had the ſame complaint. When it comes on accidentally, it is ſometimes owing to a diſtemper falling down into the feet; ſometimes to the creature's being much foundered.

The hoof, in this diſtemper, is ſo friable and rotten, as it were, that it cracks and flakes off on every ſlight occaſion. The cure is to be attempted in this manner: take wax, turpentine, ſuet, and hog's lard, of each four ounces; ſallad oil, a quarter of a pint by meaſure; and of dog's greaſe, half a pound; let the whole be melted together, and ſtrained through a piece of canvas into a gallypot. The hoof is to be thoroughly anointed with this every day, morning and evening, eſpecially at the root; and if there are any large cracks, they muſt be filled up at every dreſſing with a mixture of equal parts of cow-dung and hog's lard.

The other infirmities to which hoofs are liable, are, the caſting of the hoof, hoof-bound, hoof-hard, hoof-hurt, looſe hoof, falſe quarters, &c.

Hoof, *Caſting of the.* A horſe is ſaid to *caſt his hoof* when the whole coffin of the hoof becomes looſened, and falls off from the bone. This may be remedied by care, and proper application; a new hoof being procurable, if the coffin bone, &c. be not hurt.

Horſes ſometimes caſt their hoofs, by reaſon of ſome prick, ſtub, foundering, ſurbating, or other accident, that cauſes an impoſtumation in the foot; ſo that the hoof, and ſometimes the coffin bone, being ſpongy and eaſily broken, fall off in large pieces. The laſt, when it happens, is a deſperate caſe.

Hoof-*bound*, is a ſhrinking in of a horſe's hoof on the top and the heel, which makes the ſkin ſtare above the hoof, and grow over the ſame.

It befals a horſe divers ways, either by keeping him too dry in the ſtable, by ſtraight ſhoeing, or by ſome unnatural heat after foundering.

Hoof-*hurt*. In labouring beaſts, eſpecially oxen, if the hoof be hurt with a coulter or ſhare, it may be cured by a ſalve of pitch and greaſe mixed with powder of brimſtone, diſſolved together, and with a hot iron melted in the cleft of the hoof.

Hoof-*looſened*, is a diſſolution or dividing of the horn or coffin of a horſe's hoof from the fleſh, at the ſetting on of the coronet.

If the parting be round about the coronet, it comes by means of foundering; if in part, then by a prick of ſome channel nail, quitter-bone, retreat, gravelling, cloying, or the like. The ſigns of being looſened by foundering, is its breaking firſt in the fore part of the coronet, right againſt the toes; becauſe the humour always deſcends towards the toe. If it proceeds from pricking, gravelling, or the like, the hoof will looſen round about equally even at firſt. If occaſioned by a quitter-bone, or hurt on the coronet, it will break right above the grieved part, and rarely be ſeen to go any farther.

Hoof-*ſwelled*, is an infirmity that ſometimes befals young horſes, when they are over-rid or wrought hard, which makes them ſwell in that part, becauſe of the blood falling down and ſettling there; which, if not ſpeedily removed, will uſually beget a wet ſpavin.

For the cure, take the ſtrongeſt aquafortis, and firſt file or draw away the old hoof to a conſiderable degree with a file or drawing iron; then touch what is left of the hoof for three or four dreſſings with the aquafortis; anoint the foot with an ointment made of one pound of hog's greaſe, three quarters of a pound of patch greaſe, five ounces of Venice turpentine, three ounces of new wax, and three ounces of ſallad oil, melted together over the fire: and thus a new hoof will be made to grow on the foot.

Hoofs, in *Comparative Anatomy*, are the hard and inſenſible envelopes of the laſt phalanges of the toes in certain quadrupeds. They differ from nails in their form, being blunt, and broader at their termination than any other part, and being continued under the baſe of the phalanx and for ſome way behind. A hoof, when removed from the foot, has commonly the appearance of an irregular hollow pyramid; the anterior and lateral portions of the hoof are analogous in compoſition and mode of growth to the nails or claws. They are made of hard denſe compact horn, grow chiefly from the upper edge, which correſponds to the root of the nail, and are moulded by fine thin laminæ, which run downwards in the direction of the feet. Theſe laminæ are extremely numerous, and are very remarkable in the feet of the large quadrupeds, as the elephant, rhinoceros, &c.; are plain and diſtinct in the horſe, but are leſs marked in the ruminant or cloven-footed quadrupeds. The ſtructure of the laminæ is membranous, or rather membrano-ligamentous; they are ſupplied with numerous blood-veſſels and nerves, but appear to be rather leſs vaſcular and ſenſible, than the ſoft parts within the ſole or inferior portion of the hoof. The ſenſible laminæ are inſerted between correſponding horny laminæ, ſituated upon the internal ſurface of the anterior and lateral portions of the hoof, by which the ſurface of connection between the hoof and the foot is vaſtly extended: indeed, the union is ſo ſtrong between theſe parts, that the whole weight of the large quadrupeds may be entirely ſuſtained by it, as is proved by the operation of removing the horny ſole of the foot in horſes, and likewiſe by the ſole deſcending when the adheſion of the laminæ is deſtroyed. See *Veterinary* ANATOMY and FOOT.

The inferior and poſterior portion of the hoof is compoſed of a horny ſubſtance, but of a texture leſs firm and tough than the anterior and lateral parts. The ſurface by which it is produced is not in general laminated, but covered with villous proceſſes. Theſe are extremely vaſcular and ſenſible, and are analogous in ſituation and office to the villi of the cutis covering the extremities of the fingers and toes of the human ſubject, and of the digitated quadrupeds. It appears to be chiefly on the ſenſible ſole of the foot in hoofed quadrupeds that impreſſions of touch are made, and although the extremities of theſe animals are incapable of ſurrounding ſmall objects, and therefore cannot convey ſenſations of the figure or extent of foreign bodies, they are moſt admirably conſtructed to give the animal notice of the mere preſence or the degree of reſiſtance of external objects. The ſurface within the hoof is ſo acutely ſenſible, that ſlight impreſſions are felt by it, while, at the ſame time, by the interpoſition of a ſtrong elaſtic ſubſtance, it is defended from the pain or injury that would enſue from more conſiderable impulſe. Another uſe of the hoof is to protect the feet from the preſſure and friction ſuſtained in the exerciſe of walking or in ſtanding. This is particularly neceſſary in the large quadrupeds, whoſe weight and almoſt conſtant erect poſition would otherwiſe bruiſe and wear their feet: the hoofs, therefore, may be conſidered as a ſort of natural ſhoes, having the additional property of a continual growth to repair their waſte. The proceſs of reparation, however, is only in a proportion ſuited to the natural habits, ſituation, and mode of life of the animal, and hence the neceſſity of ſhoeing ſome quadrupeds, and of cutting away exuberances from the hoofs in others. See articles ANATOMY *of the Horſe*, and SHOEING.

In ſeveral quadrupeds there are hoofs formed which never touch the ground; theſe grow upon the extremities of the imperfect toes, or thoſe which do not enter into the compoſition of the foot of the animal, and furniſh a ſtriking example of the uniformity of nature, even where it cannot anſwer any purpoſe.

HOOGE, PETER DE, in *Biography*, was born about the year 1643, but neither his native city, nor the maſter of this painter, are aſcertained by any of the writers on this ſubject; but by his manner of painting, Deſcamps accounts him to have been one of the beſt diſciples of Berchem. However, he ſeemed to admire and imitate the manner of Mieris, Metzu, and Slingeland, although, in the finiſhing of his pictures he did not arrive at the perfection of thoſe great artiſts.

The heads and hands of his figures have ſometimes a degree of force ſcarcely unworthy of being compared to Vandyke; but his touch is more broad and free than either Metzu or Mieris, and he falls far ſhort of their exquiſite neatneſs. His pencil is light and firm; his deſign correct and in a good taſte, as if he had been inſtructed in ſome celebrated ſchool. His uſual ſubjects are converſations, in which the draperies of his figures are taken from the modes of the times; and as to his colouring, it is extremely good, natural, and ſtrong.

HOOGEVEEN, HENRY, a celebrated Dutch philologiſt, was born of parents in humble life at Leyden in 1712. He was ſent to ſchool at 10 years of age, when the ſeverity of the maſter ſeemed to extinguiſh all his capacity for learning; but under a ſecond tutor his powers expanded ſo rapidly, that at the age of 15 he was able to relieve his father from part of the expence of his education, by commencing a teacher of the lower claſſes. He after this followed the buſineſs of a ſchoolmaſter at different places, and at Delft he ended his days in 1794. The works of this grammarian are, 1. An edition of "Vigerus de Idiotiſmis Linguæ Græcæ," which has been frequently reprinted, the addition by Hoogeveen being reckoned very valuable: 2. Poems, Orations, and other occaſional Pieces: 3. "Doctrina Particularum Linguæ Græcæ," in two volumes 4to. 1769. This procured the author a very high reputation among all the votaries of Greek learning throughout Europe. An abridgment of it has been made by Schütz. Since the death of Hoogeveen a poſthumous work has been given to the world, entitled, "Dictionarium Analogicum Græcum." It was printed at the univerſity preſs of Cambridge. Gen. Biog.

HOOGLIDE, in *Geography*, a town of France, in the department of the Lys, and chief place of a canton, in the diſtrict of Ypres. The place contains 3529, and the canton 13,258 inhabitants, on a territory of 105 kiliometres, in five communes.

HOOGLY, a circar or province of Bengal, about 80 miles in length from N. to S. and 48 in its medial breadth, much interſected, and formed into numerous iſlands by branches of the Hoogly and ſeveral other rivers.—Alſo, a ſmall but ancient city of Bengal, on the ſame river with Calcutta, but on the oppoſite ſide, and about 26 miles above it. In the time of the Mahometan government, it was the "bunder" or port of the weſtern arm of the Ganges, where the cuſtoms or duties on merchandiſe were collected. The French, Dutch, Danes, and Portugueſe, have each of them had a town and factory on this part of the river, between Hoogly and Calcutta; and all within the extent of ten miles along the river. In 1757 this town was taken by the Britiſh, and vaſt quantities of ſalt and proviſions belonging to the nabob of Bengal burned and deſtroyed. N. lat. 25 54′. E. long. 88° 29′.—Alſo, a river of Bengal, formed by the junction of the Coſſimbuzar and Jellinghy, the two weſternmoſt branches of the Ganges, which runs into Bengal bay. This is the port of Calcutta, and the only branch of the Ganges that is commonly navigated by ſhips. The Coſſimbuzar river is almoſt dry from October to May; and the Jellinghy river, (although a ſtream runs in it the whole year,) is in ſome years unnavigable during two or three of the drieſt months; ſo that the only ſubordinate branch of the Ganges, that is at all times navigable, is the Chundnah river, which ſeparates at Moddapour, and terminates in the Hooringotta. The Hoogly river, which is the moſt weſterly branch of the Ganges, has a much deeper outlet into the ſea than the principal branch. This may probably be owing to its precipitating a leſs quantity of mud than the other; the quantity of the Ganges water diſcharged here being leſs than in the other, in the proportion of one to ſix. From the difficulties that occur in navigating the entrance of the Hoogly river, many are led to ſuppoſe that the channels are ſhallow. The difficulties, however, ariſe from bringing the ſhips *acroſs* ſome of the ſand-banks, which project ſo far into the ſea, that the channels between them cannot eaſily be traced from without. Rennell's Mem.

HOOGSTRATEM, a town of France, in the department of the Two Nethes, and chief place of a canton, in the diſtrict of Turnhout; 15 miles N. of Herenthals. The place contains 1360, and the canton 7227 inhabitants, on a territory of 202½ kiliometres, in eight communes.

HOOK, in *Angling*, &c. See FISHING-*hook*.

HOOKS, in *Building*, &c. are of various ſorts; ſome of iron and others of braſs, *viz.* 1. Armour-hooks, which are generally of braſs, and are to lay up arms upon, as guns, muſkets, half-pikes, pikes, javelins, &c. 2. Caſement-hooks. 3. Chimney-hooks, which are made both of braſs and iron, and of different faſhions; their uſe is to ſet the tongs and fire-ſhovel againſt. 4. Curtain-hooks. 5. Hooks for doors, gates, &c. 6. Double line-hooks, large and ſmall. 7. Single line-hooks, large and ſmall. 8. Tenter-hooks, of various ſorts. See TENTER.

HOOKS *of a Ship*, are all thoſe forked timbers which are placed directly upon the keel, as well in her run as in her rake. See BREAST-*hooks*.

HOOK, *Boat*, in a *Ship*. See BOAT.

HOOKS, *Can*, thoſe which being made faſt to the end of a rope, with a nooſe (like that which brewers uſe to ſling or carry their barrels on), are made uſe of for ſlings. See CAN-*hook*.

HOOKS, *Foot*, in a *Ship*, the ſame with futtocks.

HOOK-*land*, or *Ope-land*, land ploughed and ſowed every year. Dict. Ruſt.

HOOKS, *Loof*, in a *Ship*, a tackle with two hooks; one to hitch into a cringle of the main or fore-ſail, in the bolt-rope at the leech of the ſail by the clew; and the other is to hitch into a ſtrap, which is ſpliced to the cheſs-tree.

Their uſe is to pull down the ſail, and ſuccour the tackles in a large ſail and ſtiff gale, that all ſtreſs may not bear upon the tack. It is alſo uſed when the tack is to be ſeized more ſecure, and to take off or put on a bonnet or drabler.

HOOK-*pins*, in *Architecture*, are taper iron pins, only with a hook-head, to pin the frame of a roof or floor together.

HOOKS, *Sheer*, in a *Ship*, hooks like ſickles fixed in the ends of the yard-arms, that if a ſhip under ſail come to board her, thoſe ſheers may cut her ſhrouds, and ſo ſpoil her tackling. But as thoſe ſheer-hooks are ſubject to break their own yards, and cut the ropes that come from the top-ſails, they are now very ſeldom uſed.

HOOKS, *Trill*. See TRILL-*hooks*.

HOOKS, *Draught*. See DRAUGHT-*hooks*.

HOOKAH, a pipe for ſmoaking, uſed in India and among the nations of the Eaſt; conſiſting of a glaſs-veſſel of a globular form, nearly filled with water, from which iſſue two tubes, one perpendicular, on which the tobacco is placed, and the other oblique from the ſide of the veſſel, to which the mouth is applied. The advantage of this conſtruction is, that the ſmoke, in paſſing through the water, is cooled and rendered more agreeable. In company this inſtrument is circulated from one to the other, but among perſons of ſuperior rank and refinement, each perſon has a hookah appropriate to himſelf, which is often made of ſilver and ſet with precious ſtones; the tube, which is applied to the mouth, is long and pliant, and on this account denominated the ſnake; and the veſſel through which the ſmoke paſſes is filled with roſe water, and thus receives ſome of the fragrant quality of that fluid. The preparation of the hookah is the peculiar province of one of the domeſtics, and the uſe of it is reckoned among the luxuries of the Eaſt.

HOOKE, NATHANIEL, in *Biography*, author of a Roman hiſtory, was a Roman Catholic by profeſſion, and much attached to the myſtical doctrines taught by Fenelon. Few biographical facts are known relating to this perſon. He is ſaid to have enjoyed the confidence and patronage of perſons diſtinguiſhed as well by their virtue as their rank. He appears to have loſt the property which he poſſeſſed in the fatal South-ſea bubble. Not long after, he was recommended to Sarah, ducheſs of Marlborough, as a proper perſon to aſſiſt in compiling the memoirs of her own life, for which literary ſervice ſhe preſented him with the magnificent ſum of five thouſand pounds. The book, entitled "An Account of the Conduct of the Ducheſs of Marlborough, from her firſt coming to Court to the Year 1710," was publiſhed in 1742, but ſhe quarrelled with Hooke ſoon after, on account, as ſhe affirmed, of his wiſh to convert her to popery. The great work of Mr. Hooke was "The Roman Hiſtory," from its earlieſt periods to the ſettlement of the empire under Octavius. It was publiſhed at firſt in 4 vols. 4to., but it has ſince been publiſhed in 8vo., and a new edition of it was given to the world a few weeks ſince in 11 vols. 8vo. Another work of this hiſtorian upon Roman affairs, was "Obſervations on Four Pieces upon the Roman Senate." He alſo publiſhed a tranſlation of "Ramſey's Travels of Cyrus." Gen. Biog.

HOOKE, ROBERT, an eminent mathematician, who flouriſhed in the 17th century, was born at Freſhwater, in the Iſle of Wight, where his father was miniſter, in the year 1635. The brightneſs of his parts led his parents to intend him for the church, but the weak ſtate of health of the child, and his being ſubject to almoſt perpetual head-ache, made them deſpair of rendering their ſon a ſcholar. The youth being, in a good meaſure, left to himſelf, and to the bent of his own genius, turned his attention to mechanics, and employed himſelf in making toys, ſome of which diſcovered much ingenuity. At length he made a clock in wood, that would perform all the motions, and mark out in a rough manner the hours of the day. He diſplayed a taſte likewiſe for drawing, and ſoon after the death of his father he was placed under the celebrated painter ſir Peter Lely. To the profeſſion of painting he could not apply himſelf on account of his health. He therefore was placed firſt in Weſtminſter ſchool, and afterwards was ſent to Oxford. In 1655 he had made ſuch progreſs in the ſciences, that he was elected a member of a philoſophical ſociety at Oxford, and became an aſſiſtant to the honourable Mr. Boyle, in his experiments and purſuits, to whom he was particularly uſeful in the conſtruction of the air-pump. He was, likewiſe, an adept in aſtronomy, and conſtructed ſome inſtruments well adapted to the making of obſervations. In 1662, Mr. Hooke was appointed curator of experiments for the Royal Society, which met at that period at Greſham college; he engaged to furniſh the members, at every time of their meeting, with two or three new experiments of his own, and to purſue ſuch others as they ſhould recommend to him. This buſineſs led him to make ſeveral important diſcoveries relating to the nature and properties of the air. In 1663, when the Royal Society was eſtabliſhed by charter, Mr. Hooke was nominated one of the members who were appointed on the firſt council. The repoſitory of the ſociety was committed to his care, and a gallery in the Greſham college was appointed for its reception. In the following year he was made profeſſor of mechanics to the Royal Society, by ſir John Cutler, with a ſalary of 50*l.* per annum ſettled upon him for life, and in the ſame year he read aſtronomical lectures at Greſham college. He publiſhed, in 1665, his "Micrographia, or ſome phyſiological Deſcriptions of minute Bodies, made by magnifying Glaſſes, &c." This work he dedicated to the king, who had been inſtrumental in founding the ſociety, and who had ſhewn himſelf friendly to experimental purſuits, for all which he is applauded by Mr. Hooke in terms approaching to fulſome flattery. The meetings of the ſociety being now diſcontinued on account of the ravages of the plague, Mr. Hooke, accompanied by other perſons, among whom was doctor, afterwards biſhop, Wilkins, and ſir W. Petty, retired to the ſeat of the earl of Berkeley, where they diligently purſued their experiments, an account of which they afterwards communicated to the Royal Society when its meetings were reſumed. After the fire of London in 1666, Mr. Hooke offered to the court of aldermen a plan for re-building the city, which, though not followed, led to his appointment to the office of one of the city ſurveyors, in which he acquired conſiderable property. We ſhall not enter into the diſputes and controverſies in which Mr. Hooke engaged, in ſome of which he ſhewed a temper unworthy of a true philoſopher. In 1673 he propoſed a "Theory of the Variation of the Compaſs," and in the following year he publiſhed "An Attempt to prove the Motion of the Earth from Obſervations;" his next publications were "A Deſcription of Helioſcopes, &c." and "Deſcriptions of ſome mechanical Improvements of Lamps and Water-poiſes, together with phyſical and mechanical Diſcoveries." Upon the death of Mr. Oldenburgh, Mr. Hooke was appointed to ſupply his place in the office of ſecretary to the Royal Society; this was only a temporary appointment, as the office was in a few months given to Mr. Nehemiah Grew. Mr. Hooke was not contented with the reputation which he had acquired, though conſiderable, but on the publication of ſir Iſaac Newton's Principia, he laid claim to that great man's diſcovery concerning the force and action of gravity, his pretenſions to which were moſt ſatisfactorily refuted. In 1691 he was employed in forming the plan of the hoſpital near Hoxton, which was founded by alderman Aſke, who appointed archbiſhop Tillotſon one of his executors, and in the ſame year Mr. Hooke was by that prelate created M. D. In 1696 the Royal Society would gladly have employed him in a repetition of his experiments at their expence, but his ill ſtate of health prevented him from engaging in the buſineſs. He died at his apartments in Greſham college in 1702, in the ſixty-eighth year of his age. Several of his papers may be ſeen in the Tranſactions of the Royal Society; and after his death, in 1705, his poſthumous works were publiſhed. He was a man of great mechanical genius, and the ſciences are indebted to him for ſeveral improvements, and for inſtruments adapted to the diſcovery of other new and uſeful facts. He was well acquainted with the ancient languages, and all the branches of the mathematics. He always maintained a great veneration for the Deity, and ſeldom received any ſignal benefit in life, or made any valuable diſcovery in nature, or invented any uſeful contrivance, or found out any conſiderable problem, without expreſſing his gratitude to Divine Providence. Biog. Brit.

HOOKER, JOHN, a learned antiquary, was born at Exeter in 1524, and educated at Oxford, after which he travelled into Germany. Upon his return he was elected a repreſentative in parliament for his native city in 1572. He wrote a deſcription of Exeter, and was author of ſome part of Holingſhed's Chronicle, beſides other pieces. He died in 1601.

HOOKER, RICHARD, nephew of the above, was born at Heavitree, near Exeter, in 1553; he was educated at the grammar ſchool of Exeter, from which place he was ſent to Corpus Chriſti college, Oxford, of which he was choſen fellow in 1577. He was indebted to the patronage of biſhop Jewel for a learned education, and calling once on the prelate in his way to Oxford, the biſhop gave him much good advice and his benediction, but forgot to give him any money; quickly, however, recollecting himſelf, he ſent his ſervant to call him back, and on his return he ſaid, "Richard, I have ſent for you to lend you a horſe, which hath carried me many a mile, and I thank God with much eaſe." He then gave him a walking ſtaff, with which he had himſelf travelled through many parts of Germany, and added, "Richard, I do not give but lend you my horſe; be ſure you be honeſt and bring my horſe back to me at your return from Oxford. I do now give you ten groats to bear your charges to Exeter (whither he was going to ſee his mother), and here are ten groats more, which I charge you to deliver to your mother, and tell her I ſend a biſhop's benediction with it, and beg the continuance of her prayers for me. And if you bring my horſe back to me, I will give you ten groats more to carry you on foot to the college, and ſo God bleſs you Richard." Shortly after this, young Hooker loſt his patron by the death of the good biſhop; he had, however, thoſe talents and that excellent diſpoſition which ſoon procured him other friends in Dr. Cole, then preſident in his college, and Dr. Edwin Sandys, biſhop of London, by whoſe intereſt he was elected ſcholar of his college in 1573. At the ſame moment almoſt, the biſhop placed his own ſon under the care of Mr. Hooker for college inſtruction, though he had not at that time attained to his twentieth year, but ſaid Dr. Sandys, "I will have for my ſon a tutor that may teach him learning by inſtruction, and virtue by example, and my greateſt care ſhall be the laſt." Mr. Hooker, while at college, was greatly diſtinguiſhed among his contemporaries, for the piety, regularity, and exemplarineſs of his life. In 1577 he took his degree of M. A., and was in the ſame year elected fellow of his college. In 1579 he was appointed deputy-profeſſor of the Hebrew tongue in the univerſity, and for a cauſe, not known, but which was probably of a very trifling nature, he and ſome others were expelled the college by the vice-preſident, to which they were again reſtored in the courſe of two or three weeks. Mr. Hooker took orders in 1581, and very ſhortly after was appointed to preach at St. Paul's Croſs in London. This appointment, which was eſteemed an high honour, produced a train of circumſtances, by which the young divine was, through the great ſimplicity of his character, entrapped into an unfortunate marriage with a woman who brought him neither beauty nor portion, and who has been repreſented as "a ſilly clowniſh woman, and withal a mere Xantippe." In conſequence of this ſtep Mr. Hooker loſt his fellowſhip, and was obliged to quit the univerſity before he had obtained any preferment. In 1584 he was preſented to the rectory of Drayton-Beauchamp, in Buckinghamſhire, where he lived a miſerable life with his ſpouſe. Here he was viſited by his friend and pupil Mr. Sandys in company with another pupil, Mr. Cranmer, a grand-nephew of the celebrated archbiſhop. The young man found their reſpected and very learned tutor tending a ſmall flock of ſheep, during the abſence of his ſervant, called away to perform ſome domeſtic employment. When he was releaſed from this duty, his friends accompanied him to the houſe, where they had the more ſerious mortification of witneſſing the churliſhneſs of a wife, who took every opportunity of rendering one of the beſt of men wretched by her caprice and vexatious manners. They felt for the ſituation of their friend, and Mr. Cranmer, before he left the houſe, expreſſed his ſurpriſe that he could poſſibly endure the miſeries and inſults to which he was ſubjected; to this Mr. Hooker replied, "My dear George, if ſaints have uſually a double ſhare in the miſeries of this life, I that am none, ought not to repine at what my wiſe Creator hath appointed for me, but labour (as indeed I do) to ſubmit mine to his will and poſſeſs my ſoul in peace." Upon the return of Mr. Sandys, he prevailed on his father to obtain ſome better ſituation for Mr. Hooker, and he was, accordingly, by his intereſt, made maſter of the Temple. He ſoon found that London was not adapted to his mind; he loved a rural retirement, in order, as he ſaid, "that he might ſee God's bleſſings ſpring out of the earth, and be free from noiſe and buſtle, and eat that bread, which he might call his own, in privacy and quietneſs." He was, therefore, deſirous of exchanging his preferment for a more retired and tranquil ſcene, and the more ſo, as he had begun and had made ſome progreſs in his celebrated work "Of the Laws of Eccleſiaſtical Polity," which he found himſelf incapable of carrying on to his own ſatisfaction in the Temple. Upon making known his wiſhes to archbiſhop Whitgift, and apprizing him of the undertaking on which he was employed, Mr. Hooker was preſented, in 1591, to the rectory of Boſcomb, in Wiltſhire; and in the ſame year he had other valuable preferments in the cathedral of Saliſbury. At Boſcomb he finiſhed four books of his great work, which were printed in 1594, and in the following year he was preſented by the queen to the rectory of Biſhop's Bourne, in Kent, where he reſided the remainder of his life, diſcharging the duties of his office in the moſt exemplary and conſcientious manner. Here he finiſhed his work, but he did not live to publiſh the ſixth, ſeventh, and eighth books. Of this very valuable piece pope Clement VIII. ſaid, "that there were in it ſuch ſeeds of eternity as will continue till the laſt fire ſhall devour all learning." In the year 1600, Mr. Hooker, in conſequence of a cold that he caught on a paſſage by water between London and Graveſend, was afflicted with a long and very ſevere illneſs, which, in the end, proved fatal to him. He died in November of the ſame year, when he was only in the forty-ſeventh year of his age. His treatiſe on "Eccleſiaſtical Polity," procured for him a very great and extenſive reputation both at home and abroad. When king James I. came out of Scotland, on his acceſſion to the throne of England, he enquired of archbiſhop Whitgift for his friend Mr. Hooker, and being anſwered that he had died before the queen, who received the news of his death with great regret, he replied, "And I receive it with no leſs, as I ſhall want the deſired happineſs of ſeeing and diſcourſing with that man from whoſe books of church polity I have received ſuch ſatisfaction. Indeed, my lord, I have received more ſatisfaction in reading a leaf or paragraph in Mr. Hooker, though it were but about the faſhion of churches, or church-muſic, or the like, but eſpecially of the ſacraments, than I have had in the reading particular large treatiſes but of one of thoſe ſubjects by others, though very learned men; and though many others write well, yet in the next age they will be forgotten; but, doubtleſs, there is in every page of Mr. Hooker's book the picture of a divine ſoul, ſuch pictures of truth and reaſon, and drawn in ſo ſacred colours, that they ſhall never fade, but give an immortal memory to the author." This work, ſo highly applauded by a pope, and a king, who conſidered himſelf much wiſer and more learned in theology than all the popes, contains the moſt profound and ableſt defence of eccleſiaſtical eſtabliſhments that has ever appeared. Biog. Brit. Toulmin's Neal.

Hooker is the name of a veſſel built like a pink, but rigged and maſted like a hoy; much uſed by the Dutch.

HOOKERIA, in *Botany*, ſo called by Dr. Smith, in honour of his friend Mr. William Jackſon Hooker, F. L. S. a moſt aſſiduous and intelligent botaniſt, celebrated as the diſcoverer of the *Buxbaumia aphylla* in England, and particularly ſkilled in the knowledge of cryptogamic plants, eſpecially *Jungermanniæ*, with the reticulated habit of which that of the *Hookeria* accords. The intereſting journal of a tour to Iceland, which Mr. Hooker has lately printed for the uſe of his friends, gives a foretaſte of what the world may expect from his labours in a more promiſing and more extenſive undertaking. Sm. Tr. of Linn. Soc. v. 9. 275.—Claſs and order, *Cryptogamia Muſci*. Nat. Ord. *Muſci*.

Eſſ. Ch. Capſule ovate, with dot-like reticulations, from a lateral ſcaly ſheath. Outer fringe of ſixteen teeth; inner a ſixteen-toothed membrane. Veil reticulated and cellular, undivided.

Ten ſpecies are deſcribed in the Linnæan Tranſactions, four of which, not previouſly figured, are there engraved. The only Britiſh one is

H. *lucens*. Engl. Bot. t. 1902. (Hypnum lucens; Linn. Sp. Pl. 1589. Sm. Fl. Brit. 1295. Hedw. Fund. v. 1. 13. t. 1. f. 4—6. H. pennatum aquaticum lucens, longis latiſque foliis; Dill. Muſc. 270. t. 34. f. 10.)—Leaves three-ranked, elliptical, uniform, entire, without ribs.—Found in moiſt ſhady ſituations, in various parts of England, eſpecially in the northern counties, as well as in Germany and North America. Mr. Hooker gathered it on Holt heath, Norfolk, in wet places among graſs, bearing fruit in February. This is one of the moſt elegant of moſſes, diſtinguiſhed by its broad, pellucid, finely reticulated, ſucculent, pale green *leaves*, which ſtand upright, apparently in two rows, but moſtly diſpoſed in three; they ſometimes take root at their blunt points. *Sheaths* lateral, ſolitary or in pairs, of ſeveral ovate, pointed, ribleſs ſcales. *Fruit-ſtalks* ſolitary, erect, five times the length of the leaves, rather ſtout, deep red and ſhining, bulbous at the baſe. *Capſule* more or leſs drooping, ovate, ſhort, dark brown, ſhining, all over moſt beautifully and regularly marked with dot-like reticulations, which by a miſtake in the engraver of Engliſh Botany (for the drawing was correct), are repreſented like furrows only. Every other part of that plate, however, is correct. The ſingularly cellular white *veil*, which falls off entire, without ſplitting, is perhaps as good a mark of the genus as any. The *lid* is conical, as long as the capſule.

Among the exotic ſpecies the moſt remarkable for its hiſtory is

H. *pennata*. (Leſkea pennata; Labillard. Nov. Holl. v. 2. 106. t. 253. f. 1. Anictangium bulboſum; Hedw. Sp. Muſc. 43. t. 6. f. 1—5.)—Leaves three-ranked, ſomewhat pointed, finely ſerrated; the intermediate row orbicular, half the length of the reſt, which are lanceolate, and longer than the fruit-ſtalks.—Gathered by M. Labillardière, and Mr. R. Brown, in New Holland; at Duſky bay, New Zealand, by M. A. Menzies.—Larger than the foregoing, with creeping, denſely tufted, black *roots*. Hedwig miſtook them for bulbous ones, and ſeeing only half-ripe *cap-*

ſules, did not detect the fringe, which cauſed him to refer this moſs to his *Anictangium*. Mr. Brown found its *veil* to agree with that of *H. lucens*, which confirms the character of the genus. The ſimple fern-like form of the ſtem and flat leaves is peculiarly elegant. The height of the plant is from three to five inches.

The eight remaining ſpecies of *Hookeria* are *quadrifaria*, Tr. of Lin. Soc. v. 9. t. 23. f. 1.; *filiculiformis*, Hedw. Sp. Muſc. t. 50; *tamariſcina*, ibid. t. 51. f. 1—7; *rotulata*, ibid. f. 8—13; *flabellata*, Tr. of Lin. Soc. v. 9. t. 23. f. 2; *Arbuſcula*, ibid. f. 3; *flexilis*, Hedw. Sp. Muſc. t. 58; and *uncinata*, Tr. of Lin. Soc. v. 9. t. 23. f. 4.

HOOKETOWER, in *Geography*, a cape on the ſouth of Ireland, at the extremity of a tongue of land in the county of Wexford, which forms the eaſtern ſide of Waterford harbour. On this cape is a light houſe. N. lat. 52° 6′. W. long. 6° 58′.

HOOLA, a town of Norway, in the dioceſe of Aggerhuus; 32 miles N.W. of Chriſtiania.

HOOLDEAH, a town of Bengal; 21 miles S. of Calcutta.

HOOLE, Charles, in *Biography*, who flouriſhed in the 17th century, was born at Wakefield, in Yorkſhire, and educated at Lincoln college, Oxford, after which he became maſter of the free-ſchool at Rotheram; but at the beginning of the civil wars he removed to London, where he gained great reputation as a ſchool-maſter. He was author of many uſeful ſchool books, an excellent edition of the Greek Teſtament, and a tranſlation of Terence's plays. He died in the year 1666.

Hoole, John, a very ingenious man, was born in London in 1727. His father was a watch-maker, and a very able mechanician. He gave his ſon a very good education, and obtained for him a clerkſhip in the India Houſe. During his engagements in this ſituation he devoted his leiſure hours to literary purſuits, particularly to the ſtudy of the Italian language, of which he acquired an extenſive and very deep knowledge, as appears by his tranſlations of Arioſto's Orlando Furioſo, and Taſſo's Jeruſalem. He alſo publiſhed two volumes of the dramas of Metaſtaſio, and was author of three tragedies, ſome poems, and the life of Mr. Scott of Amwell. He died in the year 1803.

HOOLI, the name of a cheerful feſtival, celebrating the arrival of the vernal equinox, as the "Duſſera," at the end of ſummer, is appropriate to the autumnal equinox. It is obſerved in honour of Narrain, or the favourite god Kriſhna, of the Hindoo mythology, who is the Apollo of the Hindoos, the god of dance and muſic, of pleaſure and of ſport. This feſtival takes place the firſt full-moon after the ſun has paſſed the vernal equinox, and is calculated to hail the approach of ſpring. Its ceremonies conſiſt entirely of the moſt frolickſome and playful ſports. All ranks and ages mix in its celebration; and among other acts, during its continuance, caſt at each other handfuls of a pulverized ſcarlet flower, the jubba (*ixora Linnæi*), and thin elaſtic balls, filled with a liquid coloured by the ſame plant; theſe burſt on the ſlighteſt reſiſtance, and cover the whole dreſs and perſon of him who is ſtruck by it with a crimſon ſtain. It is deemed no diſgrace on this occaſion to bear the moſt obvious traces of the deepeſt dye; for when once the barrier of the "Zennara" (the apartments of the females), is broken down, the ſovereign himſelf ſets aſide his high deſpotic character, and unbends in frolickſome feſtivity. Unreſtrained liberty of ſpeech and repartee prevails; and the females of every family particularly delight in giving free indulgence to theſe romping ſports, which are equally kept up by the Mahometans and the Hindoos. Turner's Tibet, p. 144, &c.

HOOLSOVRY, in *Geography*, a town of Hindooſtan, in Dowlatabad; 15 miles from Balkee.

HOOLY-ONORE, a town of Hindooſtan, in the Myſore country, ſituated at the conflux of the Toom and the Badra, where they form the Tungebadra; taken by the Britiſh troops in December, 1791; 56 miles N.W. of Seringapatam.

HOONGA-HAPAEE, and Hoonga-tonga, ſmall iſlands in the S. Pacific ocean, belonging to the group of Friendly iſlands; 30 miles N. of Tongataboo. S. lat. 20° 36′, and 10 or 11 leagues from the W. point of Annamooka. On the former five men reſide, and the latter is uninhabited. Both abound with ſea-fowl.

HOONLA, a town of Hindooſtan, in the circar of Cicacole; 11 miles W. of Ganjam.

HOOP, a town of Norway, in the government of Wardhuys; 76 miles W. of Wardhuys.

Hoop, in *Rural Economy*, a name frequently applied to a high ſort of cheeſe-vat, ſuch as that uſed in making Stilton and other kinds of ſmall rich cheeſes. See Cheese and Dairying.

Hoop, in *Agriculture*, the name of a dry meaſure of grain, which is equivalent to a peck, or a quarter of a buſhel. See Weights and Measures.

Hoop *Wheel*. See Detent-*wheel*.

HOOPER, Edmund, in *Biography*, organiſt of Weſtminſter Abbey, and a gentleman of the Chapel Royal, where he performed the duty of organiſt. He was one of the authors of the Pſalms in four parts, publiſhed in 1594, and of ſeveral anthems in Barnard's Collection. His full anthems and ſervices uſed to be performed in our provincial cathedrals within our own memory. He died July 14th, 1621.

Hooper, John, was born in Somerſetſhire in 1495, and educated in Merton college, Oxford. He was for ſome time a member of the order of Ciſtercians, but having imbibed the principles of the reformers, he quitted a monaſtic life, and went to Swiſſerland, where he was married. On the acceſſion of Edward VI. he returned to England, and was made biſhop of Gloceſter, to which was added the biſhopric of Worceſter in commendam. Here he laboured with great zeal till the reſtoration of popery under Mary. Biſhop Hooper was now thrown into priſon, whither the good old Latimer alſo was ſent ſoon after. Here he was exceedingly ill treated, underwent a mock trial, and was condemned to the flames through the means of the infamous Gardiner. Though tried at the ſame time with Rogers, who was burnt at Smithfield, he was ſent into his own dioceſe to be executed. This circumſtance was intended to ſtrike the greater terror into the breaſts of thoſe among whom he had laboured in the goſpel miniſtry, but it was to the biſhop a ſource of conſolation, who rejoiced in giving teſtimony, by his death, to the doctrine which he had formerly preached. When he was chained to the ſtake, a ſtool was ſet before him, on which was laid the queen's pardon if he would merit it by recanting his opinions. But he had made up his mind to the worſt that bigotry could inflict, and was prepared for the ſavage puniſhment to which he was ſentenced. He ſuffered it in its full ſeverity; the wood was green, and could not eaſily be kindled; his lower parts were literally conſumed before his vitals were attacked. One of his hands dropped off; with the other he continued to exhibit his fortitude and pious reſignation to the will of God. He was three quarters of an hour in torture, which he bore with inflexible conſtancy. This brutal act was perpetrated in the year 1555. Hume.

Hooper, George, was born at Grimley, in Worceſterſhire, in the year 1640. He was educated at Weſtminſter ſchool, and from thence he was ſent to Chriſt's college, Oxford in 1656. Here he diſtinguiſhed himſelf by his talents and aſſiduous induſtry, and became very converſant in the knowledge of the mathematics and the ancient languages, including the oriental tongues, and particularly the Arabic. He took his degrees, and became chaplain firſt to Dr. Morley, biſhop of Wincheſter, and then to Dr. Sheldon, archbiſhop of Canterbury. He was ſhortly after preſented with the rectory of Lambeth, and the precentorſhip of Exeter. In 1677 he took his degree of D.D. and was ſent into Holland to attend the princeſs of Orange as her almoner. When he returned from the continent he was offered the profeſſorſhip of divinity at Oxford, which he declined, and in 1680 was appointed chaplain to the king. Little more is known of him from this time till 1691, excepting that he was commiſſioned by James II. to attend the duke of Monmouth in the Tower, on the evening before his execution. In the year already mentioned, during the abſence of king William in Holland, queen Mary, without any application on his part, promoted Dr. Hooper to the deanery of Canterbury. In 1701 he was choſen prolocutor to the lower houſe of Convocation, and was offered the primacy of Ireland by the earl of Rocheſter, then lord lieutenant. In 1702 Dr. Hooper was promoted to the biſhopric of St. Aſaph, in which ſee he continued only ſix months, when he was removed to the ſee of Bath and Wells. This change he very much objected to, and abſolutely refuſed farther promotion, though the biſhopric of London and the archbiſhopric of York were ſucceſſively offered him. It is ſaid of him that he conſidered himſelf as married to his dioceſe, and he uniformly promoted his own clergy to all the inſtances of preferment that fell into his diſpoſal. He regarded no intereſt, but made thoſe the objects of his favour who were moſt attentive to the duties of their ſituation. The care of his pariſh was the beſt recommendation of a paſtor to this vigilant prelate, and the continuance in his duty the moſt ſatisfactory requital that could be made him. Biſhop Hooper died at Barkley, in Somerſetſhire, in 1727, having preſided over his ſee nearly 25 years. He was author of a learned "Diſcourſe on Lent, in two Parts: the Firſt, an Hiſtorical Account of its Obſervation; and the Second, an Eſſay concerning its Original;" of "A Calculation of the Credibility of human Teſtimony," publiſhed in the "Philoſophical Tranſactions;" of "An Inquiry into the State of ancient Meaſures, with an Appendix concerning our old Engliſh Money;" and various other works. They were all collected and printed at Oxford in 1757, in one volume folio. Gen. Biog.

Hooper, in *Ornithology*, a name by which ſeveral have called the cygnus ferus, or wild ſwan.

HOOPING Cough, in *Medicine*. See Pertussis.

HOOPOE, in *Ornithology*. See Upupa.

HOORELL, in *Geography*, a town of Hindooſtan, in Mewat; 24 miles N. of Dig.

HOORINGOTTA, a river in Bengal, formed by the union of ſeveral others, which runs into the bay of Bengal, N. lat 20° 50'. E. long. 90° 6'.

HOORN, a ſea-port town of Holland, ſituated on the Zuyder ſee. The town is fortified, as well as guarded by dams, has five gates, and contains ſome handſome buildings, churches, and hoſpitals. The adjacent land is very rich, and produces great quantities of butter and cheeſe, beſides fattening lean cattle, brought hither from the more northern parts of Europe; 11 miles E. of Alcmaer. N. lat. 52° 39'. E. long. 4° 54'.

Hoorn, or *Horn*, a town of France, in the department of the Lower Meuſe, giving name to a ſmall county in the biſhopric of Liege; 3 miles W. of Ruremond.—Alſo, a ſmall iſland in a bay on the N. coaſt of New Guinea. S. lat. 3° 42'. E. long. 135° 42'.

Hoorn *Iſlands*, two iſlands in the South Pacific ocean, diſcovered in 1616, by Le Maire and Schouten; each of which was governed by a king. The inhabitants are deſcribed as large and tall, ſtrong and well made, excellent runners and ſwimmers, of a yellowiſh brown complexion. Their hair was dreſſed in a ſingular manner, forming ſeveral tails, or erect, like hogs' briſtles. The different ranks ſeemed to be diſtinguiſhed by the number of theſe tails. Both men and women were naked, except a ſmall covering round the middle. The women were very deformed, having long breaſts that hung down below their ſtomachs like leather ſacks. Theſe people ſeemed to have no notion of a God or religious worſhip. S. lat. 15°. E. long. 171° 30'.

Hoorn's *Iſland*, a ſmall iſland at the E. entrance of the ſtraits of Sunda. S. lat. 5° 44'. E. long. 106° 24'.

HOORNBECK, John, in *Biography*, a learned Dutch Proteſtant, was born at Haerlem in 1517. He was divinity profeſſor at Utrecht, and afterwards at Leyden, where he died in 1666. His application was very intenſe, and his learning various and ſolid. He underſtood many languages, both ancient and modern, as, the Latin, Greek, Hebrew, Chaldee, Syriac, Dutch, German, Engliſh, French, and Italian. He was author of very many works, which are enumerated by Bayle. He left two ſons, of whom one, Iſaac, was an eminent advocate at the Hague, and afterwards counſellor penſionary, keeper of the ſeals, and ſtadtholder of the fiefs of Holland and Weſt Frieſland. Bayle.

HOORNE, John Van, a diſtinguiſhed anatomiſt and phyſician, was born at Amſterdam in 1621. After the completion of his grammar education he was ſent to the univerſity of Utrecht for the purpoſe of entering on the ſtudy of medicine, and went through his courſe with honour. With a view to farther improvement he viſited Italy; but on his arrival in that country he entered the Venetian army, in which he ſerved for ſome time. Subſequently, however, his taſte for ſcience returned; and having ſtudied under the moſt eminent profeſſors of Italy he went to the univerſities of Baſil, Montpellier, and Orleans, in the firſt of which he received the degree of M.D. with ſome very honourable teſtimonies of his abilities. In conſequence of theſe he was appointed profeſſor of anatomy and ſurgery at Amſterdam ſoon after his return; and in 1653 he was made profeſſor of the ſame ſciences in the univerſity of Leyden, an appointment which he accepted with extreme pleaſure, and which he fulfilled with much celebrity until his death, in January, 1670.

Van Hoorne was a man of conſiderable literary attainments, being maſter of eight languages. His reputation with poſterity, however, reſts principally on his anatomical knowledge. He had great reputation as a teacher of anatomy, and ſeems to have been the firſt to deſcribe the thoracic duct in the human body, which Pecquet had already demonſtrated in other animals. He is ſaid to have been the firſt, likewiſe, to ſhew the intimate ſtructure of the teſtes. He drew a great number of anatomical figures, with great elegance, which were never publiſhed, but which, according to Haller, were in the library of the celebrated Boerhaave, at Leyden. Beſides having edited the works of Botallus, in 1660, and the book of Galen, "De Offibus," with the commentaries of Veſalius, Sylvius, &c. in 1665, Van Hoorne was the author of ſeveral works, almoſt entirely relating to anatomy, *viz.* "Exercitationes Anatomicæ I & II ad Obſervationes Fallopii anatomicas," &c. Liege, 1649, 4to.; "Novus ductus chyliferus, nunc primum delineatus, deſcriptus, et eruditorum examini propoſitus," ibid. 1652; "Microcoſmus, ſeu brevis manuductio ad hiſtoriam corporis humani in gratiam diſcipulorum," ibid. 1660, and ſeveral ſubſequent editions; "Microtechne, id eſt, breviſſima Chirurgiæ Methodus," ibid. 1663, 1668, Lipſiæ, 1675; "Prodromus Obſervationum ſuarum circa partes genitales in utroque ſexu," Leyden, 1668. This work was afterwards publiſhed by Swammerdam, who had made the greater part of the experiments there recorded, of which Van Hoorne only paid the expences. Swammerdam entitled it "Miraculum Naturæ," 1672, 4to.; "Obſervationes Anatomico-Medicæ," &c. Amſt. 1674, 12mo.; a poſthumous collection, under the title of "Opuſcula Anatomico-Chirurgica," was publiſhed by profeſſor Pauli, at Leipſic, 1707, 8vo. with annotations. Eloy. Dict. Hiſt.

HOOSACK, in *Geography*, a townſhip of America, in Renſſlaer county, New York, oppoſite Bennington, in Vermont, having 3141 inhabitants.

HOOSE, in *Rural Economy*, a term applied to an affection of the lungs, which is often met with in cows, pigs, and ſome other animals. In order to the removal of the complaint it has been lately adviſed to have recourſe to equal quantities of vinegar of ſquills and balſam of copaiva, as one ounce of each, adding double the ſame proportion of balſam of ſulphur, and four times as much honey, preparing it for one doſe, by means of a quart of penny-royal tea, and giving it to the beaſt immediately, which ſhould faſt two hours before, and as long afterwards. It ſhould be repeated every third day. Or, two ounces of powdered elecampane root, one each of ſalt of wormwood and powdered liquorice root, with the ſame quantity of the ſweet ſpirits of nitre, and half an ounce of ſulphurated quickſilver, may be given in the ſame way as above, and repeated every 24 hours.

While under theſe medicines, it is recommended that the beaſt ſhould be kept in the houſe, except in very fine weather, and when the graſs is quite dry. The drinking of cold water ſhould likewiſe be avoided.

HOOST, Peter Cornelius Van, in *Biography*, was born at Amſterdam in 1581, of reſpectable parents, who gave him a good education. He attached himſelf to writing in his native language, and obtained the higheſt reputation both in poetry and hiſtory, ſo that his works were conſidered as a model of ſtyle. His principal piece was the Hiſtory of the Low Countries, commencing with the reſignation of Charles V. and reaching to 1588. This is much valued for the accuracy of its political and military ſtatements. It was firſt printed at Amſterdam in 1642, and has been ſeveral times reprinted. He was author alſo of a hiſtory of Henry IV. written in the Latin language; and in it is given a relation of the deſtiny of the houſe of Medici. His miſcellaneous works were printed in four volumes, conſiſting of epiſtles, comedies, and poems. Hooſt received the order of St. Michael from Lewis XIII. He died at the Hague in 1647. Moreri.

HOP, in *Botany*. See Humulus and Lumulus.

We have but one ſpecies of this genus, which is diſtinguiſhed into the male and female hop.

The male hop grows wild by the ſide of hedges and upon banks, in many parts of England. The young ſhoots of theſe plants are often gathered by the poor people, and boiled as an eſculent herb; but theſe muſt be taken very young, otherwiſe they are tough and ſtringy. This is eaſily diſtinguiſhed by the flowers, which are ſmall, and hang in long looſe bunches from the ſide of the ſtalks, abounding with farina on their ſummits, and have no hops ſucceeding to the flowers.

Hops were firſt brought into England from the Netherlands in the year 1524. (15 Hen. VIII.) But they were known and uſed long before. They are firſt mentioned in the Engliſh ſtatute-book in the year 1552, *viz.* in the fifth and ſixth of Edw. VI. cap. 5. And by an act of parliament of the firſt year of king James I. anno 1603, cap. 18. it appears that hops were then produced in abundance in England.

Hop, in *Agriculture*, the name commonly given to a well known plant of the fibrous-rooted, perennial, climbing kind, which is chiefly grown for the uſe of the flower-bud, in affording an agreeable aromatic bitter to beer, and other ſorts of malt liquor. There is only one ſpecies of this uſeful plant in cultivation, but it has a number of varieties, which are made uſe of in different circumſtances and ſituations; ſuch as the *red* bind, the *green* bind, the *white* bind, and ſome others. The firſt of theſe affords but a very ſmall hop, yet, from its hardy qualities and habits of growth, it is capable of being employed with advantage in cold, expoſed ſituations, where the climate and ſoils are not ſo favourable as might be wiſhed, or improper for being planted with the other kinds. It is conſidered by many as reſiſting the *blaſt* more effectually than the other varieties, frequently ſhowing health and vigour where the other ſorts are greatly affected by the fly and the louſe, as well as leſs expoſed during the ſeaſon of picking to the injurious effects of the ſun and rain.

The green-bind variety, although much leſs hardy in its nature than the above ſort, is a much more productive bearer, and not unfrequently ſucceeds admirably in the medium deſcriptions of hop-ſoils, even where the expoſures are by no means the moſt favourable. The white-bind ſort, however, which is ſtill more tender and delicate in its habits, is in general held in the higheſt eſtimation by the hop planter, in conſequence of its being more early, and the produce of much higher value in the market.

Hops are likewiſe frequently diſtinguiſhed by the planters under the names of the Flemiſh, the Canterbury, the Goldings, the Farnham, and other ſimilar titles. The Flemiſh ſort is commonly ſuppoſed the moſt inferior in its qualities, being of the red-bind deſcription. It is the female hop-plant which affords the produce which is the object of the planter. Where the male plant is met with, it ſhould of courſe be removed, as of no utility.

As the different varieties of the hop become in a ſtate of maturity at different periods, and are proper for very different kinds of ſoil, the planter ſhould be careful that plants of the ſeveral ſorts be not intermixed, in ſetting them out, upon the ſame plantation or hop-ground; as where there is an inattention in this reſpect, it cauſes much trouble in the culture of the crop afterwards, eſpecially in extenſive concerns of this kind, on account of the ſcarcity of the labourers for getting on ſufficiently faſt with the neceſſary work.

But where the different ſorts are planted out in ſeparate plantations, this difficulty is wholly obviated, and the buſineſs of ſecuring and preſerving the crops rendered much more eaſy and convenient in its accompliſhment, by their becoming in a ſtate of maturity at different times.

Situations for Hop-grounds.—The moſt ſuitable ſituations and expoſures for the cultivation of hops are ſuch as ſlope gently to the ſouth, or which are level, and have a ſouth-weſterly expoſure, but which have the benefit of being protected from the effects of the north and north-eaſterly winds by ſome ſort of ſcreen or ſhelter, as thoſe of high grounds behind, &c. The plantations themſelves ſhould, however, be pretty free and open, as the plants riſe to conſiderable heights, and ſhould not be too much confined, but have a full circulation of air about them, and the perfect admiſſion of light, as well as the influence of the ſun, amongſt them; as, by ſuch means, the healthy vigour and growth of the binds may be not only promoted, but the too abundant moiſture that hangs upon them be ſpeedily diſſipated, and thereby the crops rendered leſs liable to be injured by the effects of the *blight* or *blaſt*, and the *mildew*, to all of which they are much expoſed. Situations contiguous to the ſea-coaſt, or in marſhy and fenny tracts that are level, are ſeldom ſuitable to the cultivation of the hop, as crops on them moſtly miſcarry in unfavourable ſeaſons for ſuch produce.

Soil and Preparation.—The ſorts of land which are the moſt proper for the growth of this kind of plant, are all thoſe of the more deep, ſtrong, friable, loamy, ſandy, or clayey deſcriptions. They ſhould have a diſpoſition to dryneſs, without being too deſtitute of a proper degree of moiſture, and be poſſeſſed of a good depth of mould of the rich vegetable kind. Soils of the thin, gravelly, and chalky ſorts are quite improper for the culture of this ſort of crop, as the former is not ſufficiently retentive of moiſture for the ſtrong, healthy growth of the plants, and the latter imparts its humidity too ſparingly to their fibrous roots, in conſequence of its great abſorbing quality.

Experience has, however, ſhewn that a thin, ſlaty ſoil, which reſts upon a ſub-ſoil of the ſtony kind, and which is greatly intermixed with rich mould, is well adapted to the hop culture, and affords equally full crops with thoſe of the rich deep kinds. The ſoil near Maidſtone, in Kent, on which hops are extenſively grown, is chiefly of this nature.

Such lands as have been long in the ſtate of paſture, and which of courſe are much intermixed with vegetable matter, as thoſe of old orchards, rich dry meadows, and other fertile paſture grounds, are in general the moſt proper for this uſe; but the hop may be grown on lands which have been under the plough, provided a ſufficient quantity of manure be employed to afford a proper degree of fertility for the due ſupport of the plants.

Whatever the ſtate of the land may be, on which this ſort of plant is grown, it ſhould be perfectly reduced and broken down into a fine ſtate of mould, to a conſiderable depth, by the repeated operations of the plough and harrow, or by being well trenched over by ſpade labour. The laſt is a very effectual method, where the land is to be broken up from the ſtate of ſward, though at preſent too expenſive, in moſt ſituations, to be employed; but wherever it is had recourſe to, the work ſhould be performed in the early part of autumn, in order that the grounds may have the full operation and influence of the froſts, during the winter, upon them. Theſe modes are both of them perfectly effectual in bringing hop-plantations into a fine ſtate of mould, and at the ſame time, in clearing them of every deſcription of weed that is injurious. During the concluding operations, where the plough method is practiſed, the land, if it be ſufficiently dry, ſhould be left in as regular and even a ſtate as poſſible upon the ſurface; but where it inclines to be wet, it is better to have it ridged up, as by that means the ſuperabundant moiſture may be in a great meaſure diſcharged.

In all caſes, juſt before the time of planting, a portion of compoſt, conſtituted of well rotted dung, and rich freſh vegetable mould, in the proportion of one of the former to two parts of the latter, well blended together for a conſiderable length of time, ſhould be applied in the holes where the hops are to grow, in the quantity of about a buſhel in each. This compoſt is uſually ſet out over the whole of the grounds firſt, and, after the holes have been formed, put into them.

The Sets and Methods of planting them out.—There are two ſorts of ſets occaſionally made uſe of in forming new hop-plantations, as thoſe made from the cuttings of the old binds, and root or bedded ſets, which are taken off from the vines in breaking up old hop-grounds. The firſt ſort is, however, moſt commonly made uſe of in the planting of new grounds, being formed in the early ſpring ſeaſon. The latter ſort is procured in the autumn from the old roots, in deſtroying former plantations. The cuttings ſhould be made from the beſt and moſt healthy plants, each being cut to the length of about five or ſix inches, leaving two or three eyes or joints in it, as the buds from which the new plants are to take their origin. It is uſual for them to be ſold by the hundred of ſix ſcore, at the rate of from ſixpence to a ſhilling.

The work of planting is executed at different ſeaſons, according to the kinds of plants or ſets which are employed. Where root ſets are made uſe of, the planting is generally performed in the autumn, about the end of October or the beginning of the following month, this being the period at which the former grounds are commonly dug up.

But where the cuttings of the binds are employed, the beſt ſeaſon of planting is uſually in the ſpring months, as from the end of February to the beginning of April, as the ſeaſon may be ſuitable; this being the time of cutting over and dreſſing the old binds, when the ſets can be moſt readily provided.

In the buſineſs of planting there are different forms and diſtances preferred by different planters, according to the method in which the culture of the crops is afterwards to be performed. In caſes where it is to be executed by means of horſe labour, which is the leaſt expenſive method, the beſt plan is that of ſetting them out in rows, at ſuitable diſtances, ſo as to form ſtraight lines in all the different directions. But where the work is to be done by means of hand-labour, this is not of ſo much importance, if proper care be taken to allow ſufficient ſpace for the perfect growth of the plants. Some, in this caſe, practiſe the row plan, while others have recourſe to what they call a triangular plan. It is plain, however, that the planting in rows at equal diſtances, in ſuch way as to admit of the ground between the plants being kept clean and in order by the harrow and nidget, muſt be far leſs expenſive than that of the irregular mode, in which hand labour can only be employed.

The different diſtances at which the holes and hills are formed, on which the plants are to be ſet out, vary greatly according to circumſtances. Some good planters recommend ſix feet and a half, or ſeven feet; while others are in the habit of giving preference to a five or ſix feet plant. In conſequence of plants of this ſort growing with great luxuriance and riſing to great heights, of courſe ſending forth much bind and foliage, they neceſſarily require a large ſpace, as where they ſtand too cloſely together, they are not only more apt to become infected with diſeaſe, but to *houſe* or twiſt together above the tops of the poles, by means of which, ſuch a degree of ſhade is given as prevents the hops below from completing their growth, and thereby leſſens the quantity of produce in the crop. For theſe reaſons it would appear, that the hop cannot be beneficially cultivated in a ſmaller ſpace than ſix or ſeven feet; on rich good ſoils the latter diſtance may be the more proper, but on others of inferior quality, the former.

There is a method of planting practiſed in ſome diſtricts on ſoils that are inclined to a moiſt boggy ſtate; which is that of forming the plantations in the bed-method, by digging them ſixteen feet in width, and taking out the trenches three feet in breadth, and from two to two and a half in depth, the earth which is removed being evenly ſpread out over the large previouſly prepared beds. On theſe, after the holes have been formed a ſpit in depth, twelve inches in diameter, and ſix feet diſtant in each direction, the ſets are put into the ſoil, in three rows on each large bed, in the manner that is uſual in other caſes.

Making the Holes and forming the Hills.—The holes for the reception of the manure are marked out in various modes, according to the particular practice of the diſtrict, and the taſte of the planter; with ſome it is the cuſtom to have recourſe to a line with knots formed in it, at the ſpaces which are intended for the holes; but others mark off at once the places for the holes, by driving ſhort ſtakes into the ground at proper diſtances in each direction. There is, however, a more expeditious mode of proceeding than either of the above ones, which is that of ſtriking furrows by the plough in different directions of the hop-grounds, at the neceſſary diſtances, in ſuch a way as to conſtitute a kind of ſquares, the holes being formed in the angles where the furrows croſs each other. Whichever method is followed, the holes are made by taking out the mould, to the depth of about twelve inches, by a ſpade, or, what is much better, by the tool termed a *ſpud*; always forming them in a circular manner, with the diameters of about eighteen inches; the bottom mould or ſoil being a little ſtirred or looſened at the time. Theſe holes are then to be filled partially with ſome of the compoſt already noticed, the mould that was taken out of them being replaced upon the compoſt, in ſuch a way as to form ſmall riſings or ſorts of hills. The ſets or roots are afterwards planted out upon theſe hills, to the number of ſeven upon each, by means of a proper dibbling ſtick, one being placed exactly in the middle or top of each of them, and the reſt at equal diſtances round it, at the diſtance of about four or five inches from the ſides of the holes. It is uſual to put the ſets or cuttings into the depth of about two inches in the compoſt, in ſuch a manner as to have the tops wholly covered by the mould on the ſurface part of the hills. It is thought better, however, by ſome planters, to have them covered lightly by the fine mould from the holes, after they have been planted out in the compoſt to nearly the above depth.

In ſetting out the plants on the large ridges, on the boggy ſorts of land juſt noticed, the work of holeing and hilling is commonly performed towards the latter end of July, or beginning of the following month.

After the buſineſs of holeing, hilling, and ſetting out the plants has been thus executed, nothing further is neceſſary to be done, until about the middle of May, except that of keeping the land about the plants well looſened, and perfectly clear from all ſorts of weeds, at which time, in conſequence of the growth of the young plants, it will be requiſite to apply an additional quantity of fine mould about them on the hills, which ſhould be ſcraped up from the intervals, with the view of checking the too luxuriant growth of the young ſhoots, and thereby promoting the vigour of the ſhoots; ſome likewiſe twiſt the ſhoots together into a kind of knot. Others, however, think it better to make uſe of two ſmall ſticks, about a couple of yards each in length, which are ſet firmly into each hill, ſo as to direct the climbing of the ſhoots, two or three, or more, being led up each ſtick, and occaſionally tied with baſs or ſedge during the ſummer ſeaſon. There will be a ſecond moulding neceſſary, in the ſame way, about the end of July, or beginning of the following month.

Where the planting is done on the boggy deſcriptions of land noticed above, the plants are poled in about three weeks with old ſhort poles, to each of which two or more of the binds are tied, the land being kept clean by hoeing and raking over occaſionally. This method is however more tedious and expenſive than the others, without much ſuperiority. By the whole proceſs the ground may probably be kept ſomewhat more dry and free from injurious moiſture.

Other ſorts of crops are by ſome grown along with thoſe of the hop kind, ſuch as thoſe of the common bean, French bean, cabbage, and onion kinds; but this is a practice that ſhould ſeldom be had recourſe to, as injury may be done by it to the hop-plants, by their affording too much ſhade, and thereby preventing the free admiſſion of air, light, and ſun to the young binds. Onions are the leaſt exceptionable ſort of crop for this purpoſe, in conſequence of their low growth, and their requiring to be ſown at the time the hop ſets are put into the ſoil. For the firſt year or two after the hops are put into the ſoil they may therefore be employed in ſome caſes with benefit. All ſorts of tall growing crops ſhould, however, be carefully avoided.

Hop-plantations, though they require ſome years to come to perfection, ſhould rarely, if ever, have any produce taken from them the firſt after they are formed, as by ſuch means great detriment is often done to the future produce which they ſhould afford. The Suffolk planters, in the mode of planting which they make uſe of, however, not unfrequently take a produce of from three to five hundred weight of hops, even the firſt year. Where bedded or root ſets are uſed in planting, a ſmall produce is even capable of being taken the firſt ſeaſon, as the plants or binds are nearly as forward at that period as thoſe from cuttings are in the ſecond.

In caſes where hop-grounds have been formed with care in theſe methods, and where the ſoils are well ſuited to the growth of the plants, they are capable of continuing in bearing for a great number of years, as twenty or more, the defects that take place in the hills being carefully ſupplied as they may occur. However, though this may be done, it is ſuggeſted as a better practice in moſt caſes to renew the plantations at conſiderably ſhorter diſtances of time, or to occaſionally renew certain portions as they may be found neceſſary and convenient. And, in all caſes, to render ſuch plantations as productive as poſſible, whether cultivated in the ſpade, plough, or hoe methods, the land in the intervals ſhould be well ſtirred two or three times in favourable periods, and in particular caſes more frequently.

It is rarely neceſſary, in the ſecond year of the plantations, to apply any manure to the hills; but the ground in the intervals ſhould be well looſened and ſtirred in the autumnal ſeaſon, in the ſame way as in the firſt year; however, in the early ſpring months, in ſuitable weather, as about the middle of March, the hills ſhould be opened, and the earthy mould well cleared away from the chief roots by a tool which is denominated a picker, in the view that the ſtocks may be properly pruned and dreſſed over; in which, all the bearing ſtems of the preceding year are cut off within a joint or two of the roots; and all ſuch ſhoots or ſuckers as were not permitted to be attached to the poles, or which have proceeded from the edges of the hills, completely cleared away, nothing being ſuffered to continue that can poſſibly injure or retard the healthy growth of the young plants or binds. Care ſhould be taken in the execution of this ſort of work, that the various ſtalks and roots be fully laid bare and open to ſuch a depth, that every thing that is prejudicial may be ſeen and eradicated. In the work of cutting over, experienced labourers ſhould conſtantly be employed as much as poſſible, as a great deal depends upon this ſort of work being properly executed, much injury being capable of being ſuſtained by the leaving too much length of bind, or by too cloſely cutting the ſtocks. By the former the crops are liable to be expoſed to *canker;* and by the latter, the hills to be ſo much weakened as not to afford ſhoots in ſufficient abundance. Conſequently, this ſort of work ſhould always be carefully overlooked. When the buſineſs of pruning and dreſſing has been finiſhed, the mould ſhould be raked and returned back again to the plants, ſo as to conſtitute as before a ſort of hills.

It is neceſſary likewiſe at this period that all ſuch plants as appear weak and unhealthy ſhould have others put in their places, that the hop-grounds may be kept quite perfect. Such prunings as are made from the moſt healthy and ſtrongeſt plants may be reſerved for being employed in forming new plantation grounds. And in this ſeaſon likewiſe, as well as the preceding, three hoeings and one *good* moulding up ſhould be given, the firſt at the beginning of May, the next about June, and the laſt in the ſucceeding month; a little fine mould being each time drawn up to the roots of the plants on the hills, ſo as to keep them in a properly moiſt ſituation. The mouldings up ſhould be performed about the beginning of Auguſt, the earth being well laid up over the hills, round the root-ſtems of the plants. It is the beſt done as ſoon as poſſible after rain has fallen.

Poling the Plants.—This is the next operation which becomes neceſſary, and the uſual rule in its execution is to begin the work as ſoon as the binds have ſprung up to the height of two or three inches above the ſurface of the land, which is uſually about the end of April or beginning of the following month. The moſt advantageous number of poles to each hill has not yet been fully aſcertained, but as a full and free admiſſion of air, light, and ſun is eſſential to the healthy growth of the plants, it ſhould evidently not be too great, ſo as to produce much cloſeneſs. Three are the moſt general allowance, though more are frequently made uſe of in the buſineſs. Theſe ſhould be placed in ſuch a manner as to leave the largeſt ſpaces or openings towards the ſouth or ſouth-weſt, in order that the plants may derive the more full influence of air, light, and heat, and thoſe which are the ſtrongeſt on the ſide towards the north, that they may the more effectually reſiſt the effects of winds from theſe quarters. The poles are fixed in the earth in general by means of a tool termed a crow, which is made of iron, and which forms the holes to the depth of eighteen or twenty inches, the ſharpened root ends of which being forced into them, the earth is afterwards immediately cloſed and rammed in about them. The chief difficulty of this buſineſs depends on pitching the holes to proper depths, on ſetting the poles down with ſuch force as that they may be firmly fixed at the bottoms, and on their upper parts having a direction outwards ſo as to prevent the houſing of the binds above them. If theſe objects be not attended to, there may be great loſs from the deſtruction of the plants. After the poles are ſet down, two or three binds may be trained up, each of them being tied in the manner already noticed in ſeveral places, by labourers accuſtomed to the work, and repeated as there may be occaſion. In caſes where the poles are tall, and the binds ſtrong, ſtanding ladders may be neceſſary in executing the work near the tops of the poles.

It is found that this buſineſs requires particular regard in the early part of the ſummer. When the binds prove unexpectedly ſtrong and vigorous in their growth, and the hills have been polled with ſhort ſlender poles, it may occaſionally repay the trouble and expence, to have them repolled with thoſe of taller and ſtronger kinds, and the ſhort ones removed. In ſome inſtances great advantage has been gained in this way.

In the more early growth of the plants, the ſuperfluous binds of every ſort ſhould be repeatedly removed during the ſummer ſeaſon, as they ſhow themſelves, merely reſerving one or two on each hill, to ſupply the ſituations of ſuch as may have been injured in their firſt training to the poles, as ſuch accidents not unfrequently occur, from the tender buds being bruiſed or twiſted off by the great agitation cauſed by the action of the winds and other cauſes. Theſe are the whole of the neceſſary operations in the culture of the hop, previouſly to the ſeaſon at which the produce becomes ripe and ready for the hop-picker, which is known by the fragrant ſmell that is emitted from them, and their becoming firm, and of a brown colour. This uſually takes place about the middle of September, but ſometimes earlier.

Picking the Hops.—This is a buſineſs that requires much care and attention to ſee that every thing proceeds with propriety and diſpatch, as there is conſtantly much danger to be apprehended from delay, the crops being equally expoſed to miſchief from the effects of the winds as thoſe of continued rains. Preparatory to this work it is neceſſary to have proper baſkets, and bins or cribs in readineſs, and ſufficient in number to the extent of hop-ground and pickers which it may be requiſite to employ. Theſe things being in due order, the hop binds are cut over cloſe to the ſurface of the ground by perſons uſed to the buſineſs, and the poles drawn up; and then placed upon the frame of the bins with the binds upon them, generally to the number of two or three, in order to the hops being picked from them. It is common to employ three or four pickers, or more, on each ſide of a frame, for clearing the hops from the binds, which, with the perſon whoſe buſineſs it is to ſort the poles, are termed a ſet. But ſeveral ſets are engaged in the ſame grounds, where they are large. And it is not unfrequent to employ women and children in this ſort of work. When carefully ſeparated from the binds and leaves, the hops are dropt into cloths hung upon tenter hooks underneath, within the frame. As ſoon as this is filled, the hops are removed into a large ſack, in order to their being taken home to be dried on a kiln for the purpoſe. It is conſtantly neceſſary that this ſhould be performed as quickly as poſſible after the picking is done, that the hops may not ſuſtain any damage by continuing together in their damp or moiſt green condition; as where this is the caſe, they are frequently liable, particularly in warm ſeaſons, to be much hurt both in colour and flavour, even in a few hours, by the ſlight fermentation which comes on. The kiln is of courſe kept conſtantly in readineſs, and at work day and night during the picking ſeaſon. The pickers ſhould conſequently be well proportioned to the quantity of hops that can be dried off. Where the hops are ſuffered to accumulate, they ſhould be put in ſmall parcels looſely placed together. See Hop-*baſket*, Hop-*bin*, Hop-*crib*, and Oast.

Where crops of this ſort are tolerably full, a good picker will ſeparate from eight to ten buſhels of hops from the binds in the courſe of the day, which after being ſtoved or dried, moſtly weigh about one hundred weight. It is not unfrequent to let the picking of hops, in ſome places, by the buſhel, at prices varying according to the caſe, or difficulty of providing labourers. It will be neceſſary to have from ſixteen to twenty expert pickers, in favourable ſeaſons, where the produce is good, and where the oaſt is capable of drying off about eighty buſhels at each meaſuring. In addition to the pole puller and pickers it will be neceſſary to have another perſon in the plantation, in order to pick up the ſcattered and ſtraggling branches of the binds, and convey the hops to the oaſt or kiln. For this purpoſe a boy is ſufficient, who, from the nature of his employment, is uſually denominated the poke-boy. Horſe or hand labour is employed in the conveyance of the hops, according to the diſtance from the kiln. The dryer ſhould be perfectly ſteady and regular, and have a full knowledge of the buſineſs, as the profits of the planter greatly depend upon it; but the hop-grower ſhould never be inattentive to theſe matters himſelf. The wages of the different people who are engaged in theſe operations vary much in different places, according to particular circumſtances, but the Kentiſh hop-farmers formerly paid the pole pullers from eighteen pence to two ſhillings the day, with ſmall beer, the dryers half-a-crown, with an unlimited allowance of beer and ſpirits, and the pickers from three half-pence to two-pence the buſhel, with allowances of ſpirits, &c.; but theſe prices are pretty nearly doubled at preſent.

After the buſineſs of drying has been executed, the hops are taken away from the kiln by a ſhovel, and put in a room cloſe at hand, formed for the purpoſe, and termed the ſtowage-room. Here they are kept for five, ſix, or a greater number of days, as there may be occaſion, before they are become in a ſtate proper for being put in the bags; as, when bagged too ſoon, they are brittle, and neither draw ſo good a ſample, or weigh ſo heavy, as is otherwiſe the caſe. The beſt criterion is for them to remain until they have attained a tolerable degree of toughneſs, which is readily known by the feel. See Oast.

Bagging the Hops.—In order to render the bagging of hops eaſy and convenient, a round hole or trap is cut out and formed in the floor of the ſtowage room, exactly equal in dimenſions to that of the mouth of the bag, on which a frame of wood is faſtened, to which the edges of the opening of the bag are ſecurely fixed quite round. Then in each of the lower corners of the bag a ſmall handful of hops is firmly tied, when it is let fall through the hole to below, and the perſon termed the packer places himſelf in it, and by means of a heavy weight which he keeps conſtantly moving round in the places where he is not treading, preſſes and forces the hops down in a very cloſe manner into the bags, as faſt as they are thrown into them, in ſmall quantities at a time, by another labourer. The work proceeds in this way until the bag is quite full, when each of the upper corners have a few hops tied in them in the ſame manner as thoſe at the bottom, which ſerve as handles for removing them by. The bag is then taken up, and its mouth properly ſecured, after being taken from the frame. The cloſer the hops can be ſtowed into the bags, the better they keep both in their colour, ſmell, and taſte. Some loſs in the weight conſtantly takes place in the operations of drying, ſtowing, and rendering the hops proper for being bagged; it being the opinion of ſome that ſixty buſhels of well ripened freſh gathered hops, that have not been infeſted with the fly, will not, when dried and bagged, produce more than about one hundred weight. See Hop-*bag*.

Sample.—The goodneſs of ſamples of hops depends upon ſeveral different circumſtances, but principally on the clammy feel of the yellow farinaceous powdery matter which is ſprinkled over them, and their colour; the former of which, in the language of the hop planter and dealer, is termed the condition, and the ſample conſidered the more or leſs valuable by thoſe who are purchaſers, the more or leſs clammy it is in its feel; while it is of the greateſt conſequence in relation to the latter, that it ſhould be preſerved as bright as poſſible, yet it does not always follow that the brighteſt ſamples are the ſtrongeſt in their flavour. Theſe properties are likewiſe the cauſe of the planters making a diſtinction in the bagging of the hops, as well as in the ſtuff in which it is performed. See Hop-*bag*.

Stacking the Poles.—As ſoon as the picking and other operations have been executed, the poles ſhould conſtantly be collected together, cleared from the binds that may be upon them, and ſet up in proper ſtacks; if the work has not been done already, while the buſineſs of picking was going on. The poles are liable to be much damaged by remaining on the ground when ſurrounded with bind. This ſort of work is often done by the acre, which is probably the beſt method. The old ſhort improper poles are at this time ſeparated and reſerved for the new plantations, ſo that the planter is enabled to aſcertain the quantity of new poles that will be wanted for the next ſeaſon, which it is highly advantageous to have provided and prepared during the leiſure of the winter months. It is the cuſtom to ſhave the bark from all the ſorts of poles, except thoſe of the aſh kind, in which it ſeparates naturally the ſecond ſeaſon, that they may not be deſtroyed by the lodging of the worm in them. See Hop-*pole*.

Clearing away the Bind.—Immediately after the buſineſs of ſtripping and ſtacking the poles has been completed, the bind ſhould be cleared away, which in ſome places is done by tying it up into faggots, bavins, or ſmall bundles, when in a perfectly dry ſtate, being then either ſtacked up or placed in ſheds or other ſituations, in order to be uſed as fuel in ovens or other ways. The work is uſually executed at the rate of about ſixpence the hundred. Some planters however burn it upon the land, while others again permit it to be taken away by the labourers, for their own uſe. But the firſt is the beſt method. Whatever mode is in uſe, it ſhould not be neglected to be removed from the ground as ſpeedily as poſſible, in order that it may not interfere with the future culture of the plantations, ſuch as the winter diggings of it, the applications of manure of the compoſt kinds, and the taking up of the old ſtocks of the plants when they become in a declining ſtate.

Produce.—Hop crops vary more than moſt other ſorts in the quantity of produce, being capable of affording, under different ſtates of ſoils and ſeaſons, from two hundred to more than twenty hundred weight per acre. Upon the middling deſcriptions of ſoil, in pretty favourable years, it may be reckoned from ſix to eight or nine hundred weight, from ten to fourteen being moſtly ſuppoſed good crops. So large a produce as twenty hundred weight but rarely happens, and cannot be much expected by the planter.

Expences of cultivating Hop Crops.—In the county of Kent, the price that was formerly paid for the ſeveral different operations that become neceſſary in their culture, ſuch as hilling, winter digging, cutting, preparing poles, poling, tying, nidgeting, hoeing, picking and ſtripping, and ſtacking the poles, was about 4*l.* 11*s.* 4*d.* per acre. And the whole of the annual expence, ſuppoſing the growth to be ten hundred weight per acre, and the different operations executed at ſtipulated prices, by known neighbouring workmen who can be depended upon, to be 28*l.* 12*s.* 0*d.* including the undertaker for overlooking the plantation, who pays the workmen for the different operations, picking, drying, duty, rent, poles, manure, tythe, bagging, and nidgeting.

But where the planter pays the ſeveral labourers himſelf, the expences will amount to 29*l.* 11*s.* 4*d.* which leaves a profit of 19*s.* 4*d.* in favour of the former method of having the work performed.

Theſe expences at preſent ſtand a great deal higher, perhaps nearly one-half.

In the Hints to Gentlemen Farmers, the expences and profits of cultivating hops are ſtated in this way.

Expences per Acre.

	£.	*s.*	*d.*
Medium price of hop land, per acre,	1	10	0
Digging the ground	0	13	0
Dreſſing and pruning	0	8	0
Poling	0	15	0
Hoeing three times	0	9	0
Moulding once	0	3	6
Tying binds to poles	0	12	0
Stripping binds from poles	0	3	0
Stacking poles	0	4	0
Sharpening poles	0	10	10
Manuring	2	0	0
Picking, drying, and duty, at 1*l.* 10*s.* 0*d.* the hundred, crop ſuppoſed 12 cwt. the acre.	18	0	0
Bagging, with occaſional expence of new bags, about	0	16	0
Aſh poles, eſtimated at 30,250 the acre, and ſuppoſed to laſt eight years, medium price 18*s.* the 100 at the ſtub, the eighth part of which is nearly	3	13	0
Carriage of them	1	5	0
	£31	2	4

Theſe expences have ſince increaſed in a very great degree, probably not much leſs than one half.

Produce per Acre.

	£.	*s.*	*d.*
Suppoſing 1,200 cwt. per acre, and the medium price 4*l.* per cwt. the amount will be	48	0	0
The expence deducted from the produce leaves a medium profit of	16	17	8

The profit, from the expences being lately ſo much augmented, muſt now be placed much higher.

The expence of forming new hop grounds is commonly very great, in many diſtricts being found to be not leſs than from ſixty or ſeventy, to one hundred pounds the acre. In ſome caſes they now ſtand much higher.

The moſt favourable ſeaſons for the growth of this ſort of crops in the whole of their different ſtages, are ſuch as are warm without too much wet, and where the ſouth and ſouth-weſterly winds predominate, as they never anſwer well where there is continued wet weather, or when northerly or eaſterly winds prevail for any length of time in the ſummer ſeaſon. Other cauſes of great injury to theſe crops are likewiſe found in hot gleams of ſun-ſhine after falls of rain, or ſucceeding foggy mornings in the more late ſummer months. Great miſchief is alſo produced by high winds towards the time of picking, in conſequence of the hops being much bruiſed and otherwiſe injured. The produce of ſuch crops is rarely either good or abundant, where unſuitable weather occurs about the time the hops are in bloſſom, as a number of the *bars* never become perfect hops. Forward and luxuriant crops almoſt invariably ſuffer more from all the hurtful cauſes which affect the hop plant, than ſuch as are later and of leſs ſtrong growth. It may conſequently be very uſeful in particular expoſed ſituations to remove all the more forward binds.

To aſcertain the duty of this ſort of produce, it is neceſſary for the planter to be in poſſeſſion of the different acts concerning it. However, every grower of hops is bound to give notice, on or before the firſt day of September, of the number of acres he has in this ſort of cultivation; the number and ſituation of his oaſts; and the place or places of bagging; which together with the ſtore rooms, warehouſes, &c. in which the packages are deſigned to be lodged are entered. And no hops can be removed from the rooms ſo entered until they have been weighed and marked by the proper officer; who marks, or ought to mark, on each package not only the weight, but the name and reſidence of the perſon by whom the hops are grown.

It may be noticed that the original duty was a penny on every pound weight, but the percentages that have ſince been added have raiſed it to about twenty-four ſhillings a bag, or thirteen ſhillings and fourpence the pocket, which is nearly ten pounds the ton. Theſe were the duties in 1790, but they have ſince that time been ſtill further increaſed in a high degree. This large duty is uſually paid to the collector of the exciſe for the particular diſtrict, and the grower has ſix months credit given him.

Hop crops are upon the whole both expenſive and uncertain, and the cultivation of which ſhould be well weighed before it is began. Where the ſoils are quite ſuitable for them; and there are poles ready at hand upon the land, with a ſufficient capital in the pocket of the planter, the hop culture is perhaps a kind of huſbandry that may be practiſed with benefit; but under other circumſtances it will ſeldom be found profitable. Where hops are grown in connection with a farm, it is neceſſary to attend to the extent of land that can be manured without injury being done to the other grounds under tillage huſbandry.

There are few field crops more expoſed to injurious affections than that of the hop. In its more early growth it is liable to the ravages of an inſect of the *flea* kind, juſt as it proceeds from the ſurface of the ſoil. When at a more advanced ſtage of its growth, it is expoſed to the more deſtructive attacks of the *green long-winged fly*, the *red ſpider*, and the *otter moth*. Lice are produced in large quantities by the former, in conſequence of their depoſiting their *ova* about the bottom parts of the plants, by which they are not unfrequently in a great meaſure deſtroyed; while the *larvæ* of the latter prey upon the roots from which the plants become weakly in their growth, and unhealthy. About the ſame time the *honey dew* is another morbid ſtate to which the hop-plant is expoſed, and by which it frequently ſuffers greatly. The *mould* or *fen* generally takes place at a rather later period, but is not leſs prejudicial in its attacks. The *blight* and *fire-blaſt*, to which hop crops are likewiſe ſubject, occur at different periods, but commonly towards the more late ſtages of the growth of the crops. All theſe different cauſes are extremely detrimental to the hop-planter, frequently proving ſuddenly deſtructive to his moſt promiſing crops. See BLAST and LIGHT, FLEA, HONEY-*dew*, LONG-WINGED FLY, MOULD, MILDEW, RED SPIDER, and OTTER-MOTH.

HOPS, *Diſeaſes of.* See FIRE-BLAST, FEN, HONEY-*Dew*, &c.

HOPS, *Uſe of.* In the ſpring time, while the bud is yet tender, the tops of the plant being cut off, and boiled, are eaten like aſparagus, and found very wholeſome and effectual to looſen the body; the heads and tendrils are good to purify the blood in the ſcurvy, and moſt cutaneous diſeaſes; decoctions of the flowers, and ſyrups thereof, are of uſe againſt peſtilential fevers; juleps and apozems are alſo prepared with hops, for hypochondriacal and hyſterical affections, and to promote the menſes.

Extract of hops, *extractum humuli*, is made by boiling down half a pound of hops in a gallon of boiling water to four pints, ſtraining the hot liquor, and evaporating it to a proper conſiſtence. It is introduced into the London Pharmacopœia, becauſe it is ſuppoſed to poſſeſs both a tonic and ſedative power combined.

A pillow ſtuffed with hops, and laid under the head, is ſaid to procure ſleep in fevers, attended with a delirium. But the principal uſe of hops is in the brewery, for the preſervation of malt liquors; which by the ſuperaddition of this balſamic, aperient, and diuretic bitter, become leſs viſcid, leſs apt to turn ſour, more detergent, more diſpoſed to paſs off by urine, and in general more ſalubrious. They are ſaid to contain an agreeable odorous principle, which promotes the vinous fermentation. When ſlightly boiled or infuſed in warm water, they increaſe its ſpirituoſity.

Hops, *Laws relating to.* By 43 Geo. III. c. 68. for every hundred weight of hops imported, ſhall be paid a duty of 3*l.* 5*s.*; and on exportation there ſhall be allowed a drawback of 4*l.* 4*s.*; and for every pound of Iriſh hops imported a duty of 2 *d.* (43 Geo. III. c. 69.) And foreign hops, landed before entry and payment of duty, or without warrant for landing, ſhall be forfeited and burnt; the ſhip alſo ſhall be forfeited, and the perſon concerned in importing or landing ſhall forfeit 5*l.* a hundred weight. (7 Geo. II. cap. 19.) Hops of Britiſh growth may be exported to Ireland; bond being firſt given to the commiſſioners of exciſe, that the ſaid hops ſhall not be relanded, and oath made before ſuch perſon as they ſhall appoint, that the duties have been duly charged; upon which the perſon exporting the ſame ſhall have a drawback of the duties before paid; and provided that ſuch hops ſhall be relanded, or put into any ſhip in Great Britain (except in caſe of ſhipwreck, or unavoidable accident), the ſame, or the value thereof, ſhall be forfeited, over and above the penalty of ſuch bond; and may be ſeized by any officer of the cuſtoms or exciſe. (26 Geo. III. c. 5.) And for every hundred weight of hops, grown in Great Britain, which ſhall be cured, and made fit for uſe, ſhall be paid by the owner or poſſeſſor thereof, a duty of 2½*d.* (43 Geo. III. c. 69.) By 9 Anne, cap. 12. hop-grounds are required to be entered, on pain of 40*s.* an acre. Places of curing and keeping are alſo to be entered, on pain of 50*l.* which may be viſited by an officer at any time without obſtruction, under the penalty of 20*l.* All hops ſhall, within ſix weeks after gathering, be brought to ſuch places to be cured and bagged,, on pain of 5*s.* a pound. The rebagging of foreign hops in Britiſh bagging for ſale or exportation, incurs a forfeiture of 10*l.* a hundred weight; and defrauding the king of his duty by uſing twice or oftener the ſame bag, with the officer's mark upon it, is liable to a penalty of 40*l.* The removal of hops before they have been cured, bagged, and weighed, and the duties aſcertained, incurs a penalty of 50*l.* Concealment of hops ſubjects to the forfeiture of 20*l.* and the concealed hops; and any perſon who ſhall privately convey away any hops, with intent to defraud the king and owner, ſhall forfeit 5*s.* a pound. And the duties are required to be paid within ſix months after curing, bagging, and weighing, on pain of double duty, two-thirds to the king, and one-third to the informer. No common brewer, &c., ſhall uſe any bitter ingredient inſtead of hops, on pain of 20*l.* Notice of bagging and weighing ſhall be ſent in writing to the officer, on pain of 50*l.* (6 Geo. cap. 21.) And tweny-four hours' notice ſhall be ſufficient, by 39 & 40 Geo. III. cap. 81 Officers ſhall make due returns to the commiſſioners, and leave a true copy with the planter, or owner, or forfeit 5*l.* 9 Anne, c. 12.

The owners of hops ſhall keep at their oaſts, &c., juſt weights and ſcales, permit the officer to uſe them, and aſſiſt in weighing, if required, on pain of 50*l.* A penalty of 100*l.* is inflicted for falſe ſcales and weights. No officer inferior to a ſuperviſor ſhall weigh hops between five in the evening and four in the morning, on forfeiture of 20*l.* (39 & 40 Geo. III. c. 81.) By the ſame, repealing the 14 Geo. III. c. 68. the owner or grower, before he begins to put any hops into a bag or pocket, ſhall mark on the outſide, in large legible characters, with durable ink or paint, his name and place of abode, on pain of forfeiting 50*l.* nor ſhall hops be bagged into any bag of greater weight than in the proportion of 10*lb.* for every 112*lb.* of the groſs weight of bag and hops, on pain of forfeiting 20*l.* The officer, after weighing, &c., hops for the purpoſe of charging the duty, ſhall mark in like manner on every bag or pocket the groſs weight, together with the year of growth, and the progreſſive number according to the number of bags charged to each owner or grower in each ſuch current year; counterfeiting ſuch marks incurs a penalty of 100*l.*; and wilfully defacing or obliterating them, or cauſing the ſame to be done, ſubjects to a forfeiture of 20*l* The owners are allowed to uſe caſks inſtead of bags, under the ſame regulations. (6 Geo. cap. 21.) No hops ſhall be removed from the place of weighing, until twelve hours next after bagging, weighing, &c., unleſs the ſame ſhall have been reweighed by the ſuperviſor; and if any additional weight ſhall be found, the ſame ſhall be charged with the duty; and if any owner or grower ſhall convey away any ſuch hops, contrary to the meaning thereof, he ſhall forfeit 50*l.* for every ſuch offence. (39 & 40 Geo. III. c. 81.) If any perſon ſhall mix with hops any drug to alter the colour or ſcent, he ſhall forfeit 5*l.* a hundred weight. If any perſon ſhall unlawfully and maliciouſly cut hop-binds growing on poles, in any plantation, he ſhall be guilty of felony, without benefit of clergy. 6 Geo. II. cap. 37.

Hop-*bag*, in *Agriculture*, the name of the ſack-cloth bag in which the ſtoved and dried hops are ſtuffed in order to their being ſold. There are two ſorts of cloth employed in this intention, according to the nature and quality of the hops; ſuch as are of a bright fine colour and a good ſample, being put into ſuch bagging as is of a fine kind, under the denomination of *pockets*; but thoſe which have a dark colour into a coarſe heavy kind, termed *bags*: the former of theſe ſorts of hops is employed for ales, and all the finer kinds of malt-liquors, but the latter chiefly for the brewing of porter. It is ſuggeſted that the coarſe ſort of bagging-ſtuff is the beſt, where the hops are to be kept for ſome length of time.

The neceſſary lengths of theſe ſorts of bagging are about two ells and a quarter for the *bag*, and nearly the ſame for the *pocket*, each of them having an ell in width. The firſt, or bags, when the hops are of a prime quality, well cured, and trodden into them with tightneſs, will weigh about two and a half hundred weight; but the latter, or pockets, when of Canterbury pocketing, only about one and a half hundred weight.

In caſes where the variations from theſe ſtandards are in any degree conſiderable, the preparation or ſample may be ſuſpected with propriety.

Hop-*baſket*, the name of a kind of large flat baſket employed for carrying the hops in, during the period in which they are picked.

Hop-*bin*, the name of the crib or bin, into which the hops, after being picked from the bind, are thrown. It is moſtly conſtructed merely in a temporary way, by fixing four or more pieces of boards upon as many upright poſts ſet firmly into the ground as a frame, by means of nails. When finiſhed, they ſhould be full ſeven or eight feet in length, three feet in breadth, and the ſame in height, the ſide pieces at the ends projecting as a ſort of handles. Each end has a ſupport, which riſes two feet above the top of the frame; on the tops of which reſts a ſtraight pole, the whole length of the frame, or rather more; the whole ſtructure having ſomewhat the reſemblance of a ſmall market-booth, without a covering; only that, in the place of the flat ſurface for the reception of the wares, there is a canvas bag adapted to the ſize of the frame, hung within, ſo as nearly to reach the ground, in order to receive the hops as they are picked from the ſtems. Such as are formed eight feet in length are uſually termed *bins*, and thoſe of four feet in length *half-bins*. The contrivances of this nature ſhould conſtantly be well proportioned to the number of pickers that are employed, in order to prevent the loſs of labour, which would otherwiſe take place.

Hop-*clover*, the common name of a plant of the clover kind, which grows naturally in moſt meadows and paſture lands of the more dry deſcriptions, commonly flowering towards June, or the following month. It has been adviſed of late as beneficial in laying lands down to ſward, when combined with other ſeeds of the graſs kind; and is aſſerted to afford an excellent fodder, when ſown on the lighter ſorts of ſoils. See Clover.

Hop-*dag*, a name given to a ſort of lever formed from a long piece of ſtrong round timber, having a kind of fixed fulcrum or reſt at the lower part, the end of which is ſet or ſhod with a ſtrong piece of toothed iron, which firmly graſps and holds the bottom end of the hop-pole, when, by the action of the lever, the hop-pole is wrenched up from the ground, and much labour ſaved.

Hop-*harrow*, a name given to a ſort of harrow that is employed after the nidget by different hop cultivators, in order to bring the ſoil into a very fine ſtate of mould. It is conſtructed pretty much in the form and on the principle of the nidget, having only a ſmall wheel fixed in the front of it, in order to turn round at the ends of the rows, with more facility than would otherwiſe be the caſe. It is guided in the intervals or alleys, and the bruiſing of the binds prevented, by having a pair of handles faſtened on behind, and held by a man. The tool complete coſts about two guineas. An implement of this ſort is ſtated in the Middleſex Report to have there been found highly beneficial in the practice of Mr. Maynard; it is ſo conſtructed as to have ſomewhat the form of the ſnow-plough, being an equilatural triangle, the ſides of which are four feet in length, and the front ones ſhod with old ſcythes; the whole being ſtrongly framed and put together, that it may bear to be loaded when it is made uſe of in the work.

It is ſuggeſted that, by drawing this tool once in a place in the intervals between the rows of plants, it is capable of rendering them "perfectly clean, and as ſmooth as the well rolled walk of a pleaſure ground," beſides, earthing up the rows in the ſame operation, which, in about ten days or a fortnight afterwards, may be readily formed by means of ſpades, into hills for the reception of the plants.

Hop-*hovel*, a term applied to a ſmall building or place of ſhelter, in which the buſineſs of picking the hops from the binds may be executed with convenience, in caſes in which the plantations are at ſome conſiderable diſtances from the houſes of the proprietors. In this way labour and expence may often be ſaved to the hop farmer.

Hop-*horn-beam*, in *Gardening*. See Carpinus.

Hop-*nidget*, a name given to a tool formed in a ſomewhat triangular manner, but of different dimenſions according to the diſtances of the alleys or intervals in which it is to be employed, having croſs bars or beams into which are fixed a number of hoes, proportioned to the breadths of the intervals in which they are to work, in ſuch a manner that the hinder part, which is the wideſt, may paſs along without doing any ſort of miſchief to the binds on the different ſides of it. A pair of handles is fixed to it behind by means of which it is directed in the execution of its work. It is uſually drawn by a ſingle horſe and managed by a boy; and in this ſtate is capable of cleaning two acres in the courſe of the day. In making uſe of it, care ſhould be taken that in completing the labour, the intervals or alleys be all gone over or croſſed in the ſame line of direction; as by this means every part of the ſurface, except the portions occupied by the hills, may be effectually cut over. The ſpaces forming the hills muſt afterwards be cleaned and rendered free from weeds by hand-hoeing. This tool ſhould continue to be made uſe of occaſionally as there may be neceſſity, until the hop plants begin to branch out in ſuch a way as to impede the paſſage of the horſe in the alleys or intervals of the rows. In this mode hop-plantations are capable of being kept in a clean condition and perfect order, at much leſs expence than by means of hand labour, either by the hoe, or digging over in the ſummer ſeaſon. The principal circumſtance that requires to be attended to in the nidget management of hop-grounds is that of preventing the binds from being injured, by the tool coming too much in contact with the poles during the performance of the work.

Hop-*oaſt*, the name of a ſort of oven or kiln in which the hops, after being ſeparated from the binds, are ſtoved or dried by being expoſed to proper degrees of heat under the direction of a perſon who has the excluſive management of the buſineſs. See Oast.

Hop-*peeler*, a term applied to a tool contrived for the purpoſe of forming the holes for ſetting the hop-poles in, in grounds of this kind; and which is a ſort of ſtrong iron crow, with a firm wooden handle placed croſſways at the top, and made thick and tapering to a point at the bottom part, ſo as to readily remove the earth and make way for the inſertion of the lower ends of the hop-poles, into the ſolid ground, in order to their ſtanding firmly for the ſupport of the binds.

Hop-*picker*, a term applied to the perſon who is employed in picking the hops from the binds, as ſoon as they are in a ſtate of maturity for the purpoſe. Numbers of people are engaged in this ſort of work in large hop-grounds.

Hop-*poles*, the name of the poles or ſtrong ſtakes which are forced into the firm ground for the purpoſe of the hop binds climbing up and twiſting round them, in order to their being ſupported and kept from trailing upon the ground. Poles of this kind are daily becoming more ſcarce and expenſive. In the account of the rural economy of the ſouthern counties of the kingdom, it is ſtated, that "the ſpecies of woods in uſe for hop poles are various. Formerly they depended much on the natural growth of the coppice woods of the country. But of late years, it has been the practice to make plantations for the eſpecial purpoſe of hop poles."

They are aſſerted to be held in eſteem by the planters of theſe diſtricts, ſomewhat in this order:

1ſt Cheſnut,
2d Aſh,
3d Sallow,
4th Red-willow,
5th Birch,
6th Maple,
7th Oak,
8th Hornbeam,
9th Beech.

Beſides theſe the alder, or œwler, the brown willow, and ſome other ſimilar ſorts of light woods, make excellent hop poles.

It has been hinted, by an intelligent hop cultivator, that the hop, as well as other climbing plants, may have a predilection or choice of particular woods as ſupporters; and that a rough ſoft bark may be preferred by them, to one which is more ſmooth and poliſhed. That of the maple is particularized, as its bark is peculiarly "ſoft and warm;" it being noticed that when the morning has been cold, the ſenſitive leader of a tender or freſh-poled vine has reclined its head againſt the velvet bark of the maple, while others held their's aloof, from chilly ſmooth barked poles. It is probable, that this may be a general law or ordinance of nature, among climbing plants, and may be eſſential to their preſervation, exhibiting, in a moſt palpable way, "the perception and ſtrength of vegetable inſtinct." Theſe plants, it is likewiſe well known, have their inſtinctive choice or predilection with regard to the thickneſs of the articles of their ſupport; being found to embrace with greater readineſs a pole that is not of too great thickneſs, than one which is of much thickneſs towards the bottom part. The uſual circumference of poles, at the butt-ends, may be rated at from about ſix to nine inches, tapering up to the top, where they are moſtly about the ſize of a ſtrong walking ſtick. The length is commonly about fifteen or twenty feet, but ſometimes more different ſorts of ground require poles of very different lengths. In the rich fertile hop grounds in the vicinity of Maidſtone, in Kent, the poles of grown hops uſually ſtand from about fourteen to ſixteen feet above the ſurface of the hills, and have from eighteen inches to two feet below the ſurface of the ground. But on grounds of leſs ſtrength, the poles are not found to riſe more than ten or twelve feet in height. For this reaſon, a variation of the quality of the ground is beneficial, as the poles, by rotting and decaying at the bottom parts, become ſhorter, and, after a few years, get too ſhort for ſtrong vines in rich ſtrong land. Yet it is not the cuſtom for them to be ſold or removed to leſs productive hop grounds for the ſupport of vines which have an inferior growth and luxuriance.

In theſe diſtricts it was found that the prices of hop poles varied, in 1790, from fourteen to forty ſhillings the hundred, in proportion to the ſize and quality of them; being commonly ſorted under three diviſions; *firſts*, *ſeconds* and *thirds*: but in 1797 they became conſiderably lower, "prime poles being then thirty ſhillings." They have, however, been conſtantly upon the advance ſince that period, and are at preſent become both extremely ſcarce and dear. The cuſtom with the new poles is occaſionally to have the bark ſhaved off, under the notion that it ſaves them from the worm; but ſome hop planters ſuppoſe that there is a warmth in the bark which is agreeable to the young vines; and though in two or three years the bark may drop off naturally, the ſurface of the wood, in the courſe of that time, has acquired a degree of ſoftneſs. Allowing a hard, ſmooth poliſhed pole to be unfriendly to the hop, it would obviouſly be improper to peel the poles.

In ſharpening or pointing the bottom ends of hop poles, it is uſual for the light ſhort ones to be done in the hand without any ſupport being required; but ſuch as are tall and heavy ſtand in need of ſome ſort of contrivance to keep them ſteady and upright. This is generally afforded by the ſimple contrivance of tying three poles of equal lengths together, at two or three feet diſtance from their tops, and then ſetting them up in the form of a ſort of triangle. This receives the top of the pole which is to be ſharpened between the points or horns of the triangle, and affords the neceſſary ſtay to it; there being a block of wood placed ſuitable below to work upon. It is common for this ſort of labour to be performed on new as well as old poles, before they are *ſtacked* up or ſet in piles; though occaſionally only juſt before the time of uſing them. It is uſual, in pointing ſuch poles as have been already in uſe, to ſtrike off the portions which have ſtood in the ground where they appear much decayed, and point the ſound parts above. But where ſuch bottom parts continue firm and ſound, they are re-ſharpened for another crop.

The ſtacking up of the poles is a buſineſs that is beſt performed immediately after the picking of the hops has been finiſhed. It is univerſally the practice, in the diſtrict of Weſt Kent, to ſet up the poles in a kind of conical piles containing from two to five hundred each. This is effected by three ſtout poles of equal lengths, being bound together a few feet from their tops, and their legs ſpread out ſo as to ſtand firmly. This forms the ſupport and ſtay of the pile while it is building, and afterwards; the poles being regularly dropped in on each ſide between the points of the three poles firſt ſet up, ſo as to be equal on every ſide, as on this the ſtability of the ſtack depends. The ſlope and diameter of the baſe of a pile is variable according to the length and number of poles which are ſet up together. A ſtack of three or four hundred of the long poles, met with about Maidſtone, will take up a circle of near twenty feet in diameter. It ſhould, however, be noticed, that the bottoms of the poles do not form one entire ring; but are collected into a ſort of bundles or diſtinct parcels, moſtly from three to ſix or eight in number; each portion being bound tightly together a few feet diſtant from the ground, by means of a ſtrong band formed from the twiſted vines, by which the wind is prevented from ſeparating the poles; and at the ſame time the openings between the ſeveral parcels give paſſage to violent blaſts, and prevent in ſome meaſure the piles from being wholly thrown down; an accident, however, which rarely occurs in ſuch grounds as are tolerably ſcreened. But, in high expoſed ſituations, where quantities of theſe poles are often piled up for ſale amongſt the planters, it is no unuſual thing for the piles to be blown down, to the utter deſtruction of ſheep and other animals ſheltering underneath them.

The continuance or laſting of hop poles depends greatly on the ſort of wood which is in uſe and the time of its growth, as well as in ſome meaſure the quality of the ſoil, and the expoſure in which it has grown. Cheſnut poles of eighteen or twenty years growth, are in general eſteemed the moſt durable of any. It has been confidently aſſerted, that a hop pole of this ſort has been employed in a hop ground for upwards of thirty years; but the uſual duration of poles is from about five to twelve years; or thereabouts. When the poles become no longer uſeful for the ſtrong growing plants, they are moſtly either transferred to thoſe of leſs growths, or laid by for uſe in young plantations, being ultimately converted to the purpoſes of fire wood, or the making of charcoal for being mixed with the coke of coal in drying the produce. They are worth about five or ſix ſhillings the hundred in each of theſe views.

The annual expence of poles, taking the new ones at thirty ſhillings, the number made uſe of at three thouſand per acre, their duration eight years, and the value of the old refuſe ones at five ſhillings the hundred, was formerly about five pounds the acre; but at preſent it is in all probability nearly, if not quite, double that ſum. On account of this great expence of poles, and its chiefly ariſing from the decay of the parts inſerted into the ground, and the miſchief that frequently happens on their being broken off at the ſurface of the ground, in the time the crop is ripening, it would ſeem to be a deſirable object to prevent the deſtruction of that part as much as poſſible. In order to effect this, *charring* the parts has been recommended as a deſirable plan, eſpecially thoſe parts which are expoſed between the air and moiſture cloſe to the ſurface of the ground, as the decay generally commences in theſe places the firſt. See Charring *Poſts*.

Hop-*ſhim*, the name of an implement of the ſhim kind uſed in hop-grounds, and conſtructed with a ſtrong frame, ſomewhat in the way of the common wheel-barrow, having feet or teeth which cut up or drag out all ſuch weeds as may infeſt the land, while they break it down and render it fine at the ſame time. According to the Report of Kent, this is a ſort of tool that may be alſo beneficially employed in clearing ſummer fallows from weeds. When properly conſtructed it coſts about a couple of guineas. It has great power in working-over land when well managed. See Shim.

Hop-*tree*. See Holly.

Hop-*trefoil*, a common name often applied to a plant of the trefoil kind, and ſometimes to that of hop-clover. See Trefoil.

Hop, *Wild*. See *Shrub* Trefoil.

HOPE, in *Ethics*, is the deſire of ſome good, attended with a belief of the poſſibility, at leaſt, of obtaining it, and enlivened with joy, greater or leſs, according to the greater or leſs probability of our poſſeſſing the object of our hope. Alexander, preparing for his Aſian expedition, diſtributed his hereditary dominions among his friends; allotting to ſome villages, to others boroughs, to others cities; and being aſked what he had reſerved for himſelf, replied, *Hope*.

Pindar, as cited by Plato (De Repub. l 5.) calls hope the nurſe of old age. It was virtue, according to Cicero, that inſpired the hope of immortality, and that ſame immortality animated hope. There is nothing melancholy, ſays he, (De Senect. c. 1.) in death, which leads to immortality. The heathens deified hope. Cicero (De Leg.) ſpeaks of one of the temples of this goddeſs. Livy mentions that which ſtood in the market for herbs, and of another which Publius Victor erected to her in the ſeventh region. M. Fullius, the cenſor, erected another to her near the Tiber. The Greeks alſo worſhipped this divinity under the appellation Ελπις, *Elpis*. Hope is repreſented upon ſome ancient monuments, but oftener upon the medals of the emperors, ſometimes with theſe words, "Spes publica," "Spes populi Romani;" ſometimes with a cornucopia, or with flowers and fruits, or a bee-hive. We find her often with one hand reſting upon the altar, which M. Aurelius Pacorus dedicated to her. As ſhe had her temples and altars, ſhe had alſo, without doubt, her ſacrifices; but antiquity gives us no account of the victims that were offered to her.

HOPE, in *Geography*, a river of Jamaica, which runs into the ſea; five miles S. of Kingſton.—Alſo, a large bay at the N.E. corner of Nootka ſound, between "Point Breakers," N. lat. 49 15. E. long. 233° 20', and "Woody Point," N. lat. 50°. E. long. 232°.—Alſo, a bay in the Engliſh channel, on the coaſt of Kent, between Sandwich and Ramſgate.—Alſo, a harbour on the W. coaſt of Quadra and Vancouver's iſland, in the N. Pacific ocean.—Alſo, a ſmall iſland near the coaſt of Rhode iſland, in America.—Alſo, two ſmall iſlands, near the N.E. coaſt of New Holland, ſo called by captain Cook, when his ſhip was reſcued from its imminently perilous ſituation off cape Tribulation. S. lat. 15° 41'. W. long. 214° 36'.—Alſo, a Moravian ſettlement in Wachovia, North Carolina, in Surry county, where the united brethren have a meeting.—Alſo, a townſhip in the county of Durham, Upper Canada, W. of Hamilton, and fronting lake Ontario.

Hope's *Advance Bay*, a bay in Hudſon's ſtrait; 100 miles W. of Chidley.

Hope's *Noſe*, a cape in the Engliſh channel, on the coaſt of Devonſhire. N. lat. 50° 28'. W. long. 3° 27'.

HOPEA, in *Botany*, ſo named by Dr. Garden, and adopted by Linnæus, in honour of their mutual friend the late Dr. John Hope, profeſſor of botany at Edinburgh, who died in 1786. This gentleman richly deſerves commemoration, as being one of the earlieſt lecturers on the vegetable phyſiology, as well as an experienced practical botaniſt. Thoſe who knew his perſonal merits, will readily accede to any thing that may ſerve to embalm ſo worthy a name. The genus originally choſen for this purpoſe has proved unfortunate, being now, juſtly we believe, referred by l'Heritier to *Symplocos*. See Tr. of Linn. Soc. v. 1. 176, and Willd. Sp. Pl. v. 3. 1436. It is ſingular that the Linnæan *Alſtonia*, named by Mutis after Dr. Hope's predeceſſor, ſhould have preciſely the ſame fate, being alſo a *Symplocos*. We are therefore obliged to admit as *Hopea* a little inconſiderable Eaſt Indian plant, which Willdenow and Vahl have ſo denominated, though we are by no means ſatisfied of its being diſtinct from *Exacum*. Dr. Buchanan had deſtined the *Dipteroſpermum* of the younger Gærtner to commemorate his friend and preceptor, and it is much to be wiſhed that ſo fine a genus had been adopted as *Hopea*.—Vahl. Enum. v. 1. 3. Willd. in Nov. Act. Soc. Amic. Hiſt. Nat. Berol. v. 3. 435. *Vahl*—Claſs and order, *Monandria Monogynia*. Nat. Ord. *Rotaceæ*, Linn. *Gentianæ*, Juſſ.

Gen. Ch. *Cal*. Perianth inferior, in four deep, lanceolate, ſpreading, equal ſegments. *Cor*. of one petal, funnel-ſhaped; tube ſhort inflated; limb in four equal, ſpreading, or reflexed ovate ſegments. *Stam*. Filaments two, inſerted into the tube, very ſhort, linear, oppoſite, one of them ſhorteſt and barren; anther ſolitary, globoſe, two-lobed. *Piſt*. Germen ſuperior, roundiſh; ſtyle cylindrical, very ſhort; ſtigma capitate, globoſe. *Peric*. Capſule roundiſh, of two valves and one cell. *Seeds* numerous, minute.

Eſſ. Ch. Calyx in four deep equal ſegments. Corolla of one petal, funnel-ſhaped, four-cleft, equal. One barren ſtamen. Capſule with two valves, one cell, and many ſeeds.

1. H. *dichotoma*. The only ſpecies gathered by the Rev. Dr. Rottler at Tranquebar. We have never ſeen a ſpecimen, but a drawing communicated by Lieut. Col. Hardwicke, as the *Exacum puſillum* of Roxburgh, anſwers ſo well to the deſcription in Vahl, that we have no doubt concerning it. This is a ſmall, ſmooth, pale, annual, fibrous-rooted plant, flowering in December. The *ſtem* is from one to three inches high, branched, forked, leafy, ſlender, ſquare, with membranous angles. *Branches* alternate or oppoſite, ſpreading. *Leaves* oppoſite, ſeſſile, ſmall, acute, entire, three-ribbed; the lower ones ovate, upper ones gradually narrower, and uppermoſt awl-ſhaped. *Flower-ſtalks* very ſhort, ſolitary in the forks of the branches, three together at the extremities. *Flowers* ſmall, yellow, with a pale tube. *Seeds* red.

If the capſule be really of one cell, and the ſtamens conſtantly two, one of them barren, this plant may poſſibly conſtitute a good genus; but in our drawing the capſule appears of two cells, and on the whole we are more diſpoſed to think it an *Exacum*, notwithſtanding the peculiarity of the ſtamens.

HOPEWELL, in *Geography*, a townſhip of America, in Cumberland county, New Brunſwick, on Chepodil river, which runs into a northern arm of the bay of Fundy, and is navigable for four or five miles.—Alſo, the name of three townſhips in Pennſylvania; *viz.* in York, Huntingdon, and Waſhington counties.—Alſo, a townſhip in Hunterdon county, New Jerſey, on Delaware river, 14 miles W. of Princeton, and 11 above Trenton. In 1790 it contained 2320 inhabitants.—Alſo, a townſhip in Cumberland county, New Jerſey.

Hopewell *Head*, a cape in Hudſon's bay. N. lat. 58° 10'. W. long. 78°.

HOPFGARTEN, a town of Germany, in the archbiſhopric of Salzburg; 38 miles S.W of Salzburg.

HOPITAL, L', a town of France, in the department of Mont Blanc, and chief place of a canton, in the diſtrict of Chambéry. The place contains 662, and the canton 8346 inhabitants, on a territory of 157½ kiliometres, in 15 communes.—Alſo, a town of France, in the department of the Rhône and Loire; 17 miles S. of Roanne.—Alſo, a town of France, in the department of the Lot; 24 miles N.E. of Cahors.

HOPKINS, John, in *Biography*, one of the principal verſifiers of the pſalms at the time of the Reformation, with Sternhold. Theſe were the fathers of metrical pſalmody in our country, equally injurious to the divine poetry of the pſalmiſt, and to the compoſition of ſacred muſic. The melodies to which theſe verſions are ſung, were chiefly German. See Psalmody.

Hopkins, Ezekiel, was born at Sandford, in Devonſhire, about the year 1633. In 1649, he became a choriſter of Magdalen college, Oxford, and after he had taken his degree of B.A. in 1653, he was appointed uſher of the adjoining ſchool. In 1669, he went to Ireland as chaplain to lord Roberts, afterwards earl of Truro, who was appointed lord lieutenant. He married his lordſhip's daughter, and was made dean of Raphoe. Upon his return to England, lord Roberts recommended him ſo ſtrongly to his ſucceſſor lord Berkley, that, in 1671, he was conſecrated biſhop of Raphoe, from which ſee he was tranſlated, in 1681, to that of Londonderry, where he continued till the war which broke out between the ſupporters of the revolution, under king William, and the partiſans of king James, headed by the earl of Tyrconnel, when he retired to England. He was now choſen miniſter of Aldermanbury, where he ſhortly after died, at the age of fifty-ſeven. After his death, his poſthumous works were publiſhed in one volume folio. His moſt valuable piece is "An Expoſition of the Lord's Prayer," firſt printed in 4to. in 1692, to which were afterwards added ſermons on Providence, and the advantage of reading and ſtudying the holy ſcriptures. Gen. Biog.

Hopkins, William, a learned divine of the church of England, was born at Monmouth in the year 1706. He received the elements of a learned education at his native town, whence he was ſent to All-Souls, Oxford, in the year 1724. He was admitted to deacon's orders in 1728, and in the following year undertook the curacy of Waldron, in Suſſex. In 1731, he was preſented to the vicarage of Bolney, in the ſame county. In 1753, he publiſhed anonymouſly, "An Appeal to the Common Senſe of all Chriſtian People, more particularly the Members of the Church of England, with regard to an important Point of Faith and Practice, impoſed upon their Conſciences." This piece excited much attention, and created no little alarm among the believers in the doctrine of the Trinity. Many anſwers were written, but at length Dr. Thomas M'Donnell wrote an octavo volume againſt the principles contained in the "Appeal," to which Mr. Hopkins replied. The controverſy was carried on many years, and our author publiſhed other tracts on the ſame ſubject. In 1756, he was elected maſter of the grammar ſchool of Cuckfield, without any other conditions than that of taking the oaths to government. In the year 1766, Mr. Hopkins undertook the curacy of Slaugham, and continued to officiate there many years, and in his own pariſh of Bolney, upon what he judged to be the goſpel plan. He was an active and zealous promoter of a petition to parliament for relief, in the matter of ſubſcription to the liturgy and thirty-nine articles of the church, and put forth ſome able works in defence of the cauſe. The laſt piece which he ſent to the preſs was "Exodus, a corrected Tranſlation, with Notes critical and explanatory." This was in the year 1784; almoſt immediately after this, Mr. Hopkins's health began to decline, and his mental faculties were greatly impaired before his deceaſe, which happened in 1786, when he had attained to his eightieth year. Mr. Hopkins was an Arian in his religious faith, and admitted the lawfulneſs of praying to Jeſus Chriſt, but he could not join in the invocations to him as being himſelf God. Mr. Hopkins was poſſeſſed of great knowledge in the original languages of the ſcriptures, and was a moſt diligent ſtudent in theology.

Hopkins, or *Hopkinſville*, in *Geography*, a townſhip of Caledonia county, in Vermont.

HOPKINTON, a townſhip of Middleſex county, Maſſachuſetts, incorporated in 1715, and containing 1372 inhabitants. The rivers Concord and Providence receive each a branch from this townſhip; and theſe ſtreams furniſh ſeats for ſeven or eight griſt-mills, a number of ſaw-mills, iron-works, &c.—Alſo, a townſhip in Waſhington county, Rhode iſland, on the W. line of the ſtate, on ſeveral branches of Pawcatuck river; containing 227 inhabitants.

HOPLITES, Hoplitæ, formed of ὁπλον, *armour*, in *Antiquity*, were ſuch of the candidates at the Olympic and other ſacred games as ran races in armour.

One of the fineſt pieces of the famous Parrhaſius, was a painting which repreſented two hoplites; the one running, and ſeeming to ſweat large drops; the other laying his arms down, as quite ſpent, and out of breath. Pliny, lib. xxxv. cap. 10. and Paſchal De Coronis, lib. vi. cap. 14.

HOPLITIS Lapis, in *Natural Hiſtory*, a name given by ſome of the writers among the ancients to a ſtone of a ſhining braſs-like appearance, looking like the ſurface of a poliſhed braſs armour worn in thoſe times. It is eaſy to conclude, from this account, that the hoplites was one of our mundics.

HOPLITODROMOS, formed of ὁπλον, *armour*, and δρεμω, *I run*, in the ancient gymnaſtic ſports, a term applied to ſuch perſons as went through thoſe toilſome and robuſt exerciſes, in complete armour; by which the exerciſe became much more violent, and the wearing of armour, in the time of battle, much more eaſy.

HOPLOCHRISMA, a term uſed, by the ancient writers in *Medicine*, for the anointing a ſword, or other weapon, with which a perſon had been wounded, in order to the curing of the wound; ſo early was the idle notion of curing by ſympathetic remedies received into the world. Some late authors have alſo uſed the word in a very different ſenſe, namely, for the anointing the points of darts or ſwords with poiſonous ingredients in order to render the leaſt wound given with them fatal; a practice moſt known, as it is ſaid, among the ſavage inhabitants of America.

HOPLOMACHI, Οπλομαχοι, compoſed of ὅπλον, *armour*, and μαχομαι, *I fight*, in *Antiquity*, were a ſpecies of gladiators, who fought in armour; either completely armed from head to foot, or only with a caſque and cuiraſs.

HOPPER, a veſſel wherein ſeed-corn is carried at the time of ſowing.

The word is alſo uſed for that wooden trough in a mill, into which the corn is put to be ground.

HOPPET, in *Mining*, is a ſmall hand-baſket or whiſket uſed for holding and carrying ore, &c. It alſo means a ſquare or oblong diſh or box of wood, narroweſt at the bottom, holding 14 or 16 pints, which is uſed, level full, in the meaſuring of lead ore by the bar-maſters, in the low and high peaks or hundreds of Derbyſhire.

HOPPLE, a term applied to different animals, as the horſe, ſheep, &c. which ſignifies the fettering or reſtraining of them, by tying their two fore legs to gether with a ſhort ſtrong ligature or band of ſome ſort or other.

HOPTON, Arthur, in *Biography*, an Engliſh mathematician, was ſon of ſir Arthur Hopton, and born in Somerſetſhire. He was educated at Lincoln college, Oxford, and after taking his degree of B.A., removed to the Temple, where he lived in habits of friendſhip with the learned Selden. He died in 1614, a very young man, not having attained to more than his twenty-ſixth year. He wrote a treatiſe on the "Geodetical Staff"; "The Topographical Glaſs, containing the Uſes of that Inſtrument, the Theodolite, Plane Table, and Circumferentor"; "A Concordance of Years, containing a new and a moſt exact Computation of Time, according to the Engliſh Accompt;" "Prognoſtications for the Year 1607 and and 1614."

Hopton, Susanna, an ingenious lady, was deſcended from an ancient family in Staffordſhire, and was born in 1627. In her youth ſhe was drawn over to the church of Rome, but ſubſequent enquiry reſtored her to the Proteſtant communion. She died at Hereford in 1709; as an author, ſhe is known by ſeveral books on practical piety, and by an hexameron or meditations on the ſix days of the Creation, &c.

HOQUETUS, Hochetus, or *Hocetus*, a term uſed in the old Latin tracts, and in the cenſures of muſic by the heads of the church and grave divines, ſeems to imply a fantaſtical diviſion, which by the ſudden leaps and breaks, or diſcontinuity of voice, reſembled a hiccup, in French *hoquet*. "They interſect the melodies with hoquets, ſlide about in diſcant, and ſometimes even crowd and load the chants with vile third and fourth parts, triplis et motetis vulgaribus."

HOR, in *Scripture Geography*, a mountain of Arabia Petræa, on the confines of Idumæa. Here Aaron died and was buried. See Aaron.

HORACE, Quintus Horatius Flaccus, in *Biography*, one of the moſt celebrated of the Roman poets, was born at Venuſium in the year 65, B.C. His father was the ſon of a freed-man, and followed the employment of a tax-gatherer; but notwithſtanding the meanneſs of his origin, he felt the importance of a good education, the advantages of which he reſolved his ſon ſhould enjoy. He accordingly took him to Rome, and cauſed him to be inſtructed in all the branches of knowledge which were taught to young people at that time. At the age of eighteen he was ſent to Athens for the purpoſe of purſuing philoſophy and Greek literature, which was become faſhionable among the Romans. While he was in that city he was noticed by Brutus, who took him into his army and made him tribune: but Horace was more diſtinguiſhed by his wit than illuſtrious for his valour, and at the battle of Philippi he is ſaid to have thrown away his ſhield and fled. He was now reduced to great difficulties, even to a ſtate of indigence, having nothing to depend on but his literary talents. He recommended himſelf to Virgil, who obtained for him the patronage of Mecænas. To this patron of letters he rendered himſelf ſo agreeable that he made him his familiar companion, and took him to Brunduſium, in that journey which he has ſo well deſcribed in verſe. Mecænas procured from Auguſtus the reſtitution of Horace's eſtate, which he had forfeited by the part that he took in the war under Brutus, and introduced him to the emperor, who became greatly attached to him, and would have made him his private ſecretary, but the poet declined this high honour, preferring the independence of a private life to the buſineſs of a court. Having no ambitious views, and deteſting parade and ſplendour, he determined to remain his own maſter. In the latter part of his life he retired to the country, where he indulged himſelf in philoſophical eaſe, which he has admirably deſcribed in his odes. He died eight years before the Chriſtian era, and was buried near his friend and patron Mecænas, whoſe death is ſaid to have haſtened his own. He appears to have had many friends among perſons of rank, whom he addreſſed with eaſy familiarity, and he was ready to do friendly offices in the way of advice and recommendation. No ancient writer has been ſo popular as Horace: the variety of his manner, and of the ſubjects treated of, has rendered him the favourite of the moſt different taſtes. His odes are models of that kind of compoſition in the Latin language. His *Epiſtles* and *Satires* abound in moral maxims expreſſed with vigour; in acute obſervations on human life, and in pleaſant ſtories related with eaſe and vivacity. The *Art of Poetry* diſplays much ſound ſenſe and good taſte, but the precepts contained in it are deſultory and without method. The beſt editions of this author are thoſe of Lipſ. 1752; and of Glaſgow in 1744: but the impreſſions of Horace are ſo numerous as to defy enumeration. The tranſlation by Francis is highly eſteemed.

HORADADA, in *Geography*, a river of South America, which runs into the Caribbæan ſea; 50 miles E. of Cape Aguja.

HORADNIC, a town of Auſtrian Poland, in Galicia; 60 miles N.W. of Zytomiers.

HORÆA, ‘Ωραια, in *Antiquity*, ſolemn ſacrifices, conſiſting of fruits, &c. offered in ſpring, ſummer, autumn, and winter, that heaven might grant mild and temperate weather These, according to Meurſius, were offered to the goddeſſes, called ‘Ωραι, *i. e. Hours*, who were three in number, attended upon the ſun, preſided over the four ſeaſons of the year, and had divine worſhip paid them at Athens. Potter, Archæol. Græc. lib. ii. cap. 20, tom. i. p. 430.

HORAIDAN, in *Geography*, a town of Perſia, in Farſiſtan; 84 miles N.W. of Schiras.

HORAPOLLO, or Horus Apollo, in *Biography*, an Egyptian grammarian, who taught firſt at Alexandria, and afterwards at Conſtantinople in the time of Theodoſius. There remain of his, two books on the Egyptian Hieroglyphics, printed by Aldus in Greek, in 1505. They were afterwards tranſlated into Latin, and ſeveral times reprinted. The beſt edition is that of de Pauw, Gr. and Lat. with notes, Utrecht, 1727, 4to.

HORARY, ſomething relating to *horæ*, *hours*. See Hour

Horary *Circle of the globe*. See Circle.

Horary *Circles*. See Hour-*circles* and Circle.

Horary *Circles*, or *lines*, in *Dialling*, are the lines or circles which mark the hours on ſun-dials.

Horary *Motion of the earth*, is the arc it deſcribes in the ſpace of an hour.

This is nearly fifteen degrees; for the earth completes its revolution through 360° in a day, or twenty-four hours, and the twenty-fourth part of 360 is 15; though this is not the exact meaſure of the horary arc, becauſe the earth moves with different velocity, according to its greater or leſſer diſtance from the ſun; but it is near enough for ordinary computations. See Equation *of time.*

HORATII, in *Biography*, the name of three brothers who diſtinguiſhed themſelves in the Roman hiſtory, and who fought againſt the three Curiatii of Alba in the year 667 B.C. Two of them were ſlain, but the third ſlew all his antagoniſts. On his return to Rome he met his ſiſter, who had been betrothed to one of the Curatii, and reproaching him for what he had done, he ſlew her alſo. His great ſervices to his country were conſidered as an extenuation of his crime. Univer. Hiſt. See Curiatii.

HORAWER, in *Geography*, a town of Hindooſtan, in Bahar; 42 miles S.W. of Arrah.

HORAZDIOWITZ, a town of Bohemia, in the circle of Prachatiz, ſituated on the river Ottawa; 22 miles N.W. of Prachatiz.

HORB, a town of Germany, in the county of Hohenberg, ſituated on the Neckar, having a conſiderable trade in woollen goods; 28 miles S.W. of Stuttgart.

HORBY, a town of Sweden, in the province of Skone; 24 miles S.W. of Chriſtianſtadt.

HORCA, a river of Sweden, riſing in the mountains bordering on Norway, and running into the Regunda at Lit, in Jamtland.

HORCAJADA, a town of Spain, in the province of Leon; 40 miles E. of Civdad Rodrigo.

HORCAJO, a town of Spain, in New Caſtile; 27 miles S.S.W. of Hueta.

HORCAN, a mountain of Grand Bukharia, S. of Balk.

HORCUS Lapis, the name of a ſtone mentioned by the writers of the middle ages as uſeful in ſoldering ſilver and other metals. All the deſcription they give of it is, that it was black, and was eaſily reduced to powder. It was called alſo catemia.

HORD, Horda, a Tartarian term, and literally denoting a *multitude*, in *Geography*, is uſed for a company or tribe of wandering people, which have no ſettled abode or habitation, but ſtroll about, dwelling in chariots, or under tents, to be ready to ſhift as ſoon as herbage, fruits, and the preſent province is eaten bare.

Hord is more properly the name which the Tartars, who inhabit beyond the Wolga, in the kingdoms of Aſtracan and Bulgaria, give to their villages.

A hord conſiſts of fifty or ſixty tents ranged in a circle, leaving an open place in the middle. The inhabitants of each hord uſually form a military company or troop; the eldeſt whereof is commonly the captain, and depends on the general or prince of the whole nation.

HORDEATEM, a liquid medicine, made of barley, boiled till it burſt.

Sometimes other ingredients are added, as the cold ſeeds, almonds, and the like.

HORDEOLUM, or Stye, ſignifies, in *Surgery*, a ſmall tumour ſituated upon the edge of the eye-lid, and ſeldom exceeding a barley corn in ſize, from which laſt circumſtance the former appellation has been derived. According to Scarpa, ſties originate particularly, often towards the inner canthus. A ſwelling of this ſort is very circumſcribed, and preſents itſelf either in an inflamed, or a ſuppurating ſtate, or elſe as a mere indurated tumour, unaccompanied by inflammation.

An inflamed ſtye is commonly very red and painful, and bears a cloſe reſemblance to a little boil, or an inflamed encyſted tumour. Richter ſuſpects, that a ſtye is ſometimes one of the glands of Meibomius in a ſtate of inflammation. The diſeaſe is in general quite of a local nature, although the circumſtance of ſome perſons being particularly often troubled with the complaint has given riſe to ſuſpicions of there being occaſionally a conſtitutional or internal cauſe. Both Richter and Scarpa concur in imputing the frequency of ſties in particular ſubjects to a foul diſordered ſtate of the alimentary canal, induced by improper food, the abuſe of ſpirits, &c. We will not pretend to decide concerning the truth of this ſtatement, nor about the connection, which the firſt of theſe writers deſcribes, as occaſionally exiſting between the menſes, the cure of the tinea capitis in children, &c. and the origin of ſties.

The cure of an inflamed ſtye requires the employment of external emollient applications, or ſuch as promote ſuppuration. The tumour always ſuppurates, and the ſooner it is made to do ſo, the more quickly is the patient freed from all inconvenience. Attempts to diſperſe the ſwelling are, for the moſt part, unavailing, or if the inflammation is reſolved, the ſtye is ſtill left in an indurated ſtate. When the tumour has already ſuppurated, it is alſo adviſable to perſiſt in the uſe of emollient remedies, and promote the diſcharge until all the hardneſs is removed. An exceedingly troubleſome induration is apt to remain when the ſuppuration has been checked too ſoon, eſpecially if the ſtye has been of large ſize. After the ſuppurative ſtage, a weak ſolution of acetite of lead will commonly ſerve for the diſperſion of the remaining redneſs and ſwelling.

The indurated ſtye is uſually nothing more than the remains of one, that has paſſed through the inflammatory ſtage, the ſuppuration having either been checked too ſoon, or prevented altogether by means put in practice for the reſolution of the inflammation. The tumour becomes a cauſe of ſerious annoyance, partly becauſe it often falls into a painful inflamed ſtate, and partly becauſe it obſtructs the motions of the eye and eye-lids. It is even alleged, that the indurated ſtye may aſſume a malignant character, whence the ſwelling has been ſometimes called ſcirrhous. Richter ſtates, that in this ſtage emollients and other applications do no good, and he adviſes the ſurgeon to wait till the tumour ſpontaneouſly inflames, when ſuppuration is to be excited by ſome ſtimulating dreſſing, and kept up until the hardneſs ſubſides. Perhaps it is preferable (and we prefer the plan) to dip the point of a camel hair pencil in ſulphuric acid, and touch the ſtye with it a few times, until the cure is effected.

Scarpa has made ſome excellent obſervations on this diſeaſe. Among other things, we learn from him, that the inflammation of the ſtye, like that of boils, has a tendency to deſtroy a part of the cellular membrane, which is the reaſon why the tumour can hardly ever be completely reſolved. He ſtates, that reſolution can only be accompliſhed, when the inflammation is confined to the ſkin, a caſe where cold applications, eſpecially ice, may prove succesſful. But when any of the cellular membrane is deſtroyed, Scarpa recommends the bread and milk poultice, which is to be changed very often. When a white point makes its appearance on the apex of the tumour, this author diſapproves of being in a hurry to let out the ſmall quantity of ſerum which lies between the ſkin and ſloughy cellular membrane. He prefers waiting till the ſkin has become as thin as poſſible, and breaks of itſelf, ſo as to give vent not only to the ſerous fluid, but alſo to the dead cellular ſubſtance, which conſtitutes the chief part of the diſeaſe. When the contents are ſlow in making their eſcape, Scarpa adviſes preſſing them out.

Should a portion of ſloughy matter remain in the ſwelling a long while undetached, this eminent ſurgeon recommends touching the inſide of the ſtye with ſulphuric acid a few times, by means of a camel-hair pencil.

HORDEUM, in *Botany*, an ancient Latin name, of whoſe meaning or etymology we find no account or conjecture worth tranſcribing. Barley.—Linn. Gen. 39. Schreb. 54. Willd. Sp. Pl. v. 1. 472. Mart. Mill. Dict. v. 2. Sm. Fl. Brit. 155. Juſſ. 32. Tourn. t. 295. Lamarck. Illuſtr. t. 499. Gærtn. t. 81.—Claſs and order, *Triandria Digynia*. Nat. Ord. *Gramina*.

Gen. Ch. *Common Receptacle* elongated into a ſpike, jointed, brittle, compreſſed. *Cal.* Glumes lateral, three together, each of two narrow, pointed valves, containing one ſeſſile flower. *Cor.* of two valves; the lower one ſwelling, angular, ovate, pointed, longer than the calyx, ending in a long ſtraight awn; the inner valve lanceolate, flat, ſmalleſt. *Stam.* Filaments three, capillary, ſhorter than the corolla; anthers oblong. *Piſt.* Germen turbinate, ſomewhat ovate; ſtyles two, villoſe, reflexed; ſtigmas feathery. *Peric.* none, except the permanent corolla, falling off with and containing the ſeed. *Seed* oblong, ſwelling, angular, pointed at each end, above marked with a longitudinal furrow.

Obſ. In ſome ſpecies all the three flowers are perfect in all their parts, and fertile; in others the lateral ones are male, the central one only being hermaphrodite and fertile.

Eſſ. Ch. Common receptacle toothed and excavated. Calyx lateral, ternate, two-valved, ſingle-flowered.

The ſpecies of *Hordeum*, ten in Willdenow, may be divided into ſuch as come under the popular denomination of corn, and ſuch as are generally reckoned graſſes. The former are four; the latter ſix, and theſe laſt are of little or no value, but rather detrimental to the farmer.

H. *vulgare*. Linn. Sp. Pl. 125. Ehrh. Pl. Off. 421. Lob. Ic. 28. (H. polyſtichum vernum; Ger. em. 70.)—Flowers all perfect, awned; two of the rows more erect than the reſt.—This is our common cultivated Barley, ſaid to have been found wild in Sicily and Ruſſia. It is annual. The *flowers* and *ſeeds* are diſpoſed indiſtinctly in ſeveral rows, with very long, compreſſed, rough awns. There is a ſuppoſed variety, termed *Hordeum cœleſte*, in which the huſk, or corolla, does not ſtick to the ſeed; and another with black ſeeds, ſaid by Willdenow to be biennial.

H. *hexaſtichum*. Linn. Sp. Pl. 125, has ſix rows of ſeeds; *H. diſtichum*, ibid. but two. The latter is figured in Ger. em. 70. f. 1. It is much to be doubted whether theſe are more than varieties.

H. *Zeocriton*. Linn. Sp. Pl. 125. Schreb. Gram. t. 17. Ehrh. Herb. Exſicc. 13; has two rows of more crowded, ſpreading, and longer ſeeds, which give it a peculiar aſpect.

Of the graſſy ſpecies are

H. *murinum*, ſo called from *mus*, *muris*, a mouſe, and not from *murus*, a wall, though it is uſually named Wall Barley in Engliſh, is very common by way-ſides. See its figure in Curt. Lond. faſc. 5. t. 9. Mart. Ruſt. t. 43. Engl. Bot. t. 1971.

H. *pratenſe*. Mart. Ruſt. t. 108. Sm. Rel. Rudb. 12. f. 1. Engl. Bot. t. 409, is known from the laſt by its perennial root, taller upright ſtem, and by having all the calyx-glumes narrow and briſtle-ſhaped.

H. *maritimum*. Mart. Ruſt. t. 44. Knapp. t. 106. Engl. Bot. t. 1205. (H. marinum; Hudſ. 57.) A ſea-ſide graſs, very curiouſly diſtinguiſhed by Hudſon from *H. murinum* by the internal glumes of the lateral flowers being dilated and half ovate. It is alſo a more glaucous and ſmoother plant, with more compact ſpikes. Curtis confounded it with *murinum*, and yet mentions it as known by the name of Squirrel-tail graſs in the Iſle of Thanet, where it is found very pernicious, by ſticking into the gums of horſes, and rendering them ſo ſore as to prevent the animal's feeding.—Theſe three are the only Britiſh ſpecies of *Hordeum*; the ſecond of them, *pratenſe*, is the *nodoſum* of Linnæus, but he quotes for it a ſynonym of Dillenius in Ray's Synopſis, t. 20. f. 2, which belongs to *Alopecurus bulboſus*.

H. *bulboſum*. Linn. Sp. Pl. 125. Sm. Prodr. Fl. Græc. Sibth. v. 1. 73. Fl. Græc. t. 98, a native of the Levant, has been by ſome confounded with the Linnæan *nodoſum*, but is a larger and very diſtinct ſpecies. This is *H. ſtrictum*, Desfont. Atlant. v. 1. 113. t. 37; and is alſo well figured in Barrel. Ic. t. 112. f. 2.

For the culture and produce, &c. of barley, ſee Barley. For the regulation of the price, ſee Corn.

HORDICALIA, or Hordicidia, in *Antiquity*, a religious feaſt held among the Romans, wherein they ſacrificed cattle big with young.

The word hordicidia is formed of *horda*; which Feſtus explains by *prægnans*, *pregnant*; and *cædo*, *I ſacrifice*. Ovid, in his Faſti, lib. iv. ver. 631. deſcribes *horda* or *forda*, to be *bos prægnans*; of φορος, *gravida*.

This feaſt fell on the fifteenth of April; on which day they ſacrificed thirty cows, big with calf, to the goddeſs Tellus, or Terra, Earth: ſome of them were ſacrificed in the temple of Jupiter. The calves taken out of their bellies were burnt to aſhes firſt, by the pontifices; afterwards by the eldeſt of the veſtal virgins.

Alexander ab Alexandro, Genial. Dier. writes *hordalis dies*; and from him, ſome of the moderns call the feaſt *hordalia*; but Varro writes it *hordicalia*, and Feſtus, *hordicidia*.

HORDY, in *Geography*, a town of Hindooſtan, in Dowlatabad; 28 miles N. of Darore.

HOREB, in *Scripture Geography*, a mountain of Arabia Petræa, ſo near to mount Sinai that Horeb and Sinai ſeem to be two eminences of the ſame mountain. Sinai lies eaſt, and Horeb weſt; ſo that when the ſun riſes, the latter is covered with the ſhadow of Sinai. On Horeb there are ſprings and fruit-trees, but only rain-water on Sinai. At Horeb God appeared to Moſes in the burning-buſh. (Exod. iii. 1, 2, 3.) At the foot of this mountain Moſes ſtruck the rock, and drew water from it. (Exod. xvii. 6.) Elijah retired hither to avoid the perſecution of Jezebel. (1 Kings, xix. x.) It is frequently ſaid that God gave the law at Horeb, though in other places Sinai is named; becauſe Horeb and Sinai formed, as it were, one and the ſame mountain.

HOREHOUND, in *Botany*. See Marrubium.

Horehound, *Common white*, *Marrubium vulgare*, in the *Materia Medica*, is a plant which grows near the ſides of roads and rubbiſh, and flowers in June. The leaves have a moderately ſtrong ſmell of the aromatic kind, but not agreeable; which is improved by drying, and by keeping for ſome months is in a great part diſſipated; their taſte is very bitter, penetrating, diffuſive, and durable in the mouth. The dry herb gives out its virtue both to watery and ſpirituous menſtrua. The remaining extract, after inſpiſſating the watery infuſion, proves a ſtrong bitter, without flavour; and that of the ſpirituous infuſion is leſs in quantity, but of more penetrating bitterneſs. This plant is the πρασιον of the ancients, who have extolled it much for its efficacy in removing obſtructions of the lungs and other viſcera. It has been chiefly employed in humoural aſthmas, obſtinate coughs, and pulmonary conſumptions ; inſtances alſo occur of its beneficial uſe in ſcirrhous affections of the liver, jaundice, cachexies, and menſtrual ſuppreſſions. However, though horehound poſſeſſes ſome ſhare of medicinal power, as may be inferred from its ſenſible qualities, its virtues do not appear to be clearly aſcertained, and it is now rarely preſcribed by phyſicians. A dram of the dry leaves in powder, or two or three ounces of the expreſſed juice, or an infuſion of half an handful of the freſh leaves, have been directed for a doſe. The laſt mode is uſually practiſed by the common people, who ſtill recur to it as a favourite remedy in coughs and aſthmas. Taken in conſiderable quantities, it is ſaid to looſen the body. Although, ſays Cullen, it has had the reputation of a pectoral, its virtues, in many trials, have not been obſerved, and in ſeveral caſes it has been judged hurtful. Lewis Mat. Med. Woodv. Med. Bot.

Horehound, *Baſe*, in *Botany*. See Stachys.

Horehound, *Baſtard*. See Sideritis.

Horehound, *Black*, or *Stinking*. See Ballote.

Horehound, *Stinking marſh baſtard*. See Glechoma.

Horehound, *Water*. See Lycopus.

HOREM, in *Scripture Geography*, a city of Naphtali. Joſh. xix. 38.

HORESTI, in *Ancient Geography*, a people of Scotland, mentioned by Tacitus, in Agricola's time, the inhabitants of Angus, but probably incorporated with, or ſubdued by, the Vacomagi, before Ptolemy wrote his geography.

HORGEN, in *Geography*, a town of Switzerland, in the canton of Zurich ; 10 miles S.S.E. of Zurich.

HORIA, in *Entomology*, a Fabrician genus of coleopterous inſects, poſſeſſing the following character. The antennæ are moniliform ; feelers four, thicker towards the tip ; lip linear, and rounded at the end.

The body of the horia is long and cylindrical ; the head large and inclined, ſcutel ſmall and triangular ; wing-caſes coriaceous and flexile ; wings membranaceous, and all the feet armed with four claws. The horiæ are allied to the cantharis, mylabris, and meloe genera, and alſo to the new genera cucujus and lymexylon. The genus was firſt eſtabliſhed in the Fabrician Mantiſſa Inſectorum for the reception of the Linnæan cantharis demeſtoides, that inſect being eſteemed diſtinct from the cantharides. His horia demeſtoides, for that is the name under which it appears in the work above mentioned, was afterwards conſigned to the lymexylons (ſee Ent. Syſt.), and the ſame generic name given to another family ; that denominated horia by later writers. The genus horia, thus eſtabliſhed, contains only two ſpecies, one of which (teſtacea) Fabricius had himſelf deſcribed in his Mantiſſa, under the title of cucujus flavipes, and the other is the cucujus maculatus of profeſſor Swederus, an account of which is inſerted by that author in the Tranſactions of the Royal Society of Stockholm.

Horia is a genus adopted by Olivier, who deſcribes the ſpecies maculata. Latreille, however, ſeems to think the two Fabrician ſpecies are not generically the ſame, the head and thorax in one being much larger in proportion to the reſt of the body in the ſpecies maculata than teſtacea. Upon this opinion, ſuggeſted by Latreille, it is remarked by Olivier that we are not at preſent ſufficiently acquainted with the ſtructure of the mouth, to ſpeak with certainty, and he himſelf forbears from offering any opinion ; and we further obſerve that in the lateſt publication of Latreille, he admits the firſt at leaſt of the Fabrician ſpecies under the generic name of horia. The transformations of the inſects of this family are entirely unknown.

Species.

Maculata. Yellowiſh ; wing-caſes with ſeven black ſpots. Fabr. *Horia maculata*, Olivier. *Cucujus maculatus*, Swederus.

Length about an inch and a half. The ſpecies inhabits South America.

Testacea. Rufous ; antennæ and legs black. Fabr. Native of Tranquebar. The poſterior thighs of the male inſect thick.

HORJA, in *Geography*, a town of Sweden, in the province of Schonen, 22 miles N. of Chriſtianſtadt.—Alſo, a town of Sweden, in Weſt Gothland ; 20 miles N.N.W. of Jonkioping.

HORITES, in *Scripture Geography*, an ancient people, who dwelt in the mountains of Seir, beyond Jordan, Gen. xiv. 6. They were powerful, and had princes of their own, before Eſau conquered their country. Afterwards they and the Edomites ſeem to have formed one people. They dwelt in Arabia Petræa and Arabia Deſerta, S.E. of Judæa. Deut. ii. 1. xxiii. Judg. v. 4. The Hebrew חורים, Chorim, tranſlated Horites in Geneſis, is uſed appellatively in other paſſages of ſcripture, to denote *heroes*, or great and powerful men ; and probably the Greeks derived from this term their *heroes*, as they derived *anax*, *a king*, from the ſons of Anak. See 1 Kings, xxi. 8. 11. Neh. ii. 16. iv. 14. v. 7. vi. 17. vii. 5. xiii. 17. Eccl. x. 17. Iſ. xxxiv. 21.

HORIZON, or Horison, in *Aſtronomy*, a great circle of the ſphere, dividing the world into two parts, or hemiſpheres ; the one upper, and viſible ; the other lower, and hid.

The word is ὁρίζων, which literally ſignifies *bounding*, or *terminating the ſight* ; being formed of ὁρίζω, *termino, defini*, *I bound, I limit* ; whence it is alſo called *finitor*, *finiſher*.

The horizon is either *rational* or *ſenſible*.

Horizon, *Rational*, *True*, or *Aſtronomical*, which is alſo called ſimply and abſolutely the horizon, is a great circle, whoſe plane paſſes through the centre of the earth, and whoſe poles are the zenith and nadir. It divides the ſphere into two equal parts or hemiſpheres.

Such is the circle H R (*Plate* XVI. *Aſtronomy*, *fig.* 141.) whoſe poles are the zenith and nadir ; whence it follows, that the ſeveral points of the horizon are a quadrant diſtant from the zenith and nadir.

The meridian and vertical circles cut the rational horizon at right angles, and into equal parts.

Horizon, *Senſible*, *Viſible*, or *Apparent*, is a leſſer circle of the ſphere, as *h r*, which divides the viſible part of the ſphere from the inviſible, and whoſe plane touches the ſpherical ſurface of the earth.

Its poles, too, are the zenith and nadir ; and conſequently, the *ſenſible* horizon is parallel to the *rational* ; and it is cut at right angles, and into two equal parts, by the verticals.

The *ſenſible* horizon is divided into *eaſtern* and *weſtern*.

Horizon, *the Eaſtern*, or *Ortive*, is that part of the horizon wherein the heavenly bodies riſe.

Horizon, *the Weſtern*, or *Occidual*, is that wherein the ſtars ſet.

Horizon, in *Geography*, is a circle paſſing over the earth, and dividing the viſible part of the earth and heavens from that which is inviſible.

The altitude or elevation of any point of the ſphere, is an arc of a vertical circle, intercepted between it and the ſenſible horizon.

This is peculiarly denominated *ſenſible* or *apparent* horizon, to diſtinguiſh it from the *rational*, or true, which paſſes through the centre of the earth; as already obſerved.

Theſe two horizons, though diſtant from one another by the ſemidiameter of the earth, will appear to coincide, when continued to the ſphere of the fixed ſtars; becauſe the earth compared with this ſphere is but a point.

By *ſenſible* horizon is alſo frequently meant a circle, which determines the ſegment of the ſurface of the earth, over which the eye can reach; called alſo the *phyſical* horizon. In this ſenſe we ſay, a ſpacious horizon; a narrow, ſcanty horizon.

It is evident, that the higher the eye is, the farther is the viſible horizon extended. Thus, let H *h* r R (*Plate* I. *Geography, fig.* 2.) repreſent a part of the ſpherical ſurface of the earth; if the eye be at A, draw A *h* and A *r* tangents to the globe of the earth; and let one of theſe lines A *h*, the point A continuing immoveable, be carried round, and in its revolution always touch the ſurface of the earth; the point *h* will touch the viſible horizon, part of which is repreſented by the curve *h o r*. But if the eye be placed higher, as at B, the tangents B H and B R will reach farther, and the viſible horizon will be larger, *viz.* H O R. The viſible horizon is moſt accurately obſerved upon the ſea, and is, therefore, ſometimes called the *horizon of the ſea*. In obſerving this horizon, the viſual rays A *h* and A *r* will, on account of the ſpherical ſurface of the ſea, always point a little below the true ſenſible horizon S S, and conſequently below the rational horizon T T, which is parallel to it.

To find the depreſſion of the horizon of the ſea, below the true horizon, which varies with the height of the eye, and in a ſmall degree with the variation of the refractive power of the atmoſphere, ſee Depression.

The ſemidiameter of the earth, and the height of the eye being given, the extent of the viſible horizon is thus found.

Let A D E (*fig.* 3.) be an arc of a great circle upon the earth, C the centre of the earth, B the eye of the obſerver, B D the height of the eye, B A and B E lines drawn from the eye, touching the ſurface of the earth at A and E, and terminating the viſible horizon: in order to find A D, draw C A, and in the triangle B A C, right-angled at A, we have C B to C A as the whole ſine or radius is to the ſine of the angle A B C, whoſe complement is the angle C, meaſured by the arc A D. *E. gr.* let D B, the height of the eye, be five feet, D C or C A, the ſemi-diameter of the earth, be 20949655 feet, and C B will be 20949660 feet: then will the logarithm of C B be to that of C A, or 7.3201769 to 7.3201768 as 10.0000000 to 9 9999999 the ſine of A B C = 89° 58′; therefore the angle C is = 2′ or 12188 feet = 2.308 miles, or two miles 532 yards, nearly. B A, or the right-lined diſtance of the fartheſt point of ſight from the eye, may eaſily be found, as the angles and other ſides are known: thus, radius or ſine of the angle A is to C B as the ſine C is to B A: or, ſince $B A = \overline{C B - C A}|^{\frac{1}{2}} = \overline{C B + C A \times C B - C A}|^{\frac{1}{2}}$: if the logarithm of the ſum of the two given ſides be added to that of their difference, the half of theſe two logarithms will be equal to the logarithm of B A, nearly, *i. e.* $\frac{7.6222069 + 0.6989700}{2} = 4.1605884$, the logarithm of 14474 feet = B A, nearly. See Distance.

The depreſſion of the horizon of the ſea, at a given height of the eye, may be thus found by calculation: for if the eye be at B, the ſenſible horizon is F G, the depreſſion is the angle F B A, which being the complement of A B C, is equal to A C D. See Depression.

The diſtance on a perfect globe, if the viſual rays came to the eye in a ſtraight line, would be as it has been now ſtated; but by means of the refraction of the atmoſphere, diſtant objects on the horizon appear higher than they really are, and may be ſeen at a greater diſtance, eſpecially on the ſea. Thus, without refraction, the moſt diſtant part of the ſea viſible to the eye at B would be A; but refraction elevates the parts of the ſea, which are farther from the eye than A, ſo that the tangent or viſual ray ſhall fall upon a more diſtant point, as H, and conſequently the extent of the viſible horizon is enlarged by refraction: for it is D H inſtead of D A; and refraction makes the angle of depreſſion leſs than it would be, *viz.* H B F, inſtead of A B F.

Father Laval, profeſſor of hydrography at Marſeilles, found, that the horizon of his obſervatory toward the ſea was never more than 15 minutes, nor leſs than 13½; that is, the arc of the circumference of the earth, intercepted between the obſervatory and the horizon, fluctuated between thoſe two quantities; whence M. Caſſini deduces, that the extent of the horizon is ſeven French leagues, of three miles each; and that the obſervatory is 175 feet high.

The height of the horizon, at the ſame place, and the ſame elevation above it, is very ſubject to vary, by means of differences in the atmoſphere, which occaſion others in the refractions.

When the ſea was full, or the north-weſt or ſouth-weſt wind blew, and the air hazy about the horizon, F. Laval always found his horizon depreſſed, or lower, *i. e.* the refraction which ſhould raiſe it in that caſe was leſs than ordinary. And yet, on the common principles, the air being now much charged with vapours, the very contrary was rather to be expected. This makes M. Caſſini ſuſpect that there is ſome other refractive matter in the atmoſphere, beſide the air itſelf.

The ſame author obſerves, that at a height ten times greater than that of F. Laval's obſervatory, he found the arc terminated by the horizon toward the ſea, 42′, without any ſenſible variation; whence he concludes, that the variations are the greater, as the height is the leſs; which may ſeem contrary to what he had aſſerted in another place, *viz.* that the variations in the apparent altitudes of bodies are greater, as theſe objects are more remote, becauſe they are ſeen through the larger quantity of air, which is liable to be varied. But the contradiction may be ſolved.

Horizon *of the Globe.* See Globe.

HORIZONTAL, ſomething that relates to the horizon, or that is taken in the horizon, or on a level with the horizon.

Horizontal *Dial*, is that drawn on a plane parallel to the horizon; having its gnomon, or ſtyle, elevated according to the altitude of the pole of the place it is deſigned for.

Horizontal dials are of all others the moſt ſimple and eaſy. The manner of deſcribing them, ſee under the article Dial.

Horizontal *Diſtance.* See Distance.

Horizontal *Line*, in *Perſpective*, is a right line drawn through the principal point, parallel to the horizon; or it is the interſection of the horizontal and perſpective planes.

Such is the line P L (*Plate* I. *Perſpective, fig.* 3.) paſſing through the principal point F.

Horizontal *Line*, or baſe of a hill, in *Surveying*, a line drawn on the horizontal plane of the hill, or that on which it ſtands.

Horizontal *Moon.* See *Apparent* Magnitude.

Horizontal *Parallax.* See Parallax.

HORIZONTAL *Plane*, is that which is parallel to the horizon of the place, or not inclined to it.

The buſineſs of levelling is, to find whether two points be in the horizontal plane; or how much the deviation is. See LEVELLING.

HORIZONTAL *Plane*, in *Perſpective*. See PLANE.

HORIRONTAL *Projection*. See PROJECTION and MAP.

HORIZONTAL *Range*, or *level range*, of a piece of ordnance, is the line it deſcribes, when directed parallel to the horizon, or horizontal line.

Dr. Halley gives two very ready theorems: the one, to find the greateſt horizontal range at 45 degrees elevation, in any ſhot made upon any inclined plane, with any elevation of the piece whatſoever; and the other, to find elevations proper to ſtrike a given object with any force, greater than what is ſufficient to reach it with the middle elevation.

1. A ſhot being made on an inclined plane; having the horizontal diſtance of the object it ſtrikes, with the elevation of the piece, and the angle at the gun between the object and the perpendicular; to find the greateſt horizontal range of that piece laden with the ſame charge; that is, half the latus rectum of all the parabolæ made with the ſame impetus. Take half the diſtance of the object from the nadir, and the difference of the given elevation from that half; ſubtract the verſed ſine of that difference from the verſed ſine of the diſtance of the object from the zenith; the difference of thoſe verſed ſines will be to the ſine of the diſtance of the object from the zenith, as the horizontal diſtance of the object ſtruck, to the greateſt range at 45 degrees.

2. Having the greateſt horizontal range of a gun, the horizontal diſtance and angle of inclination of an object to the perpendicular: to find the two elevations neceſſary to ſtrike that object. Halve the diſtance of the object from the nadir; this half is equal to the half ſum of the two elevations ſought; then ſay, as the greateſt horizontal range is to the horizontal diſtance of the object, ſo is the ſine of the angle of inclination, or diſtance of the object from the perpendicular to a fourth proportional; which fourth being ſubtracted from the verſed ſines of the diſtance of the object from the zenith, leaves the verſed ſine of half the difference of the elevations ſought; which elevations are therefore had, by adding and ſubtracting that half of the difference to and from the aforeſaid ſum. See PROJECTILE and GUNNERY.

HORIZONTAL *Refraction*. See REFRACTION.

HORIZONTAL *Roots*. See FIBROSE *roots*.

HORIZONTAL *Shelters*, among *Gardeners*, are defences, diſpoſed parallel to the horizon, for tender plants, bloſſoms, and fruits, in the ſpring, to defend them againſt blaſts, and pinching nights.

The uſual ſhelters that have obtained are baſs mats, and other warm coverings, which are rolled up in the day-time, and let down in the night. It was the reverend Mr. Lawrence who firſt propoſed horizontal ſhelters, chiefly on this principle; that moſt of our froſts and blaſts fall perpendicularly, *i. e.* the condenſed vapours, falling from the upper region, do at night form themſelves, toward the ſurface of the earth, into drops of dew, ſubject to be frozen by the coldneſs of the air

Horizontal ſhelters are to be made by laying rows of tiles, at certain diſtances one above another, in the ſtructure of the wall, ſo as to project or hang over the plane of the wall, to carry off the dew, wet, &c. It is an inconvenience, objected to this method, that it is difficult to lead a tree rightly among the tiles, or to keep its figure duly filled up.

But the principal objection againſt theſe tiles is this, that they prevent vegetables from receiving the advantage of dews, rains, &c. in conſequence of which they become weak and languid, and at laſt entirely decay. The only ſort of horizontal ſhelters, which Mr. Miller has ever obſerved to be uſeful for fruit-trees, are made with two leaves of ſlit-deal, joined over each other, and painted. This kind of ſhelter, being fixed upon the top of the wall with pullies, to draw up and down at pleaſure, forms a ſort of pent-houſe, which being let down in great rains or cold nights, whilſt the trees are in flower, or the fruit is ſetting, proves ſerviceable; but it muſt be removed ſoon after the fruit is ſet, ſo that the trees may enjoy all the advantages of rain, dew, &c. in the ſummer, which are abſolutely neceſſary for producing healthy trees, or good fruit.

HORIZONTAL *Speculum*. One of the great inconveniencies mariners have to ſtruggle with, is the frequent want of a horizon; for though the atmoſphere may, at the height of 10 or 12 degrees and upwards, be clear enough to give a view of the ſun and other objects, yet all below that height is often ſo hazy, as to hinder a diſtinct ſight of the horizon, and conſequently to prevent obſervations from having the requiſite correctneſs. This inconveniency is removed by a horizontal ſpeculum, invented by Mr. Serſon, who was loſt in the Victory man of war, in which ſhip he was ſent out to make trial of his machine.

The principle on which this machine was conſtructed, was derived from the conſideration of a top while ſpinning: for this author obſerving that the top had a conſiderable degree of ſteadineſs in, and force to acquire, an upright motion, whether the body which ſuſtained it was in motion or at reſt: he therefore concluded, that if a circular machine, whoſe upper face was a flat poliſhed ſpeculum, was to have a ſwift circular motion communicated to it, that ſpeculum, by acquiring a horizontal ſituation, would ſhew all objects which it reflected, as much below the horizon, as they really are above it. Conſequently, if the image of the ſun, as ſeen reflected from the ſpeculum, were made to coincide with the ſun's image ſeen in a Hadley's quadrant, the angle given by the quadrant would in all caſes be double the real altitude. Mr. Serſon alſo found, that to confine the ſpeculum to one place, it was neceſſary to let the point ſpin in a cup; for the horizontality of the ſpeculum would not be altered, whatever poſition might be given to the cup; provided it touched only at the point on which it ſpun. This curious and uſeful inſtrument, as it is now improved by Mr. Smeaton, conſiſts in a well poliſhed metal ſpeculum, of about three inches and a half in diameter, incloſed within a circular rim of braſs; ſo fitted that the centre of gravity of the whole ſhall fall near the point whereon it ſpins. This is the end of a ſteel axis running through the centre of the ſpeculum, above which it finiſhes in a ſquare, for the conveniency of fitting a roller on it, by which it is ſet in motion by means of a piece of tape wound round the roller. The cup in which it ſpins is made of agate, flint, or other hard ſubſtance; and a pyramidal cover may be made to the whole, compoſed of glaſs panes: by this means an obſervation may be made with it as well covered as open, and it will thereby be prevented from tarniſhing by the moiſt air and ſpray of the ſea.

If the box be placed ſteadily, and as level as may be, after the tape is untwirled, the ſpeculum will be fit for obſervation in leſs than two minutes, and will generally continue ſo for twelve or fifteen. When it is to be uſed for a meridian obſervation, it may be convenient to know what time to ſet it up; and this may be had near enough by taking the ſun's bearing from the meridian with an azimuth compaſs, allowing for the variation; and if it has about five degrees to run before it culminates, it is then time to ſpin the ſpeculum. The obſerver is to place himſelf as near the box as he conveniently can, and look down on the ſun's image in the ſpeculum, and bring the ſun's image ſeen in the quadrant to agree with it, ſo that their centres coincide; the quadrant will then give the double altitude, without any allowance for the height of the ſhip, or the ſun's ſemi-diameter.

When the ſun is about 45° high, the obſerver muſt look through that ſight of the quadrant, which is uſed for a back obſervation: but he muſt look down on the horizontal image, of that in the ſpeculum, as if it was the back horizon; and then making the ſolar images to agree, the quadrant, according as it is numbered, will give the double altitude, or double zenith diſtance.

Theſe ſpeculums are as uſeful by night as by day; for as the images of the ſmalleſt ſtars may be ſeen in the ſpeculum, conſequently any object that can be ſeen reflected from the glaſſes of the quadrant, may be obſerved by the ſpeculum; and theſe are all the ſtars of the firſt magnitude, the planets Venus, Mars, Jupiter, Saturn, and the moon. So that by having the declinations of theſe bodies in an ephemeris, they may be uſed in obſervations as well as the ſun.

As the great diſtreſſes to which ſhips are ſometimes driven in ſeveral parts of the world, for want of a horizon to obſerve by, are by this ingenious contrivance quite removed, it is hoped the uſe of this inſtrument may become general. See Hadley's Quadrant.

Horizontal *Diſſepiments*, in *Natural Hiſtory*, are terms applied to the thin plates which croſs the tubes or ſtirplets of ſome corals at right angles, and connect them together, of which the tubipora muſica (figured in Ellis, tab. 27.) is an inſtance.

Horizontal *Face*, in *Cryſtallography*, is uſed by Haüy in deſcribing ſecondary forms of cryſtals, the axes of which are ſuppoſed vertical, and then the faces perpendicular to theſe will be called horizontal faces, thoſe parallel to the axes being called vertical faces.

Horizontal *Strata*, in *Geology*. It ſeems beſt to agree with the phenomena of the ſtrata of the earth, as well as with the opinions of the greater number and moſt able of the writers on the ſubject, to conſider the ſtrata as having been originally concentric with the earth, and entire, and, of courſe, horizontal in every part. (See Concentricity *of Strata*.) Conſiderable tracts of ſtrata are found yet in nearly a horizontal poſition, the red marle, for inſtance, on the ſouth and ſouth-weſt of Derbyſhire. (See Mr. Farey's Report to the Board of Agriculture, vol. i. p. 147.) Dr. Charles Anderſon, in his "Appendix to the Tranſlation of Werner's New Theory of Veins," p. 256, remarks, that the wideſt mineral veins occur in horizontal ſtrata, which ſeem confirmed in Derbyſhire, by the very wide veins of ſpar, void of metallic ores, which obliquely croſs Dovedale on the confines of Staffordſhire, in the fourth lime-ſtone rock, which lies horizontal, or very near it, in theſe parts.

HORLA, in *Geography*, a town of Norway, in the dioceſe of Drontheim; 48 miles W.S.W. of Romſdal.

HORLOFA, a town of Sweden, in the province of Skone; 11 miles E. of Lund.

HORMAH, or Chorma, from חרם, ſignifying the ſame with *Anathema*, in *Scripture Geography*, a town of Paleſtine, belonging to the tribe of Simeon. It was called *Zephath* before the Hebrews called it Hormah, the occaſion of which appellation was, that the king of Arad, a Canaanite, S. of the land of promiſe, attacked the Hebrews, put them to flight, and deſpoiled them of a rich booty; upon which the Iſraelites engaged themſelves by vow to deſtroy every thing belonging to the king of Arad; a purpoſe which probably was not executed till after Joſhua entered the land of promiſe. See Joſh. xv. 30.

HORMEZION, or Hormesion, in *Natural Hiſtory*, the name of a gem deſcribed by Pliny, and ſeeming to have been a ſpecies of hyacinth. He ſays it was very bright, and of a yellowiſh-red, or flame colour, with a whitiſh caſt at the edges.

HORMILLOS, Los, in *Geography*, a ſmall iſland in the Pacific ocean, near the coaſt of Peru. S. lat. 16° 45′.

HORMINODES, in *Natural Hiſtory*, the name of a gem deſcribed by Pliny, and others of the ancient writers. The ſtone itſelf, they tell us, was either black or white, but had in it a green ſpeck ſurrounded by a circle of a bright yellow. It ſeems to have been no other than one of the oculus belis of our jewellers.

HORMINUM, in *Botany*. See Melissa and Salvia.

HORMISDAS, or Hormouz, king of Perſia, in *Biography*, ſucceeded to the throne A.D. 579, after the death of his father, the great Choſroes. He had, during the life of his parent, obtained ſome military reputation, and while directed by the influence of prudent counſellors, he governed his dominions wiſely, but when left to himſelf he exhibited in his character and conduct a number of vices, and diſplayed the utmoſt folly and tyranny. Not fewer than 13,000 victims of all ranks are ſaid to have fallen, by his order or connivance, under the ſword of the executioner. His cruelty produced hatred, and hatred terminated in rebellion. In this ſtate of things, the khan of the Turks invaded the eaſtern provinces with a vaſt army, while the Romans renewed hoſtilities on the oppoſite ſide. The Perſian empire would have been ſubverted had it not been for the valour and talents of Bahran, or Varanes, who gave the Turks a ſignal defeat. The ſucceſsful general, in one inſtance, was himſelf defeated by the lieutenant of the emperor Maurice, and Hormiſdas had the folly and injuſtice mortally to affront him by the preſent of a diſtaff and a ſuit of women's apparel. He was bent on revenge, appeared before his troops in this garb, and found no difficulty in rouſing them to rebellion; the revolt became general, and, in the confuſion, Bindoes, a prince of the blood, who had been impriſoned by Hormiſdas, was liberated by his brother. He came to the royal palace at Cteſiphon, where the monarch was ſitting in all the pomp of royalty, and began to upbraid him for his tyranny and miſconduct. Hormiſdas ordered his attendants to ſeize him; but, overawed by the preſence of Bindoes, they were inattentive to the royal command, and ſtood patiently by and ſaw the king dragged from his throne into priſon, where he was firſt deprived of his ſight, and then of his life. Whether the king was aſſaſſinated, or died by leſs violent means, is not eaſy to aſcertain. He died in the year 599, after a reign of twenty-one years.

Hormisdas, pope, ſon of a perſon named Julius, and a native of Fruſino, in Campania, was elected to the pontificate upon the death of pope Symmachus, in the year 514. One of the moſt prominent circumſtances that occurred during his elevation to the popedom was the death of Anaſtaſius, who was ſucceeded by Juſtin. The new emperor, though perfectly illiterate, was moſt zealouſly attached to the doctrine of the two natures. His promotion, therefore, gave the higheſt ſatisfaction to the orthodox throughout the empire. In Conſtantinople the populace diſtinguiſhed themſelves for their zeal in the Catholic cauſe, by compelling the patriarch to receive the council of Chalcedon, and to anathematize publicly all thoſe who had rejected the decrees of the ſynod. He alſo promiſed to have what he had done confirmed by a council. A council was accordingly aſſembled, in great haſte, to gratify the impatient and riotous multitude.

The acts of this body in behalf of the Catholic faith were approved and confirmed by the emperor, who iſſued out an edict, commanding all biſhops within his dominions to conform to them, on pain of forfeiting their fees. This decree was ſoon followed by the execution of ſuch of the Eutychians as were moſt obnoxious to the orthodox party. By theſe means of conviction, the biſhops of the Eaſt were ſpeedily brought to unite in the profeſſion of the Catholic faith, and the emperor undertook, in the next place, to unite them with their brethren in the Weſt. This ſubject occupied the pope till his death, in the year 523, after a pontificate of nine years. Many of his letters are extant. Bower.

HORMONT, in *Geography*, a town of Perſia, in the province of Lariſtan; 33 miles E.N.E. of Lar.

HORMUS, in *Ancient Muſic*, was a dance of a gay kind for girls and boys, in which the boys took the lead, putting themſelves in manly and military attitudes, the girls following in gentle and modeſt ſteps, harmonizing the two virtues of force and temperance.

The Grecian girls of good families aſſembled in troops, ornamented with noſegays, garlands, and chaplets of flowers; they afterwards went to the temples, ſinging hymns at the ſolemn feſtivals, or at the nuptials of ſome one of their companions.

The Lacedæmonian dance conſiſted of three parts, repreſenting the three ages of human life. All ſinging at the ſame time.

Age - We *have* been valiant.
Youth - We *are* ſo at preſent.
Infancy - We *ſhall* be ſo in our turn.

HORN, CORNU, a hard, callous ſubſtance, growing on the head of divers cattle, and ſerving them as weapons of offence and defence.

HORNS, in *Comparative Anatomy*. The parts which receive the name of horns are diſſimilar in form and ſtructure. They admit of being divided into four kinds at leaſt: the 1ſt are found on the *rhinoceros*; the 2d are thoſe of the *ox*, *antelope*, *goat*, and *ſheep*; the 3d belong to the *camelopard*, and the 4th to the *deer* kind.

The horns of the *rhinoceros* are thoſe moſt properly ſo called, being entirely compoſed of a horny ſubſtance. They are ſituated not upon the os frontis, but the naſal bones. They are of a pyramidal ſhape, and have no attachment to the ſkull but at the ſurface of their baſis. They appear to be made up of a number of fibres reſembling ſtrong hairs conſolidated together, and rendered ſmooth upon the ſurface, except around the baſe, where the external fibres, being broken off, preſent the appearance of a bruſh.

A number of pores, or foramina, are to be ſeen upon the baſis of the horn, into which fine vaſcular proceſſes are probably received; for, from the ſtructure of the horn of the *rhinoceros*, there is every reaſon to ſuppoſe it is formed upon pulps, in the manner of hair. (See HAIR.) Theſe foramina are the orifices of fine canals, or grooves, which paſs longitudinally throughout the horn. Cuvier ſtates, that in the *rhinoceros unicornis* there is a thick mucus interpoſed between the horn and the bone on which it is ſituated, and that in the *rhinoceros bicornis* the horns are connected with the ſkin only, and, therefore, they are in ſome degree moveable. The horns of the *rhinoceros* are not deciduous, but continue to increaſe from the root, or baſe, in proportion as they wear.

Horns of the 2d ſort are the moſt common; they belong to many of the ruminating quadrupeds, and ſome birds have ſimilar proceſſes upon their heads. They conſiſt of three parts, an oſſeous ſubſtance, a vaſcular inveſtment, and the external ſheath. The bone is the part which is firſt formed: it may be diſcovered at a very early period as a knob, or round protuberance, moveable upon the os frontis, and covered with the common integuments: as it elongates, the ſkin covering it becomes callous, and appears to wear off when the oſſeous proceſs is found to be clothed in a real caſe of horn. It then becomes fixed to the os frontis by anchyloſis. The original perioſteum of the knobs becomes thicker and ſofter, and its veſſels increaſe in ſize and number, preparatory both to the growth of the oſſeous, and the external parts of the horn between which it is interpoſed, and to both of which it ſerves as the organ of nutrition. The internal or oſſeous portion of the horn, even when fully formed, is irregular in its texture, reſembling more an oſſeous depoſit from inflammation than natural bone.

The external caſe of the horns in the *goat* and *ſheep* is ſomewhat different from that of the *ox* and *antelope*: in the latter the horny fibres appear long and continuous, and form cloſe compact layers, incaſed the one within the other; but in the *goat* and *ſheep* they are interrupted by many tranſverſe grooves, are ſhorter, and have the appearance of imbricated layers of horn.

The growth of the horny caſes is from the roots, in the manner of hairs, but it does not appear to go on continually, or without interruption; for the increaſe in each year is marked by a circular groove near the root of the horn, by which means the age of the animal can be often determined.

Horns of the 3d ſort are the ſhort ſtraight proceſſes upon the head of the *camelopard*; theſe conſiſt of bone, which is of a porous ſpongy texture; they are united to the os frontis by anchyloſis at their baſe, and the other extremities produce a regular convex knob: the ſtem or pedicle of theſe horns is merely covered by the common integuments; but the bulb on the ends ſuſtains a number of ſtrong ſhort hairs, which no doubt grow in a ſimilar manner, and are every way analogous to the fibres compoſing the horns of the *rhinoceros*.

Horns of the 4th kind are peculiar to the *deer genus*, (*cervus*): theſe are compoſed entirely of bone, and have, therefore, been deſcribed, along with the other bones, by Cuvier and other anatomiſts; we ſhall, however, find from their hiſtory, as well as ſituation, that they diſtinctly belong to that claſs of bones which enter into the compoſition of horns in general.

The horns of *deer* are ſhed and reproduced annually, their growth therefore is exceedingly rapid. Their firſt appearance is in the form of two ſmall cartilaginous knobs or buttons under the ſkin. Theſe proceed to develope their different branches or diviſions in ſucceſſion, ſtill clothed with what has been called their *velvet* coat. This integument conſiſts of the ſkin covered with a delicate ſoft hair, and the perioſteum cloſely united together. The velvet covering is extremely vaſcular; many of its veſſels acquire an extraordinary magnitude. We have ſeen them in the *ſtag* during the growth of the horn as large as the quills of a gooſe, and Cuvier ſtates them to equal the ſize of the little finger. When the horns are completely formed, the velvet coat loſes its vaſcularity, becomes inſenſible and dry, and is rubbed off by the deer, leaving the horns, in the hunters' phraſe, *burniſhed*.

The horns of *deer* acquire from friction a degree of poliſh upon the ſurface towards the top, but nearer the root, they ſtill retain the impreſſions of the large veſſels that were employed in their ſecretion. The bone of which they are compoſed is denſe and hard upon the external part, and more light and porous in the interior, although it is without cavity or medullary cells.

The original cartilaginous buttons or rudiments of the horns are ſuſtained upon eminences of the os frontis, with which they form the ſame ſort of union that exiſts with reſpect to the epiphyſis of bones, being at firſt looſe and afterwards firm. The line of their union is indicated by a circular notched protuberance upon the baſe of the horn, which is called the *burr.*

When the horns are about to be caſt, there appears, upon ſawing them in a longitudinal direction, a reddiſh mark of ſeparation between them, and the eminences of the frontal bone on which they are ſuſtained. This mark becomes more apparent, and at laſt the coheſion between the horns and the ſkull is ſo much deſtroyed, that the leaſt ſhock makes them fall after the horn is ſhed. The eminence of the os frontis preſents the appearance of a bone ſawed or broken acroſs. Its proper ſubſtance is actually expoſed, but it very ſoon becomes covered by the integuments.

The bones which conſtitute the horns of the *deer* appear to be entirely analogous to the oſſeous parts of the horns of the other ruminant quadrupeds, and only differ from them in the circumſtance of being deciduous. The horns of the *rhinoceros*, and thoſe of the *deer*, ſhould be conſidered as the two extremes in the hiſtory of theſe organs. The one wants the oſſeous baſis, the other the corneous covering. The horns of the *camelopard* and *ox*, &c. exhibit the examples of intermediate ſtructure.

The formation of the horns has been long known to be much influenced by the condition of the organs of generation. They are ſometimes peculiar to the male animal, and in the *deer* kind acquire their full bulk and complete form juſt before the ſeaſon of *rutting*, after which they are ſhed. Doctor Richard Ruſſel, in his "Economy of Nature in Diſeaſes of the Glands," relates ſome curious effects on the growth of *deer's* horns from caſtration. He caſtrated a very young *deer*, the conſequence was, the horns did not grow. He then took another *deer*, ſome months older, and caſtrated it. A little velvet bud aroſe on one ſide of the head inſtead of a horn, and an irregular velvet horn about ſix inches long grew on the other: both were cartilaginous, and neither had ſtability enough to ſtand upright. He next had a deer ſomewhat older than the laſt caſtrated, but not cut *clean*, as they term it. The event was this; he had two moſt irregular horns, that never caſt their velvet, and the left teſticle and ſpermatic cord being leaſt ſpoiled, the left horn was one-third longer than the right. Nature, not being able to carry on the growth in the regular way, threw out from the ſides of the horns ſome bony knots, from which hung ſoft penſile glands, (as he termed them,) that were covered with velvet, and reſembled bunches of grapes. Laſtly, he caſtrated two old *bucks* at the end of February, and their horns dropt off the 21ſt of March following, ſo that this event was anticipated five weeks at leaſt. Their horns were however renewed the next year, and were longer than thoſe of the other bucks of the ſame age; but the branches were leſs in length and ſize, and neither the velvet covering or the horns themſelves were ever caſt afterwards. See Economy of Nature in Acute and Chronical Diſeaſes of the Glands, by Doctor Richard Ruſſel, p. 21.

The effect of caſtration is alſo ſtrikingly to be ſeen in the different kind of horns in the *bull* and *bullock*. In the latter, the growth of the horn ſeems to be unlimited, but this depends upon the increaſe of the oſſeous part, for the corneous ſheaths are ſo thin and imperfectly formed, that they are only fit for the coarſer articles of manufacture. It is probable, that if caſtration could be performed early enough in theſe animals, it would prevent the growth of horns entirely, as in other caſes.

For the explanation of the ſtructure and mode of growth of horns, ſee the plate on *Comparative Anatomy*, including the repreſentations of *hair*, *horns*, *ſpines*, &c. *Fig.* 9. is a view of the horn of the *rhinoceros unicornis*: *a*, the body of the horn; *b*, the briſtled appearance around the root; *c*, the ſurface by which it is connected with the head covered with minute hairs. *Fig.* 10. is the button or rudiment of the *ſtag's* horn, after a fortnight or three weeks growth. *Fig.* 11. is the horn ſome weeks farther advanced with ſeveral of the branches forming. The horn is ſtill ſoft and cartilaginous, and covered by its velvet coat. *Fig.* 12. is a diſſected view of a portion of the horn in an early ſtate, to ſhew the nature of the velvet coat: *a*, the ſkin clothed with thick cloſe hair; *b*, the perioſteum thickened and vaſcular, and not cloſely adhering to the bone; *c*, *c*, ſome of the large branches of the blood-veſſels that nouriſh the horn unremoved. *Fig.* 13. is the *deer's* horn fully grown; the remains of the velvet coat are ſeen hanging in ſhreds, which the animal rubs off againſt the trees in the courſe of a day or two. *Fig.* 14. exhibits the ſocket upon the eminence of the os frontis, left by the ſeparation or caſting of the horn. *Fig.* 15. ſhews the effect produced upon the horns from imperfect caſtration in a young deer, as deſcribed and delineated by Dr. Ruſſel.

The horns of a deer are by huntſmen called his *head*. See Head.

In the Hiſtory of the French Academy of Sciences, we have an account of a bullock's horn dug out of the ground in ploughing, which had ſhot forth fibrous roots, and appeared to have grown, or vegetated after the manner of a plant.

Horns make a conſiderable article in the arts and manufactures. Bullocks' horns, ſoftened by the fire, ſerve to make lanthorns, combs, knives, ink-horns, tobacco-boxes, &c.

Horns, when properly reduced by mills or other means, are alſo found to be excellent as a manure for ſome ſorts of land, where they can be procured in ſufficient quantity for the purpoſe. They are uſed occaſionally in Hertfordſhire, and ſome of the other counties in the vicinity of the metropolis, on the tillage as well as the graſs lands, with conſiderable ſucceſs. See Horn *Shavings*.

Horns, in *Chemiſtry*: theſe have been analyzed, and found to contain a very ſmall quantity of earthy matter. Mr. Hatchett burnt 500 grains of ox horn, and the reſiduum was only $1\frac{1}{2}$ grain, and not half of this was phoſphate of lime. Horns chiefly conſiſt of a membranous ſubſtance, which poſſeſſes the properties of coagulated albumen, and they probably contain a little gelatine. The horns of the hart and buck are exceptions, as they poſſeſs the properties of bone, and are compoſed of the ſame conſtituents. See Bone.

Horns, in *Rural Economy*, the well known ornaments which ſpring out from the heads of different ſorts of cattle, ſheep, and ſome other ſorts of live ſtock. It is by the horns that the breeds of many of theſe ſorts of animals are known and aſcertained. As the nature of ſuch excreſcencies muſt obviouſly be productive of much offal and waſte about the parts in which they are ſituated, it muſt of courſe be a great object of the breeder to get quit of them as much as poſſible, by the encouragement of the polled kinds, and the proper croſſing of them with the other ſorts where neceſſary. See Breed and Breeding.

Horn, in *Geography*, a town of Sweden, in Eaſt Gothland; 32 miles S. of Linkioping.

Horn, or *Hooren*, a town of Auſtria, famous for its beer made of oats, which ſupplies all the principal towns of Auſtria; 40 miles N.W. of Vienna. N. lat. 48° 37′. E. long. 15° 32′.

Horn, a town of Weſtphalia, in the county of Lippe, near which is a plain, called "Vinfeld, or the Field of Victory," ſuppoſed to be the place where Varus periſhed. N. lat. 51° 50′. E. long. 8° 52′.

Horn, an iſland on the coaſt of Weſt Florida, between Ship and Maſſacre iſlands; nearly 17 miles long, and about half a mile wide.

Horn's *Iſland*, a ſmall iſland near the coaſt of South Carolina. N. lat. 33° 7′. W. long. 79° 17′.

Horn, *Cape*, a cape on the ſouth coaſt of Terra del Fuego, or the moſt ſouthern extremity on a group of iſlands of unequal extent, lying before Naſſau bay, known by the name of Hermite iſlands, and ſituated in S. lat. 55° 58′, and W. long. 67° 46′. This cape is known at a diſtance by a high round hill over it. On the N.W. ſide are two peaked rocks like ſugar-loaves; they lie N.W. by N. and S.E. by S. by the compaſs, of each other. Some other ſtraggling low rocks lie W. of the Cape, and one S. of it; but they are all near the ſhore. From Chriſtmas Sound to Cape Horn, the courſe is E.S.E. ¼ E. diſtant 31 leagues. Between this cape and another called "Falſe or Miſtaken Cape," by Captain Cook, there ſeemed to be a paſſage directly into Naſſau-bay; ſome ſmall iſles were ſeen in the paſſage; and the coaſt, on the W. ſide, had the appearance of forming good bays or harbours. Captain Cook obſerves, though the doubling of Cape Horn is ſo much dreaded, ſo that, in the general opinion, it is more eligible to paſs through the ſtrait of Magellan, we were not once brought under our cloſe reefed topſails, after we left the ſtrait of Le Maire. He doubled the cape in 33 days, whereas it would have taken much longer time to have ſailed through the ſtrait of Magellan, with greater fatigue to the ſailors, and greater damage to the anchors, cables, ſails, and rigging of the ſhip. He thinks, that different circumſtances may at one time render it eligible to paſs through the ſtrait of Le Maire, and to keep to the eaſtward of Staten-Land at another. He alſo recommends, if neither wood nor water be wanted, to make no port and not to come near the land at all; for by keeping out at ſea, you avoid the currents, which, in his opinion, loſe their force at 30 or 36 miles from the land, and at a greater diſtance there are none.

Horn, *Cape*, (*Falſe*), a rocky point, which is the ſouthern point of the eaſternmoſt of Hermite iſles, three leagues E.N.E. from Cape Horn. Off this cape lie rocks that are white with the dung of fowls; and vaſt numbers were ſeen about them.

Horn, in the *Manege*; to give a ſtroke with the horn, is to bleed a horſe in the roof of the mouth, with the horn of a ſtag or roebuck, the tip or end of which is ſo ſharp and pointed, as to produce the ſame effect as a lancet. They ſtrike with the horn in the middle of the fourth notch or ridge of the upper jaw.

Horn is alſo a ſort of muſical inſtrument, of the wind kind; chiefly uſed in hunting, to animate and bring together the dogs and the hunters.

The horn may have all the extent of the trumpet.

The term for ſounding anciently was, wind a horn; all horns being in thoſe times compaſſed; but ſince ſtraight horns are come in faſhion, they ſay, blow a horn; and ſometimes, plainly ſound a horn.

There are various leſſons on a horn; as the recheat, double recheat, royal recheat, running or farewel recheat, &c. See Recheat.

Wind inſtruments of this name and form are as numerous and various as the animals that nature has armed with this weapon. The principal inſtrument, however, under that denomination, is the French horn, *cor de chaſſe*, hunting horn, or *corno da caccia*, which is not only uſeful in the field, but of capital utility in full pieces, ſacred and ſecular, in every orcheſtra.

The horn is a long tube, narrow at the top, and encreaſing in diameter to the end, where its mouth is very wide. It is curled up in a ring or rings, for the convenience of carriage and performance.

It has no holes or keys with which to form different tones; the whole ſcale is produced by different modifications of the breath at the mouth-piece, by the lips and tongue.

It has the ſame ſeries of notes as the trumpet, only an octave lower. All the muſic that is compoſed for it, is written in the key of C, and its pitch is altered now to any other key by crooks. At the beginning of a movement, the key is indicated by one of the ſeven letters of the gammut; as D horn, E ♭, F, or G horn, &c. Its natural ſcale is a regular ſeries of eight notes with the addition of an occaſional ſharp 4th, and the harmonics of the key below.

Attempts at *chromatic* horns have been made early in the laſt century, in Germany; the Meſſings were the firſt who pretended to perform in all keys in England, about the year 1740. Spandau, from Holland, was the firſt that was able to make the artificial notes agreeable, about 1772, and ſoon after, Ponto did wonders on this inſtrument. We have now (1803) four excellent performers on the *horn*, the Leanders and Petrides. Theſe laſt have the art of echoing paſſages in ſuch a manner as to ſeem at a great diſtance without quitting their place in the orcheſtra. It muſt, however, be diſcovered, by every diſcriminating hearer, that the factitious half notes, that are made by the hand in the mouth of the inſtrument, are ſounds of a different quality from the natural tones of the inſtrument. We have often thought that Ponto, with all his dexterity, produced ſome of theſe new notes with ſimilar difficulty, to a perſon ridden by the *night mare*, who tries to cry out, but cannot.

The Hebrews made uſe of horns, formed of rams' horns, to proclaim the jubilee; whence the name *jubilee;* which ſee.

The French horns uſed in concerts are uſually tuned an octave lower than the trumpets, to which they are cloſely allied in their principles. The whole length of tube yielding the fundamental note is often about ten feet, but it is the octave of this that performers in general are able to reach, in which the column of air in the tube vibrates in two equal parts: by blowing a little harder, the performer has it in his power to cauſe the column of air in the tube to divide itſelf into three equal parts, and whoſe vibrations conſequently have the ratio of $\frac{1}{3}$ to the fundamental, or VIII + V; a little harder blowing will occaſion three nodes or quieſcent points in the tube, and the ratio of the ſound will be $\frac{1}{4}$, or 2 VIII: harder ſtill produces $\frac{1}{5}$, or 2 VIII + III: the next note is $\frac{1}{6}$, or 2 VIII + V, a repetition of $\frac{1}{3}$ an octave higher: then $\frac{1}{7}$, which is a falſe or unnatural note, leſs than the minor 7th ($\frac{5}{9}$) by 24.9472 $\Sigma + 2m$, the note being 2 VIII + this falſe 7th above the fundamental tone of the inſtrument. By blowing ſtill harder each $\frac{1}{8}$th part of the tube's length yields its ſound, which has the ratio $\frac{1}{8}$, or 3 VIII: the next is $\frac{1}{9}$, and gives 3 VIII + II, or the true major tone: then $\frac{1}{10}$, or 3 VIII + III, a repetition of th: then comes $\frac{1}{11}$, which is 27.25171 $\Sigma + 2m$ ſharper than a true minor fourth, being 3 VIII + this falſe 4th: the next note is $\frac{1}{12}$, or 3 VIII + V, another repetition of $\frac{1}{3}$: then $\frac{1}{13}$, which alſo is a falſe note, 22.58107 $\Sigma + 2m$ lower than a true major ſixth, or 3 VIII + this falſe VIth: then $\frac{1}{14}$, which is a repetition of the falſe 7th, or $\frac{1}{7}$, but an octave higher: then $\frac{1}{15}$, or 3 VIII + VII or true major ſeventh, $\frac{8}{15}$: then $\frac{1}{16}$, or 4 VIII: then $\frac{1}{17}$, which is a falſe minor ſecond, 3.46819 leſs than the major ſemitone, $\frac{15}{16}$, or 4 VIII + this falſe 2d: then $\frac{1}{18}$, or 4 VIII + II, a repetition of $\frac{1}{9}$ above: then $\frac{1}{19}$ which is a falſe minor third, leſs by 9.27098 Σ + *m* than the true minor third, $\frac{5}{6}$, or 4 VIII + this falſe 3d: then $\frac{1}{20}$, or 4 VIII + III a repetition of $\frac{1}{5}$, two octaves higher: then $\frac{1}{21}$, or 3 VIII + V + the falſe 7th ariſing from $\frac{1}{7}$, or another falſe minor fourth (differing 41.1989 Σ + 3 *m*, from $\frac{1}{11}$ above), which is 13.9472 Σ *m* flatter than the true 4th. Next, by increaſing the ſtrength of the blaſt, will ariſe $\frac{1}{22}$, which is a repetition of the falſe former fourth $\frac{1}{11}$ as above, an octave higher: then $\frac{1}{23}$, which is a falſe minor fifth, 9.460262 + *m* ſharper than the ſemidiapente or flat fifth, $\frac{45}{64}$, or 4 VIII + this falſe 5th, which is 19.46026 Σ + 2 *m* ſharper than the major fourth or tritone, $\frac{32}{45}$: then $\frac{1}{24}$, or 4 VIII + V, a repetition of $\frac{1}{3}$ three octaves higher: then $\frac{1}{25}$, or 4 VIII + 2 III, the double (or ſquare) of $\frac{1}{5}$, and is 21 Σ + 2 *m* flatter than the true minor ſixth, or 4 VIII + this falſe 6th: then $\frac{1}{26}$, which is the repetition of the falſe major ſixth $\frac{1}{13}$, above: then $\frac{1}{27}$, or 3 VIII + 3 V the triple of $\frac{1}{3}$, is another falſe major ſixth (differing 23.58107 Σ + 3 *m* from $\frac{1}{27}$ above), or 4 VIII + a comma-redundant major ſixth, inſtead of the true VI: then $\frac{1}{28}$, which is a repetition of the falſe minor ſeventh or $\frac{1}{7}$ as above, but two octaves higher: then $\frac{1}{29}$, which is another falſe minor ſeventh (differing 31.0707 Σ + 3 *m* from $\frac{1}{7}$, above) and being 6.12449 Σ + *m* ſharper than the minor ſeventh, $\frac{5}{9}$, or 4 VIII + this falſe 7th: then $\frac{1}{30}$, or 4 VIII + VII, a repetition of $\frac{1}{15}$, an octave higher: and laſtly, $\frac{1}{31}$ is a falſe eighth leſs than the octave by 28.11748 Σ + 2 *m*, or 4 VIII + this imperfect VIII.

And thus we have all the natural horn or trumpet notes within the compaſs of five octaves, of which it may be obſerved, that the IIId, Vth, and VIIIth are the only *concords* found among theſe horn notes, which explains the reaſon of theſe being the only *Acute* Harmonics (ſee that article) which accompany a note: the IId and 6th compoſed by doubling theſe harmonics, the XIIth and the XVIIth; the VIth by tripling the XIIth; and the VIIth by combining the XIIth and XVIIth together, are the only other notes of the horn or trumpet which belong to the diatonic ſcale, this dieſis-deficient minor ſixth, and the comma-redundant major ſix, being however inapplicable to practice, and all the remaining ten notes, enumerated above, are anomalous, and have the effect of highly tempered notes or wolves in the practice of diatonic muſic, which is alone uſed at this day. Compoſers for the horn contrive to introduce as few of theſe falſe notes into their pieces as poſſible, and modern horn players alſo, by introducing their hand, or a block of wood, into the broad end of the horn, contrive, by habit, to correct many of the falſe intervals when playing in concert; but this is often done at the expence of clearneſs and fulneſs of tone.

The late Mr. Charles Claggett, by combining two horns or trumpets of different pitches together, ſo that the ſame mouth-piece, by means of a ſlide, acted on by the finger, could inſtantly be made to ſound either tube, which he called his *chromatic* French-horns and trumpets, pretended, that by this means all the falſe notes were corrected: which of courſe ſuppoſed, that they were all alike tempered or defective, and that theſe lay all the ſame way, but which is far from being the caſe, as will appear from the recapitulation of the temperaments in the margin, where, however, the flat fifth is omitted, being ſharpened + 9.460 Σ, and conſequently it would be further injured by a new tube, ſharper than the firſt, either 15.836 Σ (which is the mean among the above *flat* temperaments), or by any other difference of pitch in the two tubes, which might be adopted. We ſhall reſume the curious theory of this inſtrument in the article Trumpet.

	Σ
7th	— 24.747
VI	— 22.581
6th	— 21.000
4th	— 13.947
3d	— 9.271
2d	— 3.468

Horns are *tuned*, or brought to the proper pitch for playing in concert with other inſtruments, by means of ſhort pieces of tube of different lengths called crooks, which are put on or taken off below the mouth-piece, ſo as to lengthen or ſhorten the entire length of the tube, according as the pitch wants lowering or raiſing.

Horn, in *Architecture*, is ſometimes uſed for volute.

Horn is ſometimes alſo uſed for the hoof of a horſe, &c.

Horns, in *Botany*. See Medicago.

Horns *and Hedge-hog*. See Medicago.

Horns *of the Altar*. See Altar.

Horn, *Ammon's*. See Cornu *Ammonis*.

Horn-*beech Tree*, in *Gardening*. See Carpinus.

Horn-*bill*, in *Ornithology*, the genus buceros of Latin authors, calao of the French. This genus is diſtinguiſhed by having the bill convex, curved, and ſharp at the edge, large, ſerrated outwardly, and furniſhed with a horny protuberance or excreſcence on the upper mandible near the baſe; the noſtrils behind the baſe of the bill; tongue ſhort, and ſharp at the point; legs ſcaly; toes, three forward and one backward, the middle one connected to the outer as far as the third joint, and to the inner as far as the firſt.

Theſe birds ſubſiſt, for the moſt part, on fruits of various kinds, generally inhabit woods, and with few exceptions are natives of the old continent.

Species.

Bicornis. Front bony, flat, and bicornuted at the fore part. Linn. Amoen. Acad. *Hydrocorax Philippenſis*, Briſſ. *Rhinoceros avis prima varietas*, Will. *Calao*, Petiver. *Philippine horn-bill.*

Native of the Philippine iſlands; ſize of a common hen; the plumage above black, beneath white; quill-feathers with a white ſpot; tail rather long and black; tail-feathers ten in number, of which the exterior four on each ſide are white and thoſe in the middle black; legs greeniſh. A ſuppoſed variety is deſcribed in the 23d volume of the Philoſophical Tranſactions under the name of cayao vel calao, the bill of which is red, the belly black; and the back and rump brown-aſh; the legs ſcaly and reddiſh, and the claws black.

This ſpecies does not frequent watery places, but inhabits the higher lands, and is moſt common in mountainous ſituations. It feeds on fruits, among which it prefers the fig, almond, and piſtachia; theſe it ſwallows whole, and after digeſting the pulp caſts up the ſtones entire. Its voice is ſaid to reſemble the bellowing of a calf. The Indians worſhip this ſpecies as a deity.

Abyssinicus. Black; bony protuberance ſemicircular on the fore part; orbits, chin, and part of the throat naked, and violet brown; greater quill-feathers white. Gmel. *Grand calao d'Abyſſinia*, Buff. *Abyſſinian horn-bill.*

Reſembles a raven in ſhape, but is larger and more robuſt; it inhabits Abyſſinia, and ſubſiſts chiefly on the large green beetles which infeſt the plantations of grain. The fleſh has a fœtid odour. According to Bruce it lodges in thick trees, and is known by the name of "teir el naciba," or bird of deſtiny, on the frontiers of Sennaar. In the eaſtern parts it is called *abba gumba*, and in the weſt *erkooms*. The bill is black, edged with white, and about the baſe of the upper mandible each ſide is a tuft of briſtly feathers.

AFRICANUS. Black; protuberance on the bill like a horn, ſtraight and pointed. Gmel. &c. *Hydrocorax Africanus*, Briſſ. *Rhinoceros avis ſecunda varietas*, Will. *Brac ou calao d'Afrique*, Buff. *Trompette de Brac ou oiſeau trompette*, Labat. *African horn-bill.*

Deſcribed on the authority of Labat, who tells us it is the ſize of a turkey, with the plumage wholly black; the bill and head meaſured together were equal to eighteen inches; the figure of the bill not unlike that of the Philippine horn-bill, but having the appendage on the top of the upper mandible almoſt ſtraight at the point; the colour partly red, and partly yellow, and the edges and baſe of both mandibles black. This deſcription is adopted from father Labat by Buffon, nor does it appear to be better known ſince that time, as Sonnini, in the lateſt edition of Buffon, adds nothing to the deſcription that was previouſly given by that author. There is or was formerly a ſpecimen of this bird in the Leyden muſeum.

MALARARICUS. Black, beneath white; protuberance rounded above, acute towards the front, and reaching behind the eyes. Gmel. *Calao de Malabar*, Buff. *Pied horn-bill.*

The length two feet ſix inches, or three feet; both mandibles curved downwards, and ſharp at the tip; protuberance four inches and a half long, the greater part black, the middle, both of the protuberance and the bill, dirty yellowiſh-white; vent, quill, and outer tail-feathers tipt with white; legs ſtrong and black; claws long, hooked, and rather blunt. This ſpecies is known to devour rats, mice, and ſmall birds, raw fleſh, and vegetables; its motions are not diſſimilar to thoſe of the magpie, leaping forwards or ſideways with both legs at once; its note is various, being ſometimes hoarſe, or like the clucking of a turkey, and ſometimes weaker.

Sonnerat deſcribes a variety of this bird under the name of *Calao de la côte de Coromandel*, from its being found on the coaſt of Coromandel; the bill of this kind is curved, the protuberance egg-ſhaped; quill-feathers and tail, except the two middle feathers, which have their baſes black, are white. Dr. Latham is inclined to believe le calao des Philippines of Pl. Enl. is alſo a variety of this bird.

ALBIROSTRIS. Bill white.

This kind, which is recently deſcribed by Sonnini under the title of *le calao a bec blanc*, is nearly allied to the former ſpecies, B. malabaricus.

HYDROCORAX. Protuberance flattened forwards; the belly tawny. Gmel. *Hydrocorax*, Briſſ. *Corvi marini genus*, Cluſ. *Corvus indicus*, Bont. *Corbeau Indien*, Salerne. *Calao des Moluques*, Buff. *Indian horn-bill.*

A native of the Molucca iſles; its length two feet four inches; the protuberance cinereous, and behind whitiſh; crown blackiſh; cheeks and chin black; hind head and neck pale cheſnut; back, ſhoulders, and rump, with the wing and tail-coverts, brown; breaſt and belly blackiſh, the latter yellowiſh on the hind part; tail aſh or dirty white; legs grey brown; claws black. Feeds on the wild nutmeg, which renders its fleſh pleaſantly aromatic. This bird is frequently tamed to deſtroy rats and mice.

RHINOCEROS. Protuberance recurvate and pointed. Gmel. *Hydrocorax indicus*, Briſſ. *Rhinoceros*, Bontius. *Horned Indian raven, or rhinoceros bird*, Will. *Calao rhinoceros*, Buff. *Bec de l'oiſeau rhinoceros*, (*the bill*,) Buff.

Length three feet. This ſpecies inhabits India, preys on rats, mice, and carrion, and often follows the hunters for the entrails of their game. The bill is ten inches long, the protuberance eight inches. Inhabits India.

COLLARIS. Protuberance of the bill flat, grooved, and yellow; body and wings black; ſpace of the neck bright red; tail white. *Le calao de Waygiou*, Sonnini.

A ſpecies found in Waygiou, one of the Molucca iſles; its length is two feet and a half; and the bill ſeven inches and a half long.

VIOLACEUS. Protuberance large, and much elevated above the upper mandible, flat at the ſides, and marked with two longitudinal furrows; plumage above black, gloſſed with green, beneath white. *Le calao violet*, Levaillant.

Found in the iſle of Ceylon, and on the coaſts of Coromandel.

CORONATUS. Protuberance ſub-coronated, the bill large and yellow, or reddiſh; body above blackiſh, gloſſed with blue; abdomen and thighs yellowiſh white; tail rounded, white, and in the middle, black. *Le calao a caſque en croiſſant*, Sonnini.

Size of the rhinoceros horn-bill. This ſpecies is common in the Molucca iſles, where it inhabits great woods, is very ſavage, and feeds on carcaſes. The legs are blackiſh brown.

GALEATUS. Bill ſtraightiſh; protuberance nearly ſquare, the poſterior part rounded, the anterior flat. Gmel. *Calao a caſque round*, Buff. *Helmet horn-bill.*

Nothing more is known of this curious ſpecies than the bill and head, the ſtructure of which ſufficiently diſtinguiſhes it, and announces it to be of a larger ſize, and poſſeſſed of greater ſtrength than the generality of other birds in the ſame tribe. Specimens of the bill are not unfrequent in muſeums, and theſe vary in length from ſix to eight inches; the colour is uſually red, and the feathers, ſometimes attached at the baſe, are black.

PANAYENSIS. Greeniſh-black, beneath reddiſh-brown; protuberance ſharp above, and flat at the ſides. Gmel. *Calao à bec cizelé de l'iſle de Panay*, Sonnerat. *Panayan horn-bill.*

Size of a raven; the bill very long, arched, brown, with tranſverſe lateral wrinkles, and longitudinal orange furrows; orbits naked and brown; irides whitiſh. The head and neck of the female is white, with a large triangular greeniſh-black ſpot; legs lead colour. Inhabits the iſle of Panay.

MANILLENSIS. Above blackiſh-brown, beneath dirty-white; bill not ſerrated; protuberance ſmall. Gmel. *Calao de Manille*, Buff. *Manilla horn-bill.*

Native of Manilla; length twenty inches. The bill rather curved and acute at the tip; head and neck white, waved with brown; temples with a black ſpot; tail with a fulvous band acroſs.

NASUTUS. Front ſmooth; tail-feathers white at the baſe and tip. Gmel. *Crotophaga*, Forſkal. *Hydrocorax ſenegalenſis melanorhynchos*, Briſſ. *Calao à bec noir du Senegal*, Buff. *Black-billed horn-bill.*

Inhabits Africa, near the river Senegal; its ſize is about that of the common wood-pecker; it feeds on fruits, and, when young, is eaſily tamed. When young the bill of this bird is black, the colour changing gradually to red as the bird grows older; the body above is ſordid greyiſh, and white beneath; claws black. The bird called by Buffon *le tock* is conſidered as a variety of this bird; its ſize is nearly the ſame, except that its length is half an inch leſs; the body varied with grey and black, beneath and collar whitiſh; head and throat lineated with black; two middle tail-feathers grey, the reſt blackiſh, with the tip white.

ALBUS. Snowy-white; bills and legs black. Gmel. *White toucan*, Hawkeſworth It. *White horn-bill*, Lath.

A ſpecies deſcribed from a ſpecimen caught between the iſland of Tinian and Pulotimoen. Size of a ſmall gooſe; the bill narrow, and bent down; neck a foot long, and as ſmall as that of the crane.

Lobatus. Protuberance on the bill divided tranſverſely into ſeveral lobes; plumage black gloſſed with blue; on the ſhoulders a red brown ſpot; tail whitiſh. *Le calao a caſque feſtonné*, Levaillant.

Inhabits Batavia; length thirty inches, the bill five inches long and two thick, and the margin not denticulated; colour yellowiſh-white, with the baſe brown; eyes ſurrounded by a naked wrinkled ſkin which covers the baſe of the mandible, and deſcends upon the throat; the feathers on the back of the head are long; great quill-feathers deep black. The female is rather ſmaller than the male, and has no ſpace of red brown about the ſhoulders.

Obscurus. Protuberance rounded above, and divided into ſeven or eight lobes; body black; tail-feathers white. *Buceros plicatus*, Latham. *Indian raven*, Will. *Wreathed horn-bill.*

Native of New Guinea; the bill bent, and five or ſix inches in length. A ſuppoſed variety of this bird, found in Ceylon, has the protuberance on the bill divided into no more than five lobes.

Ginginianus. Bill bent, compreſſed laterally; protuberance pointed; body above green, beneath white; two middle tail-feathers dirty, rufous grey, with a band of black at the end; the reſt black rufous near the end, and white at the tip. *Buceros ginginianus*, Lath. *Le calao de Gingi*, Sonnerat. *Gingi horn-bill.*

Length two feet; the bill from the baſe to the middle with the protuberance black, the reſt white, the edges ſerrated; cheeks with an oval black bar under the orbits; legs black. Inhabits the coaſt of Coromandel.

Orientalis. Bill convex, above carinated, at the baſe protuberant; orbits naked, wrinkled, and cinereous; body blackiſh. Lath. *New Holland horn-bill.*

Inhabits New Holland; ſize nearly as large as the jay; the noſtrils open near the baſe of the bill.

Griseus. Protuberance ſloping before, abrupt behind; body grey. Lath. *Grey horn-bill.*

Native of New Holland; the crown black; bill yellow, with a black ſpot at the baſe; at the corner of each eye a tuft of briſtles, and behind a naked blue ſpot; wing-caſes variegated with black; quill-feathers white at the tip.

Viridis. Protuberance abrupt; body black; wings greeniſh. Lath. *Green-winged hornbill.*

The bill in this ſpecies is yellowiſh, at the baſe of the under mandible is a whitiſh blue ſpot; the outer tail-feathers, with the baſe of the quill-feathers, and the belly, white; legs blueiſh. Country unknown.

Ceylonensis. Bill denticulated, and without protuberance, black and white; head above, creſt, hind part of the neck, back, and coverts of the tail brown, blended with blueiſh grey. *Le calao gingala*, Levaillant.

Inhabits the iſle of Ceylon.

Javanicus. Bill not denticulated and without protuberance, brown with the baſe yellow; front, head above, and long feathers of the creſt red brown; body above and beneath black; neck and tail white. *Le calao javan*, Levaillant.

Length thirty inches; bill four inches and a half long; ſkin under the eyes, and chin down to the throat, deeply wrinkled; plumage finely gloſſed with greeniſh; legs browniſh, and the claws yellowiſh white. This ſpecies inhabits Batavia, where it is called *jaar vogel.*

Levaillant, to whoſe coſtly work on American and Indian ornithology, we are indebted for an account of the two preceding birds, has placed them in the calao or horn-bill tribe, and in this reſpect we follow his example, though not entirely ſatisfied with ſuch an arrangement. The abſence of a protuberance on the bill in both kinds ſeem clearly to remove them from the calao tribe, notwithſtanding they accord with that genus in ſome other particulars; in the denticulation of the bill and ſtructure of the claws *le calao gingala* agrees with the horn-bill, but le calao javan is ſtill leſs nearly allied, the bill in this kind being neither denticulated nor ſerrated at the margin, and it has only the claws of the true horn-bill to juſtify its reference to that genus. The laſt mentioned kind, from the form of the bill, appears in ſome degree connected with the corvus tribe.

Horn-*blend*, is a black or green indurated bole or clay, conſiſting of ſcaly particles, which are diſtinguiſhable from thoſe of mica, by being leſs ſhining, thicker, and rectangular. It is generally found among iron ores, and ſometimes intermixed with mica, forming a compact ſtone.

Horn-*coal*, in *Mining*, is applied to ſuch coal as dips almoſt equally on the *face* and the *end*, or in which the ſlines or lengthway joints of the coal croſs the water level diagonally, ſuch coal being often worked with ſaliant and re-entering angles, like the horn-works of a fortification, whence probably the name was derived; ſuch are often called half-workings of coal.

Horn-*coot*, a name given by fowlers to the great horn-owl. (See Strix *Bubo.*) A ſportſman who has got one of theſe birds, has a conſtant lure to draw together almoſt what numbers of others he pleaſes. The method of taking other birds by it is thus: the ſportſman fixes upon ſome ſingle tree which ſtands in the middle of an open field, and cutting the boughs of this into a regularity, he ſpreads nets all about it, and then places his owl within them, with a ſtring faſtened to its leg, by means of which the bird may be put in motion by the ſportſman as he ſtands at the diſtance under covert. There are to be two perches placed near one another, ſo that the owl can eaſily go from the one to the other. It is the nature of this bird to fly only by night, and therefore whenever it is ſeen by day-light, all the other birds quarrel with it, and abuſe it; even the hawks will make at it wherever it comes in their way. The ſportſman depends upon this; and as ſoon as he ſees any bird approach, or as ſoon as the owl, who ſees farther than he can, gives him the ſignal that ſome bird is in ſight, he pulls the ſtring, on which the owl, being diſturbed, flies from one perch to the other. This draws the ſtrange bird to her; and flying violently at her, it is entangled in the net placed with that intent, and the ſportſman muſt immediately run up and take it out, and replace the net for the next.

Horn-*fiſh*, an Engliſh name for the fiſh which we alſo call the gar-fiſh. It is properly a ſpecies of pike or eſox. See Esox *Belone.*

Horn-*fiſh*, in *Ichthyology*. See Cornutus *piſcis* and Biaculeatus.

Horn, *harts*, *cornu cervi.* The ſcrapings or raſpings of the horn of this animal are medicinal, and uſed in decoctions, ptiſans, &c.

Hartſhorn is too expenſive an animal bone to be employed for the common preparations of ammonia, for which purpoſe the bones, that are the refuſe of the ſtreets, are uſed; and if, after diſtillation, they be further burnt in an open fire, the reſidue in each inſtance will be the ſame, and chiefly phoſphate of lime. Hartſhorn, however, affords that particular modification of bone to which the preference is given for the purpoſes of pharmacy, and the conſumption is not ſo great, as to render the direction either too expenſive or difficult to be complied with. The phoſphate of lime left amounts to 57.5 of the bones employed; they appear alſo to contain a ſmall quantity of carbonate of lime and phoſphate of magneſia, and the remainder is animal matter, which paſſes away in various compound gaſſes under the circumſtances in which it is in this preparation directed to be placed.

Hartſhorn *jelly* is nutritive and ſtrengthening, and is ſometimes given in diarrhœas; but a decoction of burnt hartſhorn in water is more frequently uſed for this purpoſe, and is called hartſhorn *drink*. See JELLY.

The coal of hartſhorn, by being calcined with a long continued and ſtrong fire, is changed into a very white earth, called hartſhorn calcined to whiteneſs, or *cornu uſtum*. This earth is emplowed in medicine as an abſorbent, and adminiſtered in dyſenteries and labour-pains, which are ſuppoſed to be cauſed by acrid and ill-digeſted matters. This earth levigated is the baſis of Sydenham's white decoction, which is commonly preſcribed in theſe diſeaſes.

The white decoction or mixture of burnt hartſhorn is prepared by boiling down two ounces of hartſhorn burnt and prepared, and one ounce of Acacia gum, in three pints of water to two, conſtantly ſtirring, and afterwards ſtraining it. As burnt hartſhorn conſiſts entirely of phoſphate of lime, which is inſoluble in the preparation above directed: it is only brought into the ſtate of a very fine powder, and is kept mechanically ſuſpended in a mucilaginous liquor, on which account the gum is an uſeful addition, to the original formula in Bates's Pharmacopœia, which contains none. This is retained in the laſt pharmacopœia as one of thoſe eſtabliſhed forms which are in uſe with many practitioners. The *pulvis opiatus*, or powder of burnt hartſhorn with opium, is a compoſition of hard opium powdered, a drachm, hartſhorn burnt and prepared, an ounce, and cochineal powdered, a drachm, well mixed. This preparation affords a convenient mode of exhibiting ſmall quantities of opium, ten grains containing one of the opium. As the article by which it was divided is of no other conſequence, a ſmall quantity of cochineal is added to give it a colour, and thus to prevent it from being accidentally confounded with any of the numerous white powders kept in the ſhops. The former name of *pulvis opiatus* was particularly exceptionable, as ſometimes in the abbreviation of preſcriptions it was found to be miſtaken for *pulvis opii*. The ſalt of hartſhorn is a great ſudorific, and given in fevers with ſucceſs; and hartſhorn alſo yields, by diſtillation, a very penetrative volatile ſpirit.

HORN-*hipped*. A horſe is ſaid to be ſo, when the tops of the two haunch-bones appear too high.

HORN-*owl*. See STRIX *bubo*.

HORN *of Plenty*. See CORNUCOPIA.

HORN *with horn*, or HORN *under horn* (*cornutum cum cornuto*), is when there is common *per cauſe de vicinage*, intercommoning of horned beaſts. See COMMON and INTERCOMMONING.

HORNS *of Inſects*. See FEELERS and ENTOMOLOGY.

HORN *Shavings*, a term applied to the ſmall thin pieces of waſte horny matters which are formed in the preparation of different articles from this ſubſtance, in extenſive manufactories. Every ſort of refuſe material of this deſcription has been found beneficial upon land, when employed in the way of a manure, either as a top-dreſſing, or when turned into the ſoil. In the county of Hereford they make uſe of two deſcriptions of theſe ſorts of matters, the *ſmall* ſort, or turner's ſhavings, and the *large*, or refuſe pieces of horn, which are cut off by the ſaw or any other tool. The farmers purchaſe the firſt of theſe ſorts in London, at from about thirteen or fourteen ſhillings the quarter, or ten-buſhel ſack ſtuffed quite full, moſtly weighing about two hundred and a half. They are generally employed exactly in the ſame way and proportions per acre as the clippings of farriers, only they do not ſtand in need of being pricked into the ſoil when uſed upon the ſurface of the tillage lands. And it is the uſual practice with the large ſort to have them ploughed into the ſoil, about three months before the time of ſowing either wheat or barley. Shavings of theſe kinds are found, from actual trials, to anſwer well in moſt ſoils and ſeaſons, with the exception of ſuch as are very dry and parching, when they are ſaid not to work, by the farmers. The ſmall ſhavings ſhould be preferred, as being the moſt uſeful and advantageous when employed in the way of a dreſſing for land. See MANURE.

HORN, *Staining of*. See BONES, DYEING, IVORY, TORTOISE-*ſhell*, and WOOD.

HORNS, *Foſſil*, in *Natural Hiſtory*. The horns of animals, accompanied by their ſkulls and bones, or otherwiſe, are frequently found in the earth, but always in looſe and alluvial earth, or in caverns and fiſſures, near the ſurface, as was remarked by Dr. Woodward, and has been confirmed by ſubſequent obſervers. The foſſil horns which have been deſcribed are ſaid to be thoſe of

A Calf, deſcribed to be conic, crooked, with a pith and ray, not unlike a young budded horn. Dr. Grew's Rarities, p. 274.

Deer.—Horns reſembling thoſe of deer are ſaid to be frequently met with in the peat-pits in Ireland. Phil. Tranſ. Abr. by Lowth, vol. ii. p. 434.

Some of theſe are very large, and have very broad palms above the brow antlers, which are palmated alſo. (Gent. Mag. vol. lxxv. p. 1133.) Parts of a large deer's horn were found in a pit at Hutton Hill, in Somerſetſhire. (Jones's Phyſ. Diſq. p. 425.) In digging the Weſt India Docks, in the Iſle of Dogs, and alſo in the peat-pits near Newbury, in Berkſhire, deer's horns are met with. Parkinſon's Org. Remains, p. 95 and 98.

Horns of the fallow-deer are ſaid to have been found by M. Cuvier, in looſe ſtrata, in France. Phil. Mag. vol. xxxv. p. 387.

The horns of the mooſe-deer, very large, were dug up in 1781, at Beline, N. E. of Carrick, in Kilkenny, in Ireland, which are preſerved in Beſborough hall, near that place. (Tigh's Survey of Kilkenny, p. 98.) Others are mentioned by Mr. Jameſon, Shetland Iſles, p. 158. Horns of this kind of deer are alſo mentioned to be found in America. Jones's Phyſ. Diſq. p. 420.

The horns of a rein-deer were preſerved at Cheſter, which were dug up there. Benj. Martin's Nat. Hiſt. vol. ii. p. 245.

Elks.—Among the remains of ruminating animals in looſe ſtrata, M. Cuvier found the horns of a ſpecies of elk, now extinct. In Hardwick hall, near Alt Hacknal, in Derbyſhire, horns of a prodigious ſize are preſerved, which, it is ſaid, were found many years ago in peat, in the northern parts of Derbyſhire, and to be thoſe of an elk.

Goats.—The horns of goats are among thoſe enumerated by M. Cuvier, as found in the recent alluvial ſoils near Paris. Phil. Mag. vol. xxxv. p. 387.

Oxen.—The horns of different ſpecies of theſe, are ſtated by M. Cuvier to be found in the looſe recent ſoils of ſome vallies in France.

Stags.—The head and horns of a ſtag were dug up at Wattington park, in Oxfordſhire, mentioned by Dr. Plott, Staffordſhire, p. 161. In the peat of Plumſtead level, by the Thames. (Phil. Tranſ. vol. l. p. 109.) They have alſo occurred to M. Cuvier in the alluvia and putrid marſhes of France. Phil. Mag. vol. xxxv. p. 387.

In the accumulations of tufa from the petrifying ſprings at Matlock Bath, and formerly at Alport, near Yolgrave, in Derbyſhire, very large ſtags' horns have been found at different periods.

Urus.—The horns of this large animal have been found in the peat-pits of Ireland (Jameſon's Shetland Iſles, p. 158.); and according to M. Cuvier they have been found in the valley of the Somme, alſo in Suabia, Pruſſia, Italy, and England. Phil. Mag. vol. xxxv. p. 387.

The horns of very large unknown animals were found at St. Martins, near Commercy (Nicholſon's Journ. 8vo. xxiii. p. 159.); and others with the teeth and ſkull at Oelte, near Ninava, in Ruſſia, (Phil. Mag. vol. xxxv. p. 318.) At Hopton hall, in Derbyſhire, the pith of a horn 5½ inches diameter above the bone of the ſkull, and 16 inches long, is preſerved, which was found near Padley hall, 15 feet beneath the ſurface, in the deep-cutting at the W. end of the Butterly tunnel for the Cromford canal.

We have ſelected the above, in order to ſhew, that the horns found in a foſſil ſtate in the earth are of various kinds; and from the details which are preſerved reſpecting them, there ſeems no reaſon to think that horned animals exiſted, while the ſtrata were depoſiting, the moſt ancient of theſe horns being found in the alluvial flats or marſhes in the vallies, and no inconſiderable portion of them in peat, which proves their recent origin.

Sometimes extraneous foſſils have been called horns, which have no pretenſions to that character, an inſtance of which occurs in Derbyſhire, where the quarrymen and colliers find a conical and ſlightly bent foſſil, which they ſay is the bony core of a horn, or harn as they pronounce it; theſe are found, with ſome variations in the ſhape, in grit ſtone at Overton quarry, at Wickerſley quarry in Yorkſhire, in Wingeſworth, Cheſterfield, Alfreton, &c. In bind at Bretby, &c. Mr. William Martin, in his Petrificata Derbienſia, plate 8, ſhews them to be of vegetable origin, and denominates them Graminis ſulcatus. Some have ſuppoſed theſe horn-like foſſils to be a kind of cupped coralloid.

HORNS *of the uterus*, two proceſſes ariſing from the ſides of the fund. See UTERUS.

HORN-*work*, in *Fortification*, a ſort of out-work, advancing toward the field, to cover and defend a curtin, baſtion, or other place, ſuſpected to be weaker than the reſt: as alſo to poſſeſs a height, &c.

It conſiſts of a front and two branches; the front is made into two demi-baſtions and a curtin; its ſides, or flanks, are uſually parallel; though ſometimes they approach or contract towards the place, forming what they call a *queue d'yronde*, or ſwallow's tail.

When the flanks are too long, they ſometimes make epaulements to flank them. The parts of the horn-work next the country are to be defended by a parapet.

For the conſtruction of horn-works, produce the capital of the ravelin beyond the ſaliant angle A (*Plate* VI. *Fortification*, *fig.* 1.) to the diſtance A B, of about eighty toiſes; draw D B E at right angles to A B, in which take B D, B E, each equal to fifty-five toiſes; and on the outward ſide D E, trace the front of a polygon in the ſame manner as that of the body of the place, making the perpendicular B F eighteen toiſes, and the faces thirty. The branches D *a*, E *b*, of the horn-work, when produced, terminate on the faces of the baſtions, within five toiſes of the ſhoulders. The ditch of the horn-work is twelve toiſes, and its counterſcarp parallel to the branches, and in the front terminates at the ſhoulders. The capital of the ravelin before the front of the horn-work is thirty-five toiſes, and the faces terminate on the ſhoulders, or rather two or three toiſes beyond them; and the ditch before the ravelin is eight toiſes. There are ſometimes made retrenchments within the horn-work, ſuch as S, S; which are conſtructed by erecting perpendiculars to the faces of the ravelins, within twenty-five toiſes of their extremities. This retrenchment, like all others, has a parapet turfed only with a beam of eight feet before it, and likewiſe a ditch from three to five toiſes broad. When a horn-work is made before the baſtion, the diſtance of the front from the ſaliant angle of the baſtion is a hundred toiſes; and the branches terminate on the faces of the adjacent ravelins within five toiſes from their extremities; the reſt of the conſtruction is as before.

Two horn-works joined together make a crown-work, which is conſtructed by deſcribing from the ſaliant angle A (*fig.* 2.) of the ravelin, as a centre, an arc of a circle, with a radius of about 120 toiſes, cutting the capital of the ravelin produced at C; from the point C ſet off the chords C B, C F, each equal to a hundred and ten toiſes, and on each of theſe conſtruct the front of a polygon of the ſame dimenſions, as in the horn-work, that is, the perpendicular ſhould be eighteen toiſes, the faces thirty, and the branches terminate on the faces of the baſtions, within twenty-five toiſes of the ſhoulders. The ditch is twelve toiſes; the capital of the ravelin thirty-five, and its ditch eight. When the crown-work is made before the baſtion, the arc is deſcribed from the ſaliant angle of the baſtion with a radius of a hundred and twenty toiſes, and the branches terminate on the faces of the adjacent ravelins, within twenty-five toiſes of their extremities, &c. as before. Muller's Elem. of Fortif. p. 39, &c. See *Military* CONSTRUCTION.

HORN-*wrack*, in *Zoology*, the trivial Engliſh name of the genus Fluſtra, a tribe of Vermes in the Zoophyta order. See FLUSTRA.

HORNAGIUM, HORNAGE, in our ancient *Law Books*, ſeems to import the ſame with *horngeld*.

HORNBEAM, in *Botany*, &c. See CARPINUS.

HORNBEAM, in *Rural Economy*, a name commonly given to a tree of the deciduous ſort, which is occaſionally grown as timber, being made uſe of in turnery, as well as for the cogs of mills and other ſimilar purpoſes.

There are two ſpecies of this tree, the *common hornbeam*, and the *hop hornbeam*, but which afford the following varieties, as the *eaſtern hornbeam*, the *flowering hornbeam*, the *Virginia flowering hop hornbeam*, and the *American hornbeam*. The common hornbeam is a native of Europe and America, while the hop hornbeam is met with in Italy and Virginia. The common ſort grows to the largeſt ſize, and is probably the beſt kind for the purpoſes of timber.

All the ſorts of theſe trees are capable of being increaſed, either by ſeeds or from layers. The layer method ſucceeds at almoſt any ſeaſon of the year. The ſeeds may be ſown in the ſeed part of the nurſery any time in the autumn, after they have been a little dried upon a mat, or otherwiſe, for the purpoſe. This is beſt done in narrow beds to the depth of about two inches, which ſhould be kept perfectly clean and free from weeds. They muſt continue in theſe beds until the ſecond ſpring, when they come up, and require to be kept free from every ſort of annoyance, being watered in very hot ſeaſons. About the third ſpring the young plants may be ſet out in the nurſery ground, where they may continue until they are wanted for being planted as ſtandard trees.

In the layer method, a few good plants ſhould be provided for the purpoſe of ſtools; which in the Eaſtern ſort may be planted at a yard diſtant, but with the others a yard and a half, or even two yards apart. As ſoon as theſe plants have made a proper number of ſhoots, they ſhould be layered or laid down into the ground in the autumnal months, and in the courſe of about a twelvemonth they will generally become well rooted; at which time, or in the winter or early ſpring, they may be taken off, and planted out in the nurſery manner, taking care to bruſh up or mould the ſtool well, for the future produce of young ſhoots for additional ſupplies of layers. The plants in the nurſery ſhould be allowed about a foot or a foot and a half, the rows being at the diſtance of two feet. They may continue in this ſituation until they are wanted for being finally planted out, being carefully weeded, and the mould well ſtirred about them in the rows, by winter digging, &c. The Virginia hornbeam frequently throws out two leading ſhoots, which afterwards contend for the maſtery. Where this is the caſe, that which appears the beſt ſhould be preſerved, the other being removed by means of the knife. If this be neglected the trees will be liable to become forked in moſt caſes, and of courſe leſs valuable to the planter.

The common hornbeam affords excellent ſtakes and edders, beſides fuel wood and charcoal. The timber produced by it may be ranked with thoſe of the beech and ſycamore; but its principal ſuperiority conſiſts in its excellence for the purpoſes of *ſcreen fences* for ſheltering gardens, nurſery grounds, and different ſorts of young plantations, from the ſeverity of bad ſeaſons, &c. It bears cutting in, pruning, and clipping, extremely well, and, from its retaining its leaves during the winter ſeaſon, becomes particularly cloſe and impenetrable to the winds and ſtorms, keeping up a very ſteady temperature of the atmoſphere about the plants which it ſhelters. On this account alſo, it is found beneficial to be planted in mixture, or in occaſional rows, with many tender ſorts of trees in high expoſed aſpects, in the manner of the birch, to which it is preferable, as affording greater warmth in the winter. This ſort of tree ſhould perhaps be more attended to as a nurſe for young expoſed plantations of trees, than has hitherto been the caſe, in conſequence of its qualities in this way being but imperfectly known.

The eaſtern ſort is particularly valuable where low hedges of deciduous trees are wanted, from its inferior growth, and the ſmallneſs of its leaves and cloſeneſs of the branches.

HORNBEAM *Pollengers*, a denomination given by ſome to trees of this ſpecies, which have been lopped, and are of about twenty years growth. See TREE.

HORNBEAM *Wood, Petrified*, in *Natural Hiſtory*. In a breach of the embankments or tide walls of the Thames, which happened near Purfleet, as deſcribed in the Philoſophical Tranſactions, N° 325, the Rev. W. Derham diſtinguiſhed hornbeam among the other woods and vegetable products found a great way below the ſurface of the marſhes; belonging, however, to the claſs of recent or peat foſſils, and not to thoſe of the ſtrata.

HORNBERG, in *Geography*, a town of Wurtemberg, in the Schwartzwalde; 38 miles S.W. of Stuttgard.—Alſo, a town of Germany, belonging to the Teutonic knights, near the Neckar; 18 miles E. of Heidelberg.

HORNBURG, a town of Weſtphalia, in the principality of Halberſtadt, on the Ilſe; 10 miles N.E. of Goſlar.

HORNBY, is a ſmall market town and chapelry in the pariſh of Melling, hundred of Lonſdale, Lancaſhire, England. It is ſeated on the eaſtern banks of the river Loyne or Lune, over which is a ſtone bridge of three arches. A religious hoſpital, or priory, was eſtabliſhed here at an early period; and at the diſſolution was granted to the Monteagle family, who alſo poſſeſſed an old baronial manſion called Hornby caſtle, which ſtands on an eminence about half a mile from the town. According to Camden, this "noble caſtle was founded by N. de Mont Begon, and owned by the Harringtons and Stanleys, barons of Monteagle, deſcended from Thomas Stanley, firſt earl of Derby." It has a large ſquare tower, and a lofty round one; has lately undergone a complete repair; and is now the property and reſidence of John Marſden, eſq. Hornby church, which is ſubordinate to that of Melling, is a neat edifice, and diſtinguiſhed by an octagonal tower. Hornby is diſtant from London 248 miles, and contained, according to the late return, 87 houſes, and 414 inhabitants. The cotton manufactures conſtitute the chief buſineſs of the place. A fair or market is held every alternate Tueſday for cattle; here is alſo an annual fair of two days. Beauties of England and Wales, vol. ix.

HORNCASTLE, a market town and pariſh in a ſoke of that name, in Lindſey diviſion of the county of Lincoln, England, is ſituated upon an angular piece of land formed by a ſmall rivulet named Waring, and the river Bain. The latter is navigable from the Witham to this place. The town derives its name from *horn* or *hyrn*, in Saxon ſignifying an angle or corner, and a caſtle or fortification. Traces of the caſtle are yet viſible; the whole formerly occupied an area of nearly twenty acres. The foundations ſhew that it was in the form of a parallelogram, and incloſed a great part of the preſent town. Numbers of Roman coins have been found here; and there lately exiſted, near the river, one of thoſe intricate circles called Julian's bower. Theſe circumſtances, and its ſituation on a lingula or tongue of land, induced Stukely to conſider it a Roman ſtation, and to place here the Bannovallum of the geographer Ravennas. The town was incorporated in the time of queen Elizabeth, with the privilege of holding a weekly market on Saturdays, and an annual fair; two other fairs have been ſince eſtabliſhed. A conſiderable trade in leather is carried on here; the place being principally occupied by tanners. Horncaſtle is 139 miles N. from London, and in the year 1801 contained 403 houſes, and 2015 inhabitants. Here are a good grammar, and a charity ſchool. Beauties of England and Wales, vol. ix.

HORNCASTLE *Navigation*, was made, in purſuance of acts of parliament obtained in 1792 and 1800, from the old Witham river near Tatterſhall, to the bridge in the town of Horncaſtle, a diſtance of about 11 miles, in the county of Lincoln. See CANAL.

HORNE, in *Biography*. See HOORNE.

HORNE, GEORGE, a prelate in the church of England, was born at Otham, near Maidſtone, in Kent, in the year 1730. His father, who was rector of Otham, undertook the early claſſical education of his ſon, for which he was perfectly qualified. When he was thirteen years of age, he was ſent to the Maidſtone grammar ſchool, then under the care of a maſter eminent for his knowledge in ancient literature. A Maidſtone ſcholarſhip in the univerſity of Oxford becoming vacant, he was, when he was about fifteen years of age, ſent to the Univerſity college, where he applied himſelf with ſo much diligence and aſſiduity to his ſtudies, that he was greatly diſtinguiſhed among his contemporaries, as well for his attainments in polite literature, as for that ſpecies of knowledge which is ſubſervient to the illuſtration of the ſcriptures. In the year 1749 he took his degree of B.A.; and in the following year, upon a vacancy taking place in a Kentiſh fellowſhip at Magdalen college, he was elected to fill it. Mr. Horne at this time had been deeply tinctured with the myſteries of Hutchinſonianiſm, which led him to do his utmoſt to bring diſcredit on the ſyſtem of the immortal ſir Iſaac Newton. What he publiſhed on this occaſion, without his name, he was ſincerely aſhamed of afterwards, and never ſuffered it to be reprinted. In 1752 he took his degree of M.A., and in the ſame year engaged in a controverſy on the ſubject of the Cherubim, in the Gentleman's Magazine. His object was to prove that the Cherubims were a repreſentation of the Trinity. In 1753 he entered into orders, and ſoon obtained a high reputation as a preacher, on account of the excellence of his compoſitions and the gracefulneſs of his elocution. In 1764 Mr. Horne was admitted to the degree of doctor in divinity, and in 1768 he was elected preſident of Magdalen college, and in 1771 he was appointed chaplain in ordinary to his majeſty, in which capacity he officiated for ten years. In the following year, when a number of the clergy were about to apply to parliament for relief in the matter of ſubſcription to the liturgy and the thirty-nine articles of the church of England, Dr. Horne did all in his power to defeat their object. He was next appointed vice-chancellor of the Univerſity, in which ſtation he continued till the month of October 1780, and no one ever preſided in that poſt with a more conſcientious attention to its duties, or a greater ſhare of popularity. The vice-chancellorſhip introduced him to the acquaintance of lord North, by whoſe intereſt he was promoted to the deanery of Canterbury, in which ſituation he acquired the reſpect and eſteem of all, and frequently gratified the public by preaching in the cathedral. In 1790 Dr. Horne was advanced to the epiſcopal ſee, by being nominated to the biſhopric of Norwich, ſoon after which he reſigned his preſidentſhip of Magdalen college. At this period, his health, which had ever been delicate, was in a precarious ſtate, and after he had taken poſſeſſion of his ſee, his friends ſaw, with extreme ſorrow and regret, that he declined very rapidly. From two viſits to Bath he received ſenſible benefit, and in the autumn of 1791 he ſet out on a third viſit to the ſame place. During his journey he was attacked with a paralytic ſtroke, from the effects of which he never recovered, though he was enabled to reach to the end of his journey. After lingering for ſome weeks, during which he retained the full poſſeſſion of his faculties, and diſplayed exemplary patience, compoſure, and cheerfulneſs; he died at Bath on the 17th of January 1792, in the ſixty-ſecond year of his age, animated by thoſe hopes which ſpring from the conſciouſneſs of a well ſpent life, and the promiſes of the goſpel. The works of this excellent divine were numerous, and many of them valuable. His principal piece was a "Commentary on the Book of Pſalms, &c." which made its appearance in 1776, in two volumes 4to. It was his favourite performance, and had coſt him the beſt part of twenty years in the compoſition. Dr. Horne was diſtinguiſhed by a conſiderable ſhare of various learning, which he conſecrated, according to his judgment, to the cauſe of truth, and the beſt intereſts of mankind. His virtue was ſincere and ardent, and his life exemplarily virtuous.

HORNECK, Anthony, a learned divine, was born in the lower Palatinate in 1641, and educated at Heidelberg under Spanheim. At the age of 19 he came to England, and entered himſelf of Queen's college, Oxford, of which he was afterwards the chaplain. He was now incorporated M.A. from the univerſity of Wittemberg, and not long afterwards obtained the vicarage of Allhallows in Oxford. He retained this living only about two years, and in 1665 removed into the family of the duke of Albemarle, in the capacity of tutor to his ſon lord Torrington. The duke preſented him with the rectory of Doulton in Devon, to which was afterwards added a prebend in the cathedral of Exeter. In 1671 he became preacher at the Savoy, and in 1693 prebendary of Weſtminſter. He was alſo honoured with the appointment of chaplain to king William and queen Mary. He died in 1696 of a ſevere attack of the ſtone in the fifty-ſixth year of his age. He was a man of very extenſive learning, and particularly converſant in the Oriental languages, eccleſiaſtical hiſtory, controverſial theology, and caſuiſtry. Few men, it is ſaid, were ſo frequently conſulted in caſes of conſcience as Dr. Horneck. He was author of ſeveral pious and learned works, which are as judicious as they are learned, and which are ſtill known and admired. Gen. Biog.

HORNED, a term employed, in ſome diſtricts, to ſignify the goring or wounding with the horns of cattle.

Horned *Cattle*, a term often made uſe of by farmers to ſignify neat-cattle, or animals of the low kind.

Horned *Poppy*. See Poppy.

HORNET, Crabro, in *Entomology*, a ſpecies of *Veſpa*; which ſee.

Hornet-*fly*, a very large two-winged fly, which has the ſhape and colours of the hornet, and is, at firſt ſight, ſcarce to be diſtinguiſhed from it. The principal colour of the body of this fly is yellow; but it has two long and large black lines placed tranſverſely on it, and has a black corcelet, and a yellow head.

Theſe lay, at a proper ſeaſon, a large number of oblong white eggs, which hatch into large and long worms, whoſe chief food is the worms and nymphs of the humble bees. The worm of this fly is continually found in the neſts of theſe bees, where it never meddles either with the wax or honey, but preys only on the young offspring of the creature.

HORNGELD ſignifies a tax, within the foreſt, to be paid for the feeding of horned beaſts. See Geld.

"Quietum eſſe omni collectione in foreſta de beſtiis cornutis, &c. Et ſint quieti de omnibus geldis, et danegeldis, et wodgeldis, et ſenegeldis, et horngeldis, &c."

To be free of horngeld, is a privilege granted by the king to ſuch as he thinks good.

HORNHEAD, in *Geography*, a promontory on the north-weſtern coaſt of Ireland, at the extremity of a ſmall peninſula, called by the ſame name, in the county of Donegal, province of Ulſter. It is ſuppoſed to have been mentioned by Ptolemy under the name of Borcum promontorium, and it is ſtill ſometimes called North Cape. Hornhead is the weſtern point of Sheephaven, a harbour little frequented, and was probably called from two ſharp ſummits like horns at the top of the cliff, which are a good object for the mariner. The peninſula of Hornhead has been pointed out by Dr. Hamilton (Tranſactions of the Iriſh Academy) as exhibiting the effects of drifting ſands in a ſtriking manner. In 1787 it contained veſtiges of encloſures ſo ſmall and ſo numerous, as to mark the former reſidence of a number of families in a ſpot which then exhibited nothing but

> "——— A deſert, ſalt and bare
> The haunt of ſeals, and orcs, and ſeamews' clang."

Near Hornhead is a curious and frightful phenomenon called M'Swine's gun. By decompoſition of part of the rock, the waves have perforated a cave many yards in diameter, which extends about ſixty feet into a rock, making part of the mainland, and nearly horizontal with the level of the ſea at high and low water-marks. When the wind blows due north and the tide is half in, this gun of M‘Swine's is ſeen to ſpout ſea-water far higher than the eye can reach, with an exploſion that may be heard at a diſtance of above twenty miles. Hornhead is near Dunfanaghy. N. lat. 55° 13′. W. long. 7° 51′.

HORNING, in *Scots Law*, a writ iſſuing from the ſignet, in his majeſty's name, at the inſtance of a creditor againſt his debtor, commanding him to pay or perform within a certain time, under pain of being declared a rebel, and by a caption put in priſon.

HORNIUS, George, in *Biography*, was born in the Palatinate about the cloſe of the 17th century. He was in high eſtimation as a writer of hiſtory; and his chief works are "Hiſtoria Eccleſiaſtica ad ann. 1666:" "De originibus Americanis:" "Geographia vetus et nova:" "Hiſtoria Philoſophica." He viſited England, and attached himſelf to the Preſbyterian party; and on his return he occupied the chair of hiſtory in the univerſities of Harderwyck and Leyden. He died in 1750.

HORNOS, in *Geography*, a town of Sweden, in Weſt Bothnia; 15 miles S. W. of Umea.

HORNOY, a town of France, in the department of the Somme, and chief place of a canton, in the diſtrict of Amiens; 15 miles W.S.W. of Amiens. The place contains 1190, and the canton 10,661 inhabitants, on a territory of 152½ kiliometres, in 24 communes.

HORNPIPE, in *Muſic*, the name of an inſtrument, and of a tune. The hornpipe air, ſo frequently danced by our ſailors and active ſtage dancers, is perhaps the only national tune, or melody, which we can call our own. It is of high antiquity, and can be traced to the ancient Britons, perhaps before the invaſion of Julius Cæſar, or the Saxons. The inſtrument, in our old authors, is called the *Pip-corn*, or pipe of Cornwall. And when the Britons were driven by the Saxons, ſome into Wales, ſome into Armorica, or Britanny, and ſome into Cornwall, we may ſuppoſe the inſtrument and tune to have been preſerved in the laſt mentioned province, and to have retained its name. The inſtrument called a hornpipe, though unknown in England, was a few years ago ſo common in Wales, according to the late honourable Danes Barrington, that even the ſhepherd's boys uſed to play on it. It conſiſts, ſays Mr. B., of a wooden pipe with holes, at proportional diſtances, and a horn at each end, the one to receive the wind from the mouth of the player, and the other to produce the ſounds, as modulated by the performer. Mr. Barrington communicated to the Antiquarian Society a delineation and deſcription of this ruſtic inſtrument (Archæologia, vol. iii. p. 33.), and conjectured that it originally gave the name to the tune called a hornpipe.

Chaucer, in his Romant of the Roſe, fol. 135, mentions this inſtrument.

Controue he would, and foule faile
With Hornpipes of Cornewaile.

Mr. Jones, in one of his tracts, ſays that the pibgorn, or hornpipe, is peculiar to the iſle of Angleſea; but the word, in old Engliſh and French authors, implies a tune as well as an inſtrument.

The Lancaſhire hornpipes, Cheſhire rounds, and ſome of our very old country dances, are, perhaps, genuine Engliſh melodies; but melody, till after the invention of the opera at Florence in 1600, was little cultivated in any part of Europe. We had very good church muſic in our cathedrals, from the time of Tallis and Bird, to the arrival of Handel, in 1710; but being ſet to Engliſh words, it never reached the continent.

HORNSEY, or Hornsea, in *Geography*, a market town and pariſh in the diviſion of Holderneſs, and Eaſt Riding of the county of York, England, is ſeated near a mire, or lake, on the coaſt. Of this town our topographers have not recorded any hiſtorical particulars. Gough, in his addition to Camden's Britannia, merely ſtates that Hornſey "has a high ſpire, formerly a ſea mark, but now much ruined through the inability of the inhabitants to repair it. An inſcription in the town ſays that it was once ten miles from the ſea; though at preſent only one. Not many years ago a ſmall ſtreet, called Hornſey-bek, adjoined to the ſea, was waſhed away, except two or three houſes; and about Skipſie, a few miles north of Hornſey, they have a tradition of a town called Hide being devoured by the ſea. Amber is found in large maſſes on this coaſt." There are a ſmall weekly market on Mondays, and two annual fairs. In 1800 the town conſiſted of 133 houſes, and 533 inhabitants.

Hornsey, a pariſh in the hundred of Offulſton, and county of Middleſex, England. The village is five miles north of Holborn-bars, London, and is pleaſantly ſeated in a valley, through which the New river is conducted in its artificial channel. The pariſh conſiſts of about 2200 acres of land, of which 50 only are arable, about 120 wood, 150 waſte, or common, and the remainder meadow and paſture. Beſides the village of Hornſey, the following hamlets are within the pariſh: Crouch-end, Muſwell-hill, Stroud-green, and a conſiderable part of Highgate.

The manor of Hornſey has belonged, from time immemorial, to the biſhops of London, who had formerly a palace here. This is ſuppoſed to have ſtood on a ſpot called Lodge-hill, where are ſtill to be ſeen the remains of a moat. In this pariſh, between Highgate and Hornſey, the New river was formerly carried over a valley by a wooden aqueduct, 178 yards in length. A more laſting channel, of clay, &c. was made for it in 1776. Many of the houſes here are the reſidences of London merchants. From the boldneſs of the hills around, and finely wooded character of the country, Hornſey may be juſtly conſidered a very delightful and eligible place of reſidence. In the year 1801, the pariſh was eſtimated to contain 458 houſes, and 2716 inhabitants. Lyſons's Environs of London, 4to. vol. iii.

HORNSTANDET, a peninſula on the coaſt of Sweden, in the gulf of Bothnia, about 30 miles in circumference. N. lat. 61° 39′. E. long. 17° 16′.

HORNSTEDTIA, in *Botany*, is a genus named by Retzius in honour of Dr. Clas Frederick Hornſtedt, lecturer on natural hiſtory and medicine at Lincopin in Sweden, and Fellow of the Academy of Sciences at Stockholm. Retz. Obſ. faſc. 6. 18. Willd. Sp. Pl. v. 1. 9.—Claſs and order, *Monandria Monogynia*. Nat. Ord. *Scitamineæ*, Linn. *Cannæ*, Juſſ.

Gen. Ch. *Infloreſcence* a conical ſpike, gaping at the top, nearly radical. *Calyx* two-cleft. Tube of the *corolla* long, thread-ſhaped; limb double; the exterior coat three-cleft; nectary tubular. *Capſule* of three cells, oblong. *Retzius*.

Obſ. The two ſpecies of this genus deſcribed by Retzius, and which we are about to mention, are ſuppoſed by Dr. Smith to belong to different genera. He imagines that *H. Scyphus* is an *Amomum*, and *H. Leonurus*, a *Kempferia*, but as this is merely a ſuggeſtion, we retain the genus till we learn further particulars concerning it from Dr. Roxburgh.

1. *H. Scyphus*, Retz. Willd. n. 1. (Amomum ſcyphiferum; Retz. Obſ. faſc. 3. 68.)—"Leaves downy underneath."—A native of groves at the foot of the mountains near Malacca.—*Roots* ſpreading horizontally. *Stems* about eight feet high, very tough. *Leaves* ſeſſile, ſmooth above. *Flowers* in cluſters, monopetalous, of a fine ſcarlet colour. *Seeds* numerous, club-ſhaped, oblong. The plant has ſcarcely any ſmell.

2. *H. Leonurus*. Retz. Willd. n. 2. (Amomum Leonurus; Retz. Obſ. faſc. 3. 69.)—"Leaves ſmooth, fringed."—Found in the thickeſt receſſes of groves in Malacca.—*Root* ſimple, having a hot aromatic taſte. *Stems* ſimple, ſolitary, nodding towards the top. *Leaves* alternate, fringed, with golden-coloured briſtles, ſmooth on both ſides, ſmelling like cloves. *Calyx* ſhorter than the tube of the flower. *Germen* inferior, nearly globoſe, ſmall, covered with dark ferruginous hairs. *Seeds* numerous.

Neither of theſe ſpecies appear to have been known to Rumphius, Rheede, Plunkenet, nor any other author who has applied himſelf to the deſcription of Oriental plants.

HORNSTEIN, in *Natural Hiſtory*, is a name given in Germany to the ſiliceous ſtone, called in England chertz, or chert.

HORNY Excrescences, in *Surgery*. It appears, from ſome inſtances on record, that excreſcences of a horny nature have been met with on the human ſubject, which, although they have much excited the attention of naturaliſts, muſt be conſidered entirely as *Luſus Naturæ*.

A remarkable caſe of this deſcription is that of a female who had two complete horns growing on her head, one of which, with the portrait of the woman, is preſerved in the Britiſh Muſeum, and the other at Oxford.

A far more recent inſtance, however, has been obligingly communicated to us by Dr. William Roots of Kingſton on Thames, who, in February 1811, amputated an excreſcence of this ſort, exactly reſembling a *ram's horn*, from the head of a man, between fifty and ſixty years of age, a drawing of which in its growing ſtate, as well as the horn itſelf, he has preſented to the collection of Mr. Aſtley Cooper.

The account given by Dr. Roots of this extraordinary caſe is, that John Kennedy, a gardener at Thames Ditton in Surrey, in the year 1796 had a tumour growing on the ſuperior part of the occiput, which was taken off with the knife by the doctor's father in about three years from its commencement. Soon after its removal, a horny ſubſtance began to make its appearance on the ſame place, which continued growing for four years, till it accidentally fell off in a moſt unexpected manner, being at that time not more than three inches in length; and it ſhould be obſerved, that the ſurface of the part it grew from, on its dropping off, was perfectly ſmooth, without any the ſlighteſt hemorrhage, and reſembling the ſuperficies of the ſtag's head, when his horns have recently dropped. In a ſhort time after a new horny ſprout ſhot forth, which, as it grew, took on the exact form and crooked figure of a *ram's horn*, and having increaſed during ſeven years, without any diſpoſition to fall off, to the great inconvenience of the poor man, he conſented at length to its removal; in the performance of which, from the parts underneath being very vaſcular, a conſiderable hemorrhage enſued.

Now it appears probable from this, ſays the doctor, that the horn, had it been ſuffered to remain longer on the head, would have attained a much larger ſize, nature having in a playful mood moſt abundantly ſupplied it with veſſels for that purpoſe. Its having likewiſe been ſhed in the former inſtance *without bleeding*, induces Dr. Roots to conclude, that as the ſources of its nutriment continued open, it had not arrived at that ſtate of perfection, when the gradual cloſing of the veſſels would occaſion a ſpontaneous removal, without any hemorrhage taking place, as is always obſerved to be the caſe with animals who drop their horns at regular and ſtated periods. Some years ſince we ſaw ſir James Earle remove a complete horn, about three inches long, from the ſcrotum of a patient in St. Bartholomew's hoſpital. We have always believed, that all horny excreſcences, which are occaſionally formed on the ſkin of the human ſubject, are originally encyſted tumours, the cyſt of which very curiouſly aſſumes the power of ſecreting horn, inſtead of fat, a pappy ſubſtance, or a fluid like honey, as commonly happens in the reſpective caſes of ſteatoma, atheroma, and meliceris. We think that the particulars of the caſe, communicated to us by Dr. Roots, tend to corroborate this opinion, ſince, before any horn made its appearance, there was a tumour, and, after the firſt horn dropped off, a ſurface, which was quite ſmooth, which did not bleed at all, and which, in fact, muſt have been a part of the cyſt, preſented itſelf to notice. In the caſe of the horn, which was cut off in St. Bartholomew's hoſpital, the truth of the preceding ſentiment, concerning the formation of horny excreſcences on the human race, was almoſt demonſtrated. There was at firſt a tumour, which burſt, and from the inſide of which the horny matter was gradually protruded.

HORNYGOLD's Keys, in *Geography*, iſlets and rocks on the Spaniſh main, near the Moſquito ſhore. N. lat. 15° 40′. W. long. 82° 18′.

HOROCHAW, a town of Poland, in Volhynia; 32 miles S.W. of Lucko.

HORODEK, a town of Ruſſian Lithuania, in the palatinate of Wilna; 68 miles S.E. of Wilna.—Alſo, a town in the palatinate of Brzeſc; 38 miles S.E. of Brzeſc.

HORODICTIC Quadrant. See Quadrant.

HORODISCZE, in *Geography*, a town of Auſtrian Poland, in Galicia; 60 miles E. of Lemberg.—Alſo, a town of Lithuania, in the palatinate of Minſk; eight miles S.E. of Minſk.

HORODLA, a town of Auſtrian Poland, in the palatinate of Belcz, on the Bug; 32 miles N. of Belcz.

HOROGRAPHY, compounded of ὡρα, *hour*, and γραφω, *I write*, the art of making or conſtructing dials; called alſo, *horologiography*, *gnomonica*, *ſciatherica*, *photoſciatherica*, &c. See Dialling.

HOROLOGIOGRAPHY, the art of making or conſtructing dials. See Dialling.

HOROLOGIUM, Ὡρολογιον, compoſed of ὡρα, *hora*, *time*, *hour*, and λογος, *ſpeech*, *diſcourſe*, a common name, among ancient writers, for any inſtrument or machine for meaſuring the hours. See Chronometer.

Such are our clocks, watches, ſun-dials, &c. See Clock, Watch, Dial, and Clepsydra.

Modern inventions, and gradual improvements, have given birth to ſome new terms that come properly under this head, and annexed new meanings to others totally different to what they had originally. All chronometers that announced the hour by ſtriking on a bell were called clocks; thus, we read of pocket-clocks, though nothing could ſeem more abſurd than to ſuppoſe that a clock, according to the modern idea, ſhould be carried in the pocket. In like manner, all clocks that did not ſtrike the hour were called watches, or time-pieces; and the different parts of a ſtriking clock were diſtinguiſhed by the watch-part, and the clock-part; the former, meaning that part which meaſures the time, and the latter, the part which proclaims the hours. In the report of ſir

Iſaac Newton to the houſe of commons, anno 1713, relative to the longitude act, he ſtates the difficulties of aſcertaining the longitude by means of a watch; yet it is obvious, from ſeveral circumſtances, that his remarks were directly to be underſtood of a time-piece regulated by a pendulum; for his objections are founded on the known properties of the pendulum, ſome of which differ eſſentially from the properties of the balance and ſpring. It is alſo to be remembered, that all the attempts of Huygens for finding the longitude were by means of pendulum clocks, that did not ſtrike the hour, and conſequently, according to the language of the times, were called watches. At this time ſuch machines for meaſuring time as are fixed in their place, are called clocks if they ſtrike the hour; if they do not ſtrike the hour, they are called time-pieces; and when conſtructed with more care, for a more accurate meaſure of time, they are called regulators. Some artiſts of late have affected to call ſuch watches as were conſtructed for aſtronomical and nautical obſervations, by the name of *time-pieces*, probably to intimate that they poſſeſs the advantages of thoſe conſtructed with a pendulum.

Mr. John Harriſon firſt gave the name of time-keeper to his watch, for the performance of which he received from parliament the ſum of twenty thouſand pounds. See CHRONOMETER.

Horologium, *Horologion*, is alſo a name the Greeks give to their liturgy, or breviary; becauſe it contains the daily hours, or the ſeveral offices to be rehearſed each day.

The Greeks call it ὡρολόγιον, which anſwers to what in Latin and Engliſh we call *diurnum*, or *diurnal*.

The ὡρολόγιον is the breviary of the Greeks.

HOROMETRY, the art of meaſuring or dividing the hours, and keeping an account of time.

HOROPTER, in *Optics*, is a right line drawn through the point where the two optic axes meet, parallel to that which joins the centres of the two eyes, or the two pupils.

Such is the line A B (*Plate* VI. *Optics*, *fig.* 3.) drawn through the point of concourſe C, of the optic axes of the eyes D and E, parallel to H I, which joins the centres of the eyes H and I.

It is called horopter; as being found, by experience, to be the limit of diſtinct viſion.

The horopter has ſeveral properties in optics, which are deſcribed at large in Aguillonius, Opt. lib. ii. Diſſ. 10.

Horopter, *Plane of the.* See PLANE *of the Horopter.*

HOROSCOPE, in *Aſtrology*, the degree or point of the heavens riſing above the eaſtern point of the horizon, at any given time when a prediction is to be made of a future event; as, the fortune of a perſon then born, the ſucceſs of a deſign then laid, the weather, &c.

The word is compoſed of ὥρα, *hora*, *hour*, and the verb σκέπτομαι, *ſpecto*, *conſidero*, *I conſider*. The Latins call it *cardo orientalis*; ſometimes *aſcendens*. See ASCENDANT.

They were formerly ſo infatuated with horoſcopes, that Albertus Magnus, Cardan, and others, are ſaid to have had the temerity to draw that of Jeſus Chriſt.

Horoscope is alſo uſed for a ſcheme, or figure, of the twelve houſes; *i. e.* the twelve ſigns of the zodiac, wherein is marked the diſpoſition of the heavens for any given time.

Thus we ſay, to draw a horoſcope, conſtruct a horoſcope, &c. We call it, more peculiarly, *calculating* a nativity, when the life and fortune of a perſon are the ſubject of the prediction; for they draw horoſcopes of cities, great enterprizes, &c. See HOUSE.

Horoscope, *Lunar*, is the point which the moon iſſues out of, when the ſun is in the aſcending point of the eaſt. This is alſo called the *part of fortune*.

Horoscope is alſo a mathematical inſtrument, in manner of a planiſphere; but now diſuſed.

It was invented by J. Paduanus, who compoſed a ſpecial treatiſe thereon.

HORPS, Le, in *Geography*, a town of France, in the department of Mayenne, and chief place of a canton, in the diſtrict of Mayenne; eight miles N. W. of Vilaine. The place contains 1618, and the canton 8793 inhabitants, on a territory of 182½ kilometres, in 10 communes.

HORREA, in *Roman Antiquity*, were public magazines of corn and ſalt meat, out of which the ſoldiers were furniſhed on their march in the military roads of the empire.

Horrea was alſo the name which they gave to their *granaries*; which ſee.

HORREBOW, Peter, in *Biography*, a celebrated Daniſh aſtronomer, and profeſſor of that ſcience at Copenhagen, was born at Lægſted, in Jutland. He ſtudied at Aalburg under very unfavourable circumſtances, being obliged, at the ſame period, to ſubmit to various kinds of labour. In 1714, he was appointed profeſſor of mathematics at Copenhagen, and in 1725 he was elected a member of the Daniſh Academy of Sciences. He died in 1764, at the great age of 85. He was author of many works connected with his favourite purſuits, among which were "Copernicus Triumphans, ſive de Parallaxi Orbis Annui;" "The Elements of Aſtronomy;" "The Elements of Mathematics;" &c. &c.

HORROR, Horrour, ſtrictly ſignifies ſuch an exceſs of fear as makes a perſon tremble. It is a compound of admiration and fear, not without an occaſional mixture of pleaſure, from which, when predominant, it is denominated a pleaſing horror.

Horror, in *Medicine*, nearly ſynonimous with *rigor*, is uſed to denote that tranſient *ſhivering*, accompanied by a ſenſation of cold, which is among the firſt ſymptoms of febrile diſeaſes in general. Hippocrates conſiders it as expreſſive of a leſſer degree of ſhivering than the term *rigor*; but a few perſons, he ſays, employ the word to denote a greater degree of chillineſs than rigour. (See his Treatiſe de Flatibus.) Celſus conſiders the *horror* as a general ſhaking, ſuch as often occurs in the outſet of a paroxyſm of ague. "Frigus voco, ubi extremæ partes membrorum inalgeſcunt; *horrorem* ubi totum corpus intremit." (De Medicina, lib. iii. cap. 3.) Sennertus again tells us, that horror implies an agitation of ſkin only; while rigor ſignifies a ſhaking of the whole body; and this appears to be the ſenſe in which the two words are moſt commonly underſtood. Sennerti Opera, vol. i. p. 387.

Horror *of a Vacuum*, was an imaginary principle among the ancient philoſophers, to which they aſcribed the aſcent of water in pumps, and other ſimilar phenomena, which are now known to be occaſioned by the weight of the air. See AIR.

HORROX, Jeremiah, in *Biography*, was born at Toxteth, near Liverpool, about the year 1619. He received his academical education at Emanuel college, Cambridge, after which he began to apply himſelf very diligently to the ſtudy of aſtronomy, but as at this period his circumſtances were very moderate, and as he could have no acceſs neither to books nor inſtruments, he was unable to make any conſiderable progreſs in the purſuit. About the year 1636 he became acquainted with Mr. Crabtree, whoſe genius led him to the ſame kind of ſtudies, and with whom Mr. Horrox correſponded, and they both communicated their diſcoveries to Mr. Foſter, profeſſor of Greſham college. Mr. Horrox, by the countenance and aſſiſtance of his friend, purſued his ſtudies with renewed vigour, and having procured inſtruments and the neceſſary books for the purpoſe, applied with great diligence to the making of obſervations. Scarcely, however, had he entered the career of diſcoveries, before he was ſuddenly cut off by death in the year 1640-1, when he was only 22 years of age. Of the loſs which the world ſuſtained by this melancholy event, ſome notion may be formed from the writings which he left behind him. He had juſt completed his "Venus in Sole viſa," which was publiſhed at Dantzic in 1662, by Hevelius, together with his own "Mercurius in Sole viſus," and illuſtrated with that aſtronomer's notes. The remaining papers of our young aſtronomer were digeſted and publiſhed by Dr. Wallis in 1673, under the title of "Opera Poſthuma," &c. Two things are deſerving notice, and will perpetuate the memory of this very extraordinary young man. He was the firſt who ever predicted or even ſaw with a ſcientific eye the paſſage of Venus over the ſun's diſk, and though he was not aware of the great uſe that was to be made of it, in diſcovering the parallax and diſtance of the ſun and planets, yet he made from it many uſeful obſervations and improvements on the theory of Venus. The other circumſtance was his new theory of lunar motion, which Newton himſelf made the ground-work of his aſtronomy relating to the moon; ever ſpeaking of Mr. Horrox as a genius of the firſt rank.

HORS *de ſon fee*, q. d. *out of his fee*, in *Law*, is an exception to avoid an action brought for rent, or other ſervice, iſſuing out of certain lands, by him that pretends to be the lord. For if the defendant can prove the land to be without the compaſs of his fee, the action fails.

HORSE, in *Zoology*. See Equus.

The horſe makes the ſubject of a very extenſive art called horſemanſhip, conſiſting of divers ſubordinate arts or branches.

From the ſame beaſt alſo ariſe the profeſſions of chivalry, knighthood, &c.

Authors are divided as to the time when men firſt began to mount horſes. The ſcholiaſt of Euripides, and Euſtathius on the ſecond book of the Iliad, ſpeak as if the ancients had been unacquainted with the uſe of ſaddle horſes, and had only uſed them to draw chariots, &c. They add, that courſes on horſe-back were not introduced at the olympic games before the fifteenth Olympiad. But this can ſcarcely be; becauſe the centaurs, to whom the invention is attributed, lived long before that time. Beſides, Homer, though he mentions only chariots in his account of the ſiege of Troy, ſpeaks of riding ſo familiarly in ſome parts of his Iliad and Odyſſey, that it muſt have been practiſed among the Greeks, before he compoſed either of theſe poems. In the fifteenth book of the Iliad he repreſents the ſtrength and activity of Ajax, when he fought in defence of the Grecian ſhips that were attacked by the Trojans, and leaped from one ſhip to another, by the readineſs and addreſs with which a ſkilful horſeman would vault from the back of one horſe to that of another; and his ability to defend many ſhips at once by that of the accompliſhed rider, who is capable of managing and controuling ſeveral horſes at the ſame time. This compariſon proves, not only that riding was commonly known at the time when Homer wrote, but that it muſt have been ſtudied and cultivated with great care and attention. In the fifth book of the Odyſſey, the poet compares Ulyſſes, ſhipwrecked and ſitting aſtride a plank which was floating on the waves, to a man beſtriding a horſe, and keeping his ſeat in ſpite of the motions which the animal could make. Herodotus, in Thalia, ſpeaks of hunting on horſeback, as an exerciſe practiſed in the time of Darius; in Melpomene, likewiſe, he ſays, the Amazons hunted on horſe-back, with their huſbands, the Sarmatians. Xenophon ſays, that Cyrus hunted on horſe-back, when he had a mind to exerciſe himſelf and his horſes.

It appears, likewiſe, from Pauſanias, that there were horſe-courſes even in the time of Hercules, the inſtitutor of the Olympic games.

It alſo appears, from the moſt ancient hiſtory extant, *viz.* the hiſtory of the Bible, that the horſe was made ſubſervient to the will of man in the earlieſt times, and therefore the uſe of this animal is probably almoſt coeval with mankind. See Gen. ch. xlvii. 17. Job, xxxix. 18, 19. Gen. l. 9. Exodus, xiv. 9.

From the two laſt cited paſſages, in which chariots and horſemen are named together, it appears probable, that the uſe of chariots and the art of riding were introduced about the ſame time, the latter being a little prior to the former; and Egypt ſeems to have been the country to which mankind are indebted for the equeſtrian art, though the preciſe period of time in which it was firſt practiſed cannot ſo eaſily be aſcertained. It is certain, however, that when Jacob came into Egypt, he found the inhabitants perfectly acquainted with the horſe, and uſing it in its two-fold capacity of carrying and drawing. From hence it was conveyed to the Ethiopians, Arabs, Indians, Perſians, Parthians, Armenians, Scythians, &c.

The Ethiopians, as we learn from Herodotus, poſſeſſed a breed of horſes, and were acquainted with the art of riding; accordingly he deſcribes them as a nation of cavalry that attended Xerxes in his expedition againſt Greece. We have no information with reſpect to the equeſtrian hiſtory of the ancient Arabs; although in later times they have become ſo famous for riding, that they may be ſtiled a nation of horſemen. The inhabitants of India were accuſtomed to uſe horſes from the earlieſt times; and Herodotus aſſerts, that the troops of this country, which attended Xerxes in his famous march againſt Greece, fought on horſe-back, as well as employed chariots in war.

The Perſian horſes have been always famous for beauty, vigour, fire, and other eminent qualities, and ſo celebrated for ſpeed, that their very name in the language of the country ſignifies what may be rendered by the word "wind-foot," a term emphatically expreſſive of their ſwiftneſs. The ancient Perſians were ſo fond of them, and thought the act of managing them ſo becoming and neceſſary a duty, that they taught their children to ride at the age of five years, as Herodotus relates. Vegetius deſcribes the horſes of this country as moſt valuable for the ſaddle, being ſafe, gentle, and very agreeable to the rider, conſtituting a very conſiderable part of the revenue of their owners, and very profitable to thoſe who could ſupport a fine breed. Their paces were ſingularly graceful, as well as ſoft and eaſy, ſo as to relieve rather than fatigue the rider. They were quick and nimble, but ſubject to tire on a long march or journey; inclined to obſtinacy and rebellion, unleſs curbed and ſubdued by diſcipline and exerciſe; but notwithſtanding their heat and anger, not difficult to be pacified; always maintaining a graceful carriage, arching their neck, and bending it to ſuch a degree as almoſt to make their chins lean upon their breaſts; while their pace was ſomething between a gallop and amble, anſwering to what the French call "aubin," and we a "rack."

The Parthians were very eminent for the ſkill with which they managed their horſes, and their manner of fighting upon them; and they are deſcribed as having ſuch dexterity and ſuppleneſs of body, and ſuch a command over their horſes, that they could turn themſelves round upon their backs with ſo much eaſe and readineſs as to be able to draw their bows with the ſureſt aim, and wound their enemies even whilſt they were flying from them; this manner of fighting being peculiar to them. The name of "Parthus" is derived from a Chaldean word which ſignifies "horſeman." Their horſes are ſaid to have been very active and eaſy in their paces, which they formed by attention and practice. (See PACE.) The Parthian horſes were very hardy, and inured to incredible fatigue, as well as to travel a long time without food or water. Thus Propertius deſcribes them (lib. iv. eleg. 3.).

> "Quot ſine aquâ Parthus millia currat equus."
>
> "How many miles can run the Parthian horſe,
> Nor quench his thirſt in the fatiguing courſe?"

Armenia boaſted of its breed of horſes, hardly inferior to the Perſian race. Vegetius ſpoke of the inhabitants of this country as being very careful in trimming and adjuſting the manes of their horſes. (See MANE.) Niſæa, a diſtrict of Armenia, boaſted of its breed of very large and beautiful horſes. The chariot of Xerxes, in his famous expedition, was drawn by horſes of that country, which were choſen for the taſk, becauſe they were the nobleſt that could be procured. Media was alſo a region eminent for its horſes, and from its ſituation and properties, produced them of equal value with the neighbouring countries. The Scythians were proverbially famous, as in the terms "Scytha equum," for their attention to horſes. They preferred mares to horſes, conceiving them to be more capable of ſervice, and accordingly uſed them more than horſes in war. The Sarmatians, both Aſiatic and European, were diſtinguiſhed horſemen, and had large breeds of horſes. They uſed horſes not only for riding, but offered them in ſacrifice to their gods; they alſo eat their fleſh, and drank their blood. Lucan (l. iii.) and Virgil (Georg. iii.) record this cuſtom. The horſes of Cappadocia have been much celebrated both by hiſtorians and poets, both for their ſwiftneſs and the ſtatelineſs of their action. The inhabitants of Numidia, Mauritania, Naſamonia, Maſſilia, and other adjacent tracts of the ſame region, are highly commended for having had horſes of great ſwiftneſs and vigour; and more particularly for their peculiar manner of riding them, without a bridle or ſaddle, uſing a wand only, or ſwitch to guide and command them. This breed of horſes ſeems to have been the ſame with that of Lybia, or, as that tract is now called, Barbary, famous for its excellent horſes, which were extolled for their ſpeed, wind, and patience of fatigue. Xenophon, Oppian, and Ælian concur in commending them. The method above-mentioned, of guiding and governing horſes by a wand or ſwitch, is ſtill practiſed in Barbary by the lower ſort of people. The horſes of Libya are proverbially ſwift.

The colonies which came from Phœnicia and Egypt, in which equitation flouriſhed, brought this art with them, and eſtabliſhed it in Greece long before the ſiege of Troy, and with the art tranſplanted thither the horſe, which was not originally a native of Greece. The Theſſalian horſes were the moſt famous of ancient Greece, and valued and admired not only by the inhabitants of that country, but by the moſt judicious and experienced of other nations. Mycenæ, Epirus, Lacedæmon, Argolis, Arcadia, Magneſia, Dalmatia, Ionia, the iſland Scyros, the Attic territories, and Elis in particular, were all diſtinguiſhed by their breeds of horſes. From Greece the art of horſemanſhip was tranſmitted to the Romans, who cultivated it with ſuch diligence and zeal, that they were ſoon able to excel their maſters. The Etrurian or Tuſcan breed is praiſed by Oppian; and the Sardinian, Corſican, and Venetian horſes are much commended. Agragas in Sicily, and Calpe and Tarteſſus in Spain, are alſo celebrated for their horſes. Aſturia Gallicia, and Andaluſia, then called Bœtica, were known to produce the fineſt of their kind. The horſes of Gaul were alſo held in conſiderable eſteem by the Romans; and they were not unacquainted with thoſe of the Germans, which are mentioned by Cæſar and Tacitus, but by the latter not much to their credit. Like the Armenians, the Romans always turned the mane on the right ſide. Varro and Virgil direct it to be ſo placed.

It was the cuſtom, among the ancients, to impreſs ſome mark on their horſes: the moſt common were, Σ, *ſigma*, a Κ, *kappa*, and a bullock's head. Hence thoſe marked with Σ's were called Σαμφοραι; thoſe with a Κ, Καππατιαι; and thoſe with a bull's head, Βουκεφαλοι, *Bucephali*. It is, however, more probable that the famous horſe Bucephalus owes his appellation to the reſemblance which his head bore to that of a bull, and not to the impreſſion of one which was burnt into his fleſh, and was a mark in no wiſe peculiar to him, but common to all horſes, ſo that he could not have been particularly diſtinguiſhed by it. And Aulus Gellius, lib. v. cap. 2. expreſsly tells us that this was the fact; and that the head exactly reſembled, in ſhape and figure, the head of a bull. This mark was ſtamped on the horſe's buttocks and his harneſs, as appears from the ſcholiaſt in Ariſtophanes's Clouds, Heſychius, &c.

The Romans, as well as the Greeks, diſtinguiſhed their horſes by certain marks, which were burnt into the fleſh: theſe were the initial letters of the owners' names, figures of animals and other devices, by which the horſes were known and appropriated, frauds prevented, and the breeds and pedigrees, of which they were very careful, preſerved and diſtinguiſhed. It was alſo uſual for them to give names to their horſes, expreſſive of their country, qualities, or colour. The Sybarites, a voluptuous people of Calabria, are ſaid to have taught the horſes in their troops to move or dance in exact time to the ſounds of muſical inſtruments.

In modern times, Arabia is moſt diſtinguiſhed for the excellence of its horſes, and the addreſs of its inhabitants in riding them.

The Arabians breed their horſes for ſale, and there is a conſiderable revenue ariſing from thoſe that are ſent out of the country, the tax being about ten pounds ſterling for each horſe. Theſe people are ſcrupulouſly exact in preſerving the pedigree of their horſes for ſeveral ages; ſo that they know their parentage, alliances, and genealogy, diſtinguiſhing each breed by different appellations, and dividing the whole kind into three claſſes. The firſt claſs is called *noble*, being the moſt pure and ancient, without any mixture, on the ſide of the ſires or dams. The ſecond claſs is compoſed of horſes, whoſe race, though ancient, has been mixed with *plebeian* blood, either on the male or female ſide, which nevertheleſs is deemed noble, but miſallied. The laſt claſs comprehends the common horſes, which are ſold at a low price; but the two former ſorts are extremely dear, the loweſt-priced mares of the firſt claſs being worth five hundred French crowns, and ſome fetching even four, five, or ſix thouſand livres.

When a ſtallion covers a mare among the Arabs, both being of equal quality, witneſſes are called to be preſent on the occaſion, who ſign a certificate in the preſence of a magiſtrate, in which the names of the horſe and mare are mentioned, with their pedigrees. When the mare drops her foal, witneſſes are called again, and another certificate is drawn up and ſigned; and theſe vouchers are given with the animal, like the deeds of an eſtate, when it is ſold.

The Arabian horſes are generally of a middling ſize, neat and clean in their ſhape and limbs, and of a thin and ſlender figure. Their keepers curry and feed them morning and evening, and only let them drink two or three times in the day. About March, when the graſs is ſtrong and plentiful, they ſoil them, and devote this ſeaſon likewiſe to procreation; obſerving the cuſtom, which we have probably derived from them, of throwing cold water upon the mare as ſoon as the ſtallion deſcends from her back. When the ſpring is paſt, the horſes are taken from the paſtures, and kept for the reſt of the year without graſs or hay, ſolely upon barley, with a certain portion of ſtraw. When the colts are about eighteen months old, they ſheer the hair of their tails, in order to make it grow thicker and ſtronger. They begin to ride their colts at the age of two years, or two and a half at moſt.

The beſt breeds of this country are ſaid to be ſprung from the wild horſes of the Deſert, of which, many ages ago, a ſtud was compoſed, which increaſed the breed, and furniſhed Europe, Aſia, and Africa with theſe noble animals. The beſt horſes are, therefore, immediately or remotely deſcended from Barbs, deſcended from Arabians, whoſe climate is peculiarly favourable to the breed of horſes.

The Arabian breed is propagated in Barbary, among the Moors, and even among the negroes on the banks of Gambia and Senegal, where they are fed with Indian corn, bruiſed and mixed with milk. Egypt, Turkey, and Perſia are ſupplied with horſes from Arabia. The Barbary horſes are to be found in moſt countries of Europe.

The foreheads of theſe horſes are generally long, ſlender, and ill furniſhed with mane, but riſing diſtinctly and boldly out of their withers; their heads lean and ſmall, and reſembling that of a ſheep; the ears handſome and well placed; the ſhoulders light, ſloping backwards, and flat; their withers fine, and ſtanding high; loins ſhort and ſtraight; flanks and ribs round and full, without having too large a barrel; their haunches ſtrong and elaſtic; the croup often ſomewhat too long; the tail placed high; thighs well turned and rounded; legs clean, well made, and thin of hair; the ſinews detached from the bone, but the paſtern generally too long and bending; the foot good and ſound. Theſe horſes are of all colours; but the moſt common ſort is grey; they are generally cold and ſlow in their paces, and require to be rouzed and animated by the rider, when they will diſcover a great fund of vigour, wind, and ſpeed. They are very light and nimble, formed for running, and are more valued in their offspring than for their own merit, being thought, when tranſported into foreign countries, to get colts which excel their ſires in goodneſs; on which account they are valuable in ſtuds.

The Algerines are ſaid not to like to caſtrate their horſes, but only ſqueeze their teſticles when they are about three months old, and thus render them incapable of propagation.

It is thought that the horſes of the kingdom of Morocco are the beſt, and next to them a breed called the mountain barbs, which are ſure-footed, of a gentle diſpoſition, and very attentive and docile. Their walk is free and bold, and their gallop very rapid.

In Turkey, Arabia, and Perſia, they expoſe the dung of their horſes in the ſun, and when it is capable of being finely powdered, they ſpread it under them inſtead of litter, which gives their coat a beautiful gloſs and luſtre. The Perſian horſes are reckoned next in value to thoſe of the Arabians.

The climate of India is unfriendly to horſes, which are generally very ſmall, and fed in the day-time with a little hay, and at night with peas boiled with ſugar and butter. They ſometimes feed them in the rice-fields, and when fleſh is plentiful, boil the offal to rags, and, mixing it with butter and ſome ſorts of grain, form balls, which they thruſt down the throats of horſes. In a ſcarcity of proviſion, they give them opium. The horſes of the country are naturally very vicious; and the Perſian horſes, being more gentle and tractable, are often valued at a thouſand guineas each, while thoſe of India ſell for fifty or one hundred.

The Tartar horſes are of a moderate ſize; but they are ſtrong, nervous, proud, full of ſpirit, bold, and active. They are of a good ſize for the ſaddle, and are pacers by nature. Their owners, like the ancient Geloni and Sarmatians, make the animals ſupply them with food; for they eat their fleſh at this day, as well as the curds, or "lac concretum" of the mare's milk, mentioned by many ancient writers. The Tartars have been famous in all ages, under different names, for their love of horſes and ſkill in riding. The diſtrict, called Little Tartary, has a breed of ſmall horſes, which the inhabitants value ſo much, as never to permit them to paſs into the hands of ſtrangers.

Circaſſia, Mingrelia, and the adjacent parts, abound with horſes of a better mould, and juſter proportions than thoſe of Tartary, and they are conſequently admired and valued, more eſpecially as they are equal to the greateſt fatigue. Some of the iſlands in the Archipelago are furniſhed with good and valuable horſes, eſpecially Crete; but they are not entitled to any farther notice. The horſes of Ruſſia are not much regarded by other nations. They are ſmall but hardy, and capable of enduring great fatigue. Thoſe of the Turkiſh breed are handſome, and finely ſhaped, but too ſlight and weak for heavy cavalry. The Kalmuck horſes are ſomewhat higher than the Ruſſian common horſes, and ſo tough and ſtrong in their conſtitution, as to be able to run three or four hundred Engliſh miles in three days. They ſubſiſt, ſummer and winter, ſolely upon graſs in the great deſerts, which are between the rivers Don, Volga, and Yaik. They are collected in great herds of four hundred, five hundred, or even a thouſand. They are excellent ſwimmers, and paſs the river Volga, where it is from one to two miles broad, with great eaſe. The Nogay horſes are a hardy breed belonging to the Tartars of that tribe, ſubject to the Kalmuck khan. The Turcomans, a free nation, living between the Caſpian ſea and the lake Aral, have horſes of the ſame nature with thoſe of the Nogay Tartars; and the horſes of the Baſhkirs are ſtouter and better than thoſe of the Nogay tribe. The "ſtep," or wild horſe, is an horſe of the Deſert, of which there are three different kinds, which feed reſpectively together, in herds, or taboons, of thouſands. All kinds of horſes are eaten by the Tartars and Kalmucks; and a foal is reputed a great dainty. Mare's milk is a frequent drink, which, when kept and fermented, becomes inebriating. The Tartars of the Crim never undertake an excurſion without allowing three horſes to one rider. The Poliſh horſes are very hardy, ſtrong, and uſeful, but they are generally of a middling ſize. In the marſhy parts of Pruſſia, and towards the mouth of the Viſtula, there is a breed of good, tall, ſtrong, horſes, reſembling thoſe of Frieſland, but of inferior value.

The horſes of Sweden are low and ſmall, and the Norway breed may be comprehended under the ſame deſcription, but they are nervous, hardy, and active. Denmark, and alſo Holſtein and Oldenburg, boaſt a large variety of horſes, which have ſo much vigour, pride, courage, and grace, that for the coach, the ſervices of war, and the manege, they can be ſurpaſſed by few, though they often fail with reſpect to elegance of limb and ſymmetry of parts; having thick foreheads,

heads, ſhoulders ſomewhat heavy, backs rather long, and croups too narrow to correſpond with the foreparts. In the iſlands of Ferroe there is a race of horſes of ſmall growth, but ſtrong, ſwift, and ſure of foot, paſſing with eaſe and ſafety over high hills. They are never ſhod, and feed abroad without ſhelter both ſummer and winter. In Suderoê, one of theſe iſlands, they have a lighter and ſwifter breed than in any of the reſt ; the inhabitants catch their ſheep, which are wild, by hunting them with a dog, and purſue them with their horſes. The horſes of Lapland are ſmall of ſtature, but active and willing ; they are uſed only in the winter ſeaſon, in drawing ſledges over the ſnow, and tranſporting wood, forage, and other neceſſaries ; but in ſummer they are turned into the foreſts, where they form ſeparate troops, ſtrictly confined to their own quarters.

The Spaniſh horſes are much commended : ſome make them ſecond to the Arabians, and place them before the Barb. Thoſe of the fineſt breeds are generally well truſſed, and well knit horſes, active and ready in their paces, of a quick apprehenſion and retentive memory, wonderfully docile and affectionate to man ; full of ſpirit and courage, tempered with mildneſs and good nature, and generally very eaſy in all their paces ; for the moſt part of a moderate ſize. Thoſe which are bred in Upper Andaluſia are deemed the moſt valuable. The Portugal horſes, or rather mares, were famous of old for being very fleet and long-winded ; but of late it is ſaid they are much degenerated. The Italian horſes were formerly more beautiful, and of greater fame, than the preſent race. Although this country is not now deſtitute of many generous and beautiful breeds, diſperſed in ſtuds, which are formed in different ſtates or diſtricts, the Neapolitan horſes have always been renowned, and ſhine both under the ſaddle and in the traces. Great numbers are bred in Sicily, which has always been extolled for the ſuperior excellence of its horſes. Thoſe of Sardinia and Corſica are ſmall, but nimble, bold, and full of ſpirit. The Swiſs horſes partake of theſe qualities, and were formerly accounted ſerviceable in war. Germany is not deſtitute of generous and noble horſes, uſeful for many purpoſes : but they are reckoned to be heavy and not good-winded. They have, however, finer breeds obtained from Turks and Barbs, which are kept as ſtallions, and alſo from Italians and Spaniards. In the chace and running they are inferior to the Hungarian and Tranſylvanian horſes. The horſes of Bohemia are not diſtinguiſhed by any eminent qualities. The Huſſars and Tranſylvanians are accuſtomed to ſlit the noſtrils of their horſes, under a notion of giving their breath a free paſſage, and improving their wind, as well as to render them incapable of neighing, which in war would be often inconvenient. The Croatian horſes are nearly allied in qualities and character to the Hungarian and Bohemian : theſe, as well as the Poles, are remarkable for being, as the French term it, "Begut," or keeping the mark in their teeth as long as they live.

Holland furniſhes a race of horſes, which are principally ſerviceable in the coach : the beſt come from Frieſland. The Flemiſh horſes are inferior in value to the Dutch, having big heads with a channel towards the noſtrils ; their feet are immoderately large and flat, and their legs ſubject to watery humours and ſwellings in the heels. France abounds in horſes of all kinds, but by no means excels. The beſt of thoſe fit for the ſaddle come from Limouſin : they reſemble the Barbs in many particulars, and like them are fitteſt for hunting, but they are not ripe for work till they are eight years old. There are alſo very good "Bidets" or ponies in Auvergne, Poitou, and Burgundy. Next to thoſe of Limouſin, Normandy claims precedence, for its handſome, generous, and uſeful breed. Lower Normandy, and the diſtrict of Cotentin, furniſh a very good ſort for the coach, which are nimbler, and have more elaſticity in their motions than the Dutch horſes. The French horſes are apt to have their ſhoulders too looſe and open, as thoſe of the Barbs are too confined and narrow.

The finer and better ſort of the more modern Engliſh horſes are deſcended from Arabians and Barbs, and frequently reſemble their ſires in looks and appearance, but differ from them conſiderably in ſize and mould, being more furniſhed, ſtout, and luſty. In general they are ſtrong, nimble, of good courage, capable of enduring much fatigue, and both in perſeverance and ſpeed ſurpaſs all horſes in the world. However, it is objected to Engliſh horſes, that they want grace or expreſſion in their figure and carriage ; that they are obſtinate and ſullen ; that they have ſtiff ſhoulders, and want ſuppleneſs in their limbs, which render them unfit for the manege. England has at all times, even in its rudeſt ſtate, been poſſeſſed of a breed of horſes ſufficient to anſwer every neceſſary purpoſe. But it is probable, that thoſe now uſed in the ſervice of war, as well as for draught, are an offspring of the German or Flemiſh breed, meliorated by our ſoil, and a judicious culture ; as our race horſes derive their origin from Arabia. The venerable Bede ſays, that the Engliſh began to uſe ſaddle horſes about the year 631, when prelates and others rode on horſe-back, who till that time were accuſtomed to walk. In the reign of Athelſtan the Engliſh became ſo jealous of their horſes, which were alſo held in high eſteem by foreigners, that a law was made by that monarch to prohibit the exportation of them, unleſs they were deſigned for preſents ; and in the reign of this prince many foreign horſes were introduced into this kingdom. The variety of breeds in this iſland was farther augmented by William the Conqueror, and particularly by Roger de Beleſme, earl of Shrewſbury, in his time, who introduced the Spaniſh ſtallions into his eſtate in Powis Land, from which that part of Wales was for many years celebrated for a ſwift and generous race of horſes. (See on this ſubject Berenger's Hiſtory and Art of Horſemanſhip, vol. i. paſſim ; Buffon's Nat. Hiſt. by Smellie, vol. iii. p. 306, &c. Pennant's Britiſh Zoology, vol. i. p. 1, &c.) The importation and breed of horſes were much promoted by Edward II. and Edward III. Polydore Virgil informs us, that in the reign of Henry VII. the Engliſh were wont to keep large herds of horſes in their paſtures and common fields ; and by 11 Hen. VII. cap. 13. it was prohibited to convey horſes out of the realm without the king's licence, on pain of forfeiture. In the reign of the ſucceeding prince, a particular regard was paid to the raiſing of a breed of good and ſtrong horſes ; and accordingly ſeveral laws were made, enjoining thoſe who had parks, incloſures, &c. to keep at leaſt two brood mares, of a certain ſize, &c. and prohibiting ſtoned horſes from being put into foreſts or commons where mares were kept within certain counties, which were above the age of two years, but not fifteen hands high, on pain of forfeiture ; and ſcabbed horſes from being kept in ſuch places, on pain of 10*s.* 27 Hen. VIII. cap. 6. 32 Hen. VIII. cap. 13.

By 1 Ed. VI. cap. 12., and 2 & 3 Ed. VI. cap. 33. horſe-ſtealers are excluded from the benefit of clergy. By theſe prudent and judicious meaſures, the Engliſh breed of horſes was not only improved in ſtrength and ſize, but alſo greatly increaſed in number. Till the uſe of coaches (ſee COACH) was introduced in the reign of queen Elizabeth, ſaddle horſes and carts were the only methods of conveyance for all ſorts of people ; and the queen rode behind her maſter of the horſe, when ſhe went in ſtate to St. Paul's. By the 2 & 3 Ph. and M. cap. 7. and 31 Eliz. cap. 12. it is enacted, in order to prevent horſes from being ſtolen or ſold in private places, that owners of fairs and markets ſhall appoint toll-takers or book-keepers, who are to enter the names of buyers and ſellers of horſes, &c. And to alter the property, the horſes muſt be rid or ſtand in the open fair one hour; and all the parties to the contract muſt be preſent with the horſe. Sellers of horſes are to procure vouchers of the ſale; and the names of the buyer, ſeller, and voucher, price of the horſe, the colour, and one ſpecial mark at leaſt, are to be entered in the toll-taker's books, and a note of the ſame delivered to the buyer; and if any perſon ſhall ſell a horſe without being known to the book-keeper, or bring in a voucher; or if any one ſhall vouch, without knowing the ſeller, or the book-keeper ſhall make an entry, without knowing either; in each of theſe caſes the ſale is void, and a forfeiture is incurred of 5*l.* The owner may ſeize and take his horſe again, or have an action of detinue, &c. A ſtolen horſe, though ſold according to the direction of the act, may be redeemed and taken by the owner within ſix months, repaying the buyer what he ſhall ſwear he gave for the ſame. Any perſon killing a horſe in the night-time is guilty of felony, and liable to tranſportation for ſeven years; and maiming a horſe incurs the penalty of treble damages. 22 & 23 Car. II. cap. 7.

Horſes in hackney-coaches are to be 14 hands high. (9 Anne, cap. 23.) If hired horſes are abuſed by immoderate riding, &c. there lies an action of treſpaſs on the caſe. The act 26 Geo. III. c. 71. requires every perſon who keeps or uſes any horſe, or place for the purpoſe of ſlaughtering any horſe, &c. or cattle which ſhall not be killed for butcher's meat, to take out a licence at the quarter ſeſſions, and to cauſe his name and the words "Licenſed for ſlaughtering horſes purſuant to an act paſſed in the 26th year of his majeſty king George III." to be painted or fixed over the door of ſuch houſe or place; and an inſpector ſhall be appointed by pariſh officers, whoſe duty is ſpecified by the ſaid act. Slaughtering horſes, &c. without a licence and conformity to the requiſitions of the ſaid act, incurs the guilt and puniſhment of felony.

The duties impoſed by 43 Geo. III. c. 161. and 45 Geo. III. c. 13. on all horſes, mares, and geldings, kept by any perſon for riding, or drawing any carriage, chargeable with the duty on carriages, appear in the following ſchedule.

Number thereof.	Amount of Duty for each Horſe, Mare, or Gelding. £.	s.	d.
For 1 ſuch horſe, mare, or gelding	2	8	0
2	4	0	0
3	4	8	0
4	4	11	0
5	4	12	0
6	4	16	0
7	4	18	0
8	4	18	0
9	5	0	0
10	5	5	0
11	5	5	0
12	5	5	0
13	5	5	6
14	5	5	6
15	5	5	6
16	5	5	6
17	5	6	0
18	5	6	6
19	5	7	0
20 and upwards	5	8	0

The ſaid duties are payable annually, ſubject to the following exemptions:

1. Any perſon who ſhall keep any horſe, mare, or gelding, which ſhall be uſed without fraud for the purpoſe of huſbandry, or of drawing any carriages (except ſuch as are liable to any duty by this act), or carrying burdens in the courſe of the trade or occupation of the perſon or perſons to whom ſuch horſe, mare, or gelding ſhall belong, although ſuch horſe, mare, or gelding ſhall be uſed for riding on the occaſions and in manner hereinafter-mentioned; that is to ſay, when returning from any place to which any load or burden ſhall have by ſuch horſe, mare, or gelding, been drawn or carried, or in going to any place from whence any load or burden ſhall be to be brought back by any ſuch horſe, mare, or gelding, or on account of ſuch horſe, mare, or gelding having been uſed for the purpoſe of riding to procure medical aſſiſtance, or for the purpoſe of riding to or from market, or to or from any place of public worſhip, or to or from any election of members to ſerve in parliament, or to or from any courts of juſtice, or to or from any meeting of the commiſſioners of taxes.

2. Any perſon occupying a farm as tenant at rack-rent, the rent of which ſhall be leſs than 70*l.* a year, and making a livelihood ſolely thereby; or any perſon occupying any eſtate on any other tenure than as tenant at rack-rent ſolely, or ſuch eſtate, together with a farm at rack-rent, the whole value of which ſhall be leſs than equivalent to a farm at the rack-rent of 70*l.* a year (reckoning the value of every eſtate occupied by the owner thereof, or on any tenure other than rack-rent, as equivalent to double the amount of the like farm at rack-rent), and making a livelihood ſolely by ſuch his own eſtate, or by ſuch eſtate and farm jointly, and uſing occaſionally for the purpoſe of riding, any horſe, mare, or gelding, which ſhall be *bonâ fide* kept and uſually employed for the purpoſes of huſbandry.

3. Any perſon occupying a farm, and making a livelihood ſolely thereby, or any perſon carrying on a trade, and making a livelihood ſolely thereby; or making a livelihood by ſuch occupation and trade jointly: or any eccleſiaſtical perſon, not poſſeſſed of an annual income of 100*l.* or upwards, whether ariſing from any eccleſiaſtical preferment or otherwiſe, for one horſe, mare, or gelding, uſed only for the purpoſe of drawing any carriage with leſs than four wheels, liable to the duty hereby made payable on taxed carts.

The duties on horſes let to hire are as follow: For every horſe, mare, or gelding, let to hire for the purpoſe of riding, or of drawing any ſuch carriage as aforeſaid, for any period of time leſs than one year, in any manner ſo that the ſtamp-office duty, payable by law on horſes let to hire, ſhall not be payable, the ſum of 2*l.* 8*s.*

To be charged annually on the perſon or perſons letting the ſame; provided, if a due return thereof ſhall not be made by the hirer or hirers, according to this act, the progreſſive duty, as ſet forth in the former ſchedule, ſhall be chargeable in reſpect of every ſuch horſe, mare, or gelding, on the perſon or perſons hiring the ſame, and making ſuch default as aforeſaid.

The duties payable on race-horſes are as follow: For every horſe, mare, or gelding, *bonâ fide* kept for the purpoſe of racing or running for any plate, prize, or ſum of money, or other thing, or kept in training for any of the ſaid purpoſes, whether in the ſtables of the proprietor or proprietors, or of any other perſon or perſons, the ſum of 2*l.* 8*s.*

The ſaid duty to be charged annually on the perſon or perſons having the cuſtody, charge, or management of ſuch horſes, mares, or geldings.

The duties charged on horſes not otherwiſe charged, and on mules, are as follow: For every horſe, mare, or gelding, not chargeable with any duty according to the preceding ſchedule, and for every mule, except in the caſes hereinafter mentioned wherein other duties are made payable, the ſum of *12s. 6d.*

The duties on huſbandry horſes are as here ſtated: Any perſon occupying a farm at rack-rent, the rent of which ſhall be leſs than *20l.* (in Wales *10l.* ſterling) a year, and making a livelihood (or in Wales principally) ſolely thereby, or occupying any eſtate on any other tenure at rack-rent ſolely, or ſuch other eſtate, together with a farm at rack-rent, the value of which in the whole ſhall be leſs than equivalent to a farm at the rack-rent of *20l.* (in Wales *10l.* ſterling) a year, (reckoning the value of every eſtate occupied by the owner thereof, or on any tenure other than at rack-rent, as equivalent to double the amount of the like farm at rack-rent) and making a livelihood ſolely by ſuch his own eſtate, or by ſuch eſtate and farm jointly or principally thereby, and likewiſe a profit by any trade or employment, and keeping not more than two horſes, mares, geldings, or mules, *bonâ fide* for the purpoſe of ſuch occupation, ſhall be charged for each of ſuch two horſes, mares, geldings, or mules, the ſum of *2s. 6d.*

The exemptions to the ſeveral duties above ſpecified are,

1. Any horſe, mare, or gelding, belonging to his majeſty, or any of the royal family.

2. Any poſt-maſter, inn-keeper, or other perſon duly licenſed by the commiſſioners of ſtamps, in reſpect of any horſe, mare, or gelding, let to hire by him, in any manner where the ſtamp-office duty payable on horſes let to hire ſhall be duly ſatisfied and paid on each letting, and which ſhall not, on any occaſion, be uſed for any other purpoſe.

3. Any perſon duly licenſed to keep any public ſtage coach or carriage for conveying paſſengers for hire from different places in Great Britain, in any reſpect of any horſe, mare, or gelding, which ſhall be actually and ſolely employed for that purpoſe.

4. Any perſon licenſed by the commiſſioners for hackney coaches within London and Weſtminſter, and the ſuburbs thereof, to keep any hackney coaches, for any horſes, mares, or geldings, kept for the purpoſe of drawing ſuch coach, in reſpect of the duties before mentioned, and for two horſes, mares, or geldings, and no more, kept for the purpoſe of drawing each coach ſo licenſed in reſpect to the duties in the former ſchedule.

5. Any dealer in horſes, aſſeſſed to the duties hereby made payable on ſuch dealers, for any horſe, mare, or gelding belonging to ſuch dealer, and kept *bonâ fide* for ſale, and not kept or uſed for any other purpoſe, or in any other manner.

6. Any perſon who, on account of poverty, ſhall be diſcharged from the aſſeſſment made in reſpect of his dwelling houſe, in purſuance of the regulations of this act, for any horſe, mare, or gelding, provided ſuch perſon ſhall not keep more than one ſuch horſe, mare, or gelding, and the ſame ſhall not be let to hire.

7. Any rector, vicar, or curate, actually doing duty in the church or chapel of which he is incumbent, who ſhall not be poſſeſſed of an income of *60l.* per annum or upwards, whether ariſing from eccleſiaſtical preferment or otherwiſe; and who ſhall not keep more than one horſe, mare, or gelding, for the purpoſe of riding, which otherwiſe would be chargeable with duty according to this act, except ſuch perſon who ſhall occaſionally perform the duty appertaining to any rector, vicar, or curate, without being the regular officiating miniſter of the pariſh or place in which ſuch duty ſhall be performed.

8. Every perſon inrolled, or to be inrolled, and ſerving in any corps of yeomanry or volunteers, which ſhall hereafter be continued or formed, with the approbation of his majeſty, under officers commiſſioned by his majeſty or lieutenants of counties, or others who may be ſpecially authorized by his majeſty for that purpoſe, who ſhall have attended the exerciſe of ſuch corps, five days of muſter and exerciſe at the leaſt in the courſe of the preceding year, and who ſhall be returned in the muſter rolls of the ſaid corps, as required by law, and certified to have ſo attended, unleſs prevented by actual ſickneſs (ſuch ſickneſs to be certified by ſome medical practitioner to the commanding officer of ſuch corps), and who ſhall be returned in the ſaid muſter-roll of ſuch corps, as having uſed any horſe, mare, or gelding, for ſervice during ſuch days of muſter and exerciſe, ſhall be exempted from the payment of the duties ſet forth in the preceding ſchedules in reſpect of ſuch one horſe, mare, or gelding; ſuch exemption to be returned and claimed in the manner in which exemptions are directed to be returned and claimed by this act: but every claim of ſuch laſt mentioned exemption ſhall be proved by the certificate under the hand of the officer commanding the corps in which ſuch perſon ſhall be inrolled, which certificate ſhall, between the 5th April and the 5th May in every year, be delivered to the aſſeſſors of the pariſh where he ſhall reſide; and every perſon claiming to be ſo exempted, ſhall be chargeable thereto, unleſs ſuch certificate ſhall have been delivered purſuant to this act; which certificates made up, returned, and certified, ſhall be deemed ſufficient and valid for the purpoſes aforeſaid; but if from any variation of circumſtances, or other reaſon, the ſaid form cannot be ſtrictly adhered to, inſtruments of a ſimilar import may nevertheleſs be received in proof, at the diſcretion of the commiſſioners executing this act for the diſtrict.

9. Any non-commiſſioned officer or private of any of the regiments of cavalry, or in the artillery, for any horſe uſed in his majeſty's ſervice.

Horſe-dealers are chargeable as below ſtated:

Every perſon who ſhall uſe or exerciſe the trade and buſineſs of a horſe-dealer within the cities of London and Weſtminſter, and the liberties of the ſame reſpectively, the pariſhes of St. Mary-le-bone and St. Pancras, in the county of Middleſex, the weekly bills of mortality, or the borough of Southwark, in the county of Surry, the annual duty of *20l.*

Every perſon who ſhall uſe or exerciſe the trade and buſineſs of a horſe-dealer in any other part of England, or in Wales, or the town of Berwick-upon-Tweed, the annual duty of *10l.*

For the duties of poſt-horſes, ſee the article POST.

A horſe is uſually divided into three principal parts, *viz.* the *fore-hand*, the *body* or *carcaſe*, and the *hind-hand*. The *fore-hand* includes the head, neck, withers, breaſt, and fore-legs. The *body* is compoſed of the back, kidnies, ribs, belly and flanks. The *hind-hand* comprehends the rump, haunches, tail, buttocks, ſtiffle, thighs, hocks, and the other parts of the hind legs. By another mode of diviſion, the horſe is diſtinguiſhed into four parts, *viz.* the head, the body, and the fore and hind trains. The *body* is compoſed of the back, the kidnies, the belly, the ribs, and the flanks. The *fore-train* conſiſts of the neck, the ſhoulders, the breaſt, and the fore-legs; and the *hind-train* of the rump, the tail, the haunches, and the hind legs. Theſe ſeveral parts may be more diſtinctly underſtood by means of the ſubjoined detail, and a reference to the *Plate of Horſe*. A, the two bones correſponding to the *temples* of a man, and called by the ſame name: B, the *eye-pits*, or two cavities between the eye and ear, above the eye brows: C, the *vives*; the parotid glands, ſituated between the ear, and the locking of the under jaw: D, the *face* or *chanfrin*; the fore part of the head from the eyes to the noſtrils: E, the *rim of the noſtrils*; the cartilage which forms the circular aperture of the noſtrils, and terminates them above and below: F, *tip of the noſe*; the partition which divides the noſtrils, terminating at the upper lip: G to H, the bones of the lower jaw: H, the *chin*: I, the beard.

Gatherers. The two fore teeth.

Middle teeth. Thoſe adjoining to the gatherers.

Corner teeth. The laſt on each ſide.

Tuſhes. The two canine teeth on each ſide, and in each jaw.

Bars. The ſpaces between the cutting teeth and grinders, filled with ridges, which run acroſs the palate.

K, the *neck*, which is bounded above by the mane, and below by the throat, extending from the ſhoulders to the head: L, the *tuft* or *toupet*; that part of the mane which lies between the two ears, and hangs down on the front: M, the *withers*; the place where the two ſhoulders approach each other between the neck and back: N, the *ſhoulders*, extending from the withers M, to the top of the *fore hand*, or fore-leg O: P, the *cheſt* or breaſt: Q, the *back*, reaching from the withers M, to the reins S: R, the *navel*; the part between the back and reins; a very abſurd term, as the *navel* is in the lower part of the belly: S, the *reins*; this term is often uſed, though improperly, to expreſs the whole ſpine of the horſe: T, the *ſides*, which are formed and limited by the ribs: V, the *coffer*; the hollow formed by the contour of the ribs. The name *belly* is given to the part extending from V to the flank: X, the *flanks*; the extremity of the belly, at the termination of the ribs, below the kidnies, and reaching to the haunch-bones: Y, the *haunch*, formed, as in man, by the haunch-bone: Z, the *crupper*, which is round, and reaches from the kidnies to the tail. The *tail* is diſtinguiſhed by two parts, the *hair* and the *rump*: *a*, the *buttocks*, are ſituated below the crupper and the origin of the tail, and extend to the place where the hind-leg joins the body: *b*, the *ſhoulder-blade*: *c*, the humerus; both of theſe are included by horſemen under the name of *ſhoulder*: *d*, the *elbow*: *e*, the *arm*: *f*, the *knee*, or joint ſituated below the arm, a term improperly applied to a horſe, as it correſponds to the wriſt in man: *g*, the *ſhank* or *canon*; the ſecond part of the fore-leg It begins at the articulation of the knee, terminates at the fetlock joint *i*, and anſwers to the metacarpus in man: *h*, the *tendon*, commonly called the backſinew: *i*, the *fetlock* joint: *k*, the *tuft* of hair which ſurrounds a kind of ſoft horn ſituated behind the ſhank: *l*, the *paſterns*; the part of the leg which extends from the fetlock-joint to the hoof: *m*, the *coronet*; the place where the hoof joins the leg, and is decorated with long hair falling down all around the hoof: *n*, the *hoof* repreſents the nail in man; the fore-part of it, *n*, is called the *toe*, and the ſides, *o*, the *quarters*. The hind-part of the hoof is a little raiſed, and divided into two parts, both included under the name *heel*; they extend to the middle of the under part of the foot, and uniting again under the ſole, or bottom of the foot, form the *frog*: *p*, the *ſtifle*, is properly the articulation of the knee, and contains the knee-pan: *q*, the *thigh*; it extends from the ſtifle and extremity of the buttocks to the ham *r*, and anſwers to the leg in man. Accordingly, the horſe's thigh has a fleſhy part *s*, reſembling the calf of a human leg: *t*, the *hock* or *ham*, is the joint at the extremity of the thigh, and bends forwards. This articulation correſponds with the *tarſus* in man. The hinder-part of the joint, called the hock, is properly the *heel*. What is commonly called the *great ſinew*, which ariſes from the point of the hock, and terminates in the foot, is a tendon, anſwering to the *tendo Achillis* inſerted into the human heel: *u*, the *ſhank*: *x*, the *paſtern joint*: *y*, the *paſterns*: *z*, the *foot*, as in the fore-leg. (Buffon's Nat. Hiſt. by Smellie, vol. iii.) Of moſt of theſe parts a further account will be found under the reſpective articles.

The maſters of this art lay it down, that a horſe, to be good and well-made, muſt have three parts like thoſe of a woman; *viz.* the breaſt, which is to be broad, the hips round, and the mane long; three of a lion, *viz.* countenance, intrepidity, and fire; three of a bullock, *viz.* the eye, noſtril, and joint; three of a ſheep, *viz.* the noſe, gentleneſs, and patience; three of a mule, ſtrength, conſtancy, and foot; three of a deer, head, leg, and hair ſhort; three of a wolf, throat, neck, and hearing; three of a fox, ear, tail, and trot; three of a ſerpent, memory, ſight, and turning; three of a hare or cat, running, walking, and ſuppleneſs.

Of all quadrupeds, ſays M. Buffon, the horſe poſſeſſes, along with grandeur of ſtature, the greateſt elegance and proportion of parts. By comparing him with the animals immediately above or below him, we find that the aſs is ill made; that the head of the lion is too large; that the limbs of the ox are too ſlender and too ſhort, in proportion to the ſize of his body; that the camel is deformed; and that the groſſer animals, as the rhinoceros and elephant, may be conſidered as rude and ſhapeleſs maſſes. The great difference between the head of man and that of the quadrupeds, conſiſts in the length of their jaws, which is the moſt ignoble of all characters. But, though the jaws of the horſe be very long, he has not, like the aſs, an air of imbecility, nor, like the ox, of ſtupidity. The regularity and proportion of the parts of his head give him a light and ſprightly aſpect, which is well ſupported by the beauty of his cheſt. He elevates his head, as if anxious to exalt himſelf above the condition of quadrupeds. In this noble attitude, he regards man face to face. His eyes are open and lively, his ears handſome and of a proper height, being neither too long, like thoſe of the aſs, nor too ſhort, like thoſe of the bull. His mane adorns his neck, and gives him the appearance of ſtrength and of courage. His long buſhy tail covers and terminates with advantage the extremity of his body. His tail, very different from the ſhort tails of the deer, elephant, &c. and from the naked tails of the aſs, camel, rhinoceros, &c. is formed of long thick hairs which ſeem to ariſe from his crupper, becauſe the trunk from which they proceed is very ſhort. He cannot, like the lion, elevate his tail, but, though pendulous, it becomes him better: and, as he can move it from ſide to ſide, it ſerves him to drive off the flies which incommode him; for, though his ſkin be very firm, and well garniſhed with cloſe hair, it is extremely ſenſible.

The attitude of the head and neck contributes more than all the other parts of his body, to give him a graceful aſpect. The ſuperior part of the neck from which the mane iſſues, ſhould firſt riſe in a ſtraight line from the withers, and then, as it approaches the head, form a curve nearly ſimilar to that of a ſwan's neck. The inferior part of the neck ſhould have no curvature, but riſe in a ſtraight line from the poitrel, or breaſt, to the under jaw, with a ſmall inclination forward. If it roſe in a perpendicular direction, its ſymmetry and gracefulneſs would be diminiſhed. The ſuperior part of the neck ſhould be thin, with little fleſh near the mane, which ought to be garniſhed with long delicate hair. A fine neck ſhould be long and elevated, but proportioned to the general ſize of the animal. When too long, the horſe commonly throws back his head; and, when too ſhort and fleſhy, the head is heavy to the hand. The moſt advantageous poſition of the head is, when the front is perpendicular to the horizon.

The head of a horſe ſhould be thin and meagre, and not too long. The ears ſhould be ſmall, erect, but not too ſtiff, narrow, and placed on the upper part of the head, at a proper diſtance from each other. The front ſhould be narrow and a little convex, the eye-pits, or hollows between the eyes and ears, well filled, and the eye-lids thin; the eyes ſhould be pretty large and prominent, clear, lively, and full of fire; the pupil ſhould be rather large, the under jaw a little thick, but not fleſhy, the noſe ſomewhat arched, the noſtrils open and deep, and divided by a thin ſeptum or partition. The mouth ſhould be delicate and moderately ſplit, lips thin, withers ſharp and elevated, the ſhoulders flat, and not confined; the back equal, a little arched lengthwiſe, and raiſed on each ſide of the back-bone, which ought to have the appearance of being ſunk; the flanks ſhould be ſhort and full, the crupper round and plump, the haunches well furniſhed with muſcular fleſh, the dock or fleſhy part of the tail firm and thick, the thighs large and fleſhy, the hock round before, broad on the ſides, and tendinous behind; the ſhank thin before, and broad on the ſides; the tendon (or tendo Achillis) prominent, ſtrong, and well detached from the leg-bone, and the fetlock ſomewhat prominent, and garniſhed with a ſmall tuft of long hair behind; the paſterns ſhould be of a middling length, and pretty large; the coronet a little elevated, the hoof black, ſolid, and ſhining, the inſtep high, the quarters round, the heels broad, and a little prominent, the frog thin and ſmall, and the ſole thick and concave. We ſhould here add, that few horſes poſſeſs all theſe perfections.

The three natural and ordinary movements of horſes are walking, trotting, and galloping. In walking, the horſe raiſes his feet very little above the ſurface; in trotting, he elevates them a little more; and in galloping, ſtill higher. The walk ought to be ſmart, light, and ſure; the trot ſhould be firm, quick, and equally ſupported; and the fore-legs puſhed with rapidity by the hind ones. The trotting-horſe ſhould carry his head pretty high, and keep his body ſtraight; for if the haunches riſe and fall alternately, at every movement, and if the crupper rocks, the animal is too weak for this motion. Beſides the three movements of walking, trotting, and galloping, ſome horſes have another natural motion, which is known by the name of "ambling" or "pacing;" this motion, though leſs quick than the hard trot or gallop, appears, at firſt ſight, to be extremely fatiguing to the animal. The trot is, perhaps, the moſt natural motion of a horſe; but the pace, and even the gallop, are moſt eaſy to the rider.

Horſes are diſtinguiſhed into divers kinds, and are differently denominated, with regard to their ſtrain or country. As the Neapolitan, known by his hawk noſe; the Spaniſh genet, by his ſmall limbs; the Barb, by his fine head and deep hoof; the Dutch, by the roughneſs of his legs; the Engliſh, by a ſtrong knitting together, &c. the Flandrin, &c.

Horſes are alſo diſtinguiſhed, with regard to the uſes or offices they are reſerved for; as the coach-horſe, war-horſe, hunting-horſe, running-horſe, pack-horſe, &c.

Horſes are alſo diſtinguiſhed with regard to their colours; as a *bay*, which admits of divers ſhades or caſts; *viz.* a black-bay, brown-bay, dapple-bay; all which have conſtantly black manes and tails. *Dun* and *mouſe-dun*, having frequently a black liſt along the back, which denominates them *flea-backed*. *Flea-bitten*, which is white ſpotted with red. *Grey*, dapple-grey, ſilver-grey, ſad or powdered grey, black-grey, branded-grey, ſandy-grey, and iron-grey. *Griſſel*, or *rount*, a light fleſh-colour, intermixed with white. *Peach-colour*, or *bloſſom-colour*. *Pyebald*, which conſiſts of two colours, one of them white. *Roan*, a bay, black, or ſorrel, intermixed with white hairs. *Rubican*, black or ſorrel, with a few white hairs ſcattered about his body. *Sorrel*, common ſorrel, red or cow-coloured ſorrel; bright, or light-coloured ſorrel; burnt-ſorrel, all chiefly diſtinguiſhed by the colour of their mane. *Starling-colour*, reſembling a browniſh or blackiſh-grey, only more freckled, or intermixed with white. *Tyger-colour*, much the ſame with the branded-grey, only the ſpots ſmaller. *Wolf-colour*, *deer-colour*, *black*, *white*, &c.

Theſe colours are generally conſidered as ſymbolical of the nature, qualities, &c. of the beaſts, and accordingly their value is much influenced hereby. The dapple-grey is prized for beauty; the brown-bay for ſervice; the black, with ſilver hair, for courage; the roan for countenance; the ſorrel, black without white, and iron-grey, are reputed hot and fiery; the bright-grey, flea-bitten, and black with white ſpots, are ſanguine; the white, dun, and pye-bald phlegmatic and heavy; the mouſe-dun, red-bay, and blue-grey are dull; the peach-colour rarely prove obedient to the ſpur; the ſorrel ſeldom fail of being good, eſpecially if their legs, tails, and manes be black; and the ſame may be ſaid of the flea-bitten, at leaſt thoſe ſo marked in the fore-parts, or over the whole body; or, when only behind, it is an ill ſign.

Indeed, it is hard to lay down any univerſal rules in this caſe. The white, which promiſe the leaſt, often prove good, when black about the eyes and noſtrils; and there are excellent iron-greys, though that is not reputed a good colour. The white colour was anciently the moſt admired, and conſidered as a mark of pre-eminence and ſovereignty. Herodotus reports, that the Cilicians paid an annual tribute of three hundred and ſixty white horſes to Darius, king of Perſia; and in Xerxes' march againſt Greece, the chariot of Jupiter was drawn by eight white Nyſæan horſes, the colour being appropriated religiouſly to the deity. We read likewiſe, in the book of Kings, that the kings of Judah were uſed to dedicate horſes to the ſun. Tacitus ſays, the ancient Germans had certain horſes, which were white, that were conſecrated to their gods. We learn alſo from Livy and Diodorus Siculus, that white horſes were held in high eſtimation in Sicily and at Rome. This was alſo the caſe at Naples; and alſo anciently in our own country. Nevertheleſs, if we may believe Virgil and others, who pretended to prognoſticate the innate properties of horſes by the colour of their ſkins, and other marks, the white ſhould be always rejected, as having few qualities which can render them pleaſing or ſerviceable. Virgil evidently means, not white milk-horſes, but thoſe of a faint pale colour, ſomewhat bordering upon the cream-colour, or whitiſh dun; for he elſewhere commends the whiteneſs of the coats of Turnus's horſes. Claudian, alſo Plautus, Horace, Statius, and Palladius join in celebrating it; and we may reaſonably ſuppoſe that they ſpoke according to the fancy and opinion of the times in which they wrote.

The common marks of a dull, ſtupid horſe, are white ſpots round the eye, and on the tip of the noſe, upon any general colour whatever. Though the vulgar take theſe ſpots for ſigns of ſtupidity, yet it is certain they are marks of the goodneſs of a horſe; and ſuch horſes as have them are very ſenſible and quick upon the ſpur. The French call theſe ſpots *marques de ladre*.

Our dealers in horſes uſe the term mettled horſe to expreſs a creature of that ſpecies which has a great deal of vigour and heart, as they call it. Otherwiſe, there is a great difference between a mettled horſe, a horſe of vigour, and a fiery horſe; but as this is not ſufficiently attended to by gentlemen in their purchaſes of this animal, ſome general rules for the diſtinguiſhing real vigour in a horſe, may be acceptable in a work of this general kind.

When a horſe is ſtanding ſtill, the rider who has a mind to try whether he has vigour in him, ſhould keep him faſt with the bridle-hand, and apply the ſpurs to the hair of his ſides; this is called by horſemen pinching. If the horſe is impatient under this, gathering himſelf up, and endeavouring to go forwards, and champs upon the bit, without thruſting out his noſe, it is a ſign of vigour and right mettle in him. Some caution is to be uſed, however, in judging by this, to diſtinguiſh between a horſe that has vigour really in him, and one that has only a fine ſkin, and is rather ticklifh than mettled. This is the caſe with a great many horſes, and is found by their being very ſenſible of the touch of the ſpur, and ſhewing the appearance of a great deal of mettle and vigour when touched, but immediately loſing the apprehenſion of it. Theſe are of a dull diſpoſition, but only have a tender ſkin.

Pliny tells us, that if a horſe, in drinking, plunged his noſe deep into the water, it was reckoned a ſign of ſpirit and courage; and this notion prevails even at preſent in this country.

The mettled horſe is to be highly valued, but the fiery one is good for nothing; a horſe that is truly vigorous ſhould be calm and cool; he ſhould in general move on patiently, and only ſhew his mettle when it is required of him. The ſureſt method is to chooſe ſuch horſes as are extremely apprehenſive of ſtrokes, and are afraid at the leaſt appearance of their coming. Theſe, at the only cloſing of the legs and thighs, ſeem to be ſeized with fear, and alarmed, but without fretting or fierceneſs. A horſe that walks deliberately and ſecurely, and that without requiring the whip too often, will go on briſkly and without fretting, will go from the walk to the gallop, and as eaſily from the gallop to the walk again, and continually champs upon the bit, and trots with glibneſs, upon the ſhoulder eaſily, and ſnorting a little through his noſtrils; this is generally a creature of true metal and vigour, though it does not riſe to ſuch a fierceneſs as is troubleſome or dangerous. If to theſe good qualities a horſe be well upon his haunches, and have a light and eaſy ſtop, his head well placed and firm, and the feeling of his bit equal and juſt, the gentleman who loves riding will ſeldom need to complain of the price. All the good qualities of a horſe ſhould, however, never recommend him, unleſs he has a good mouth, and a ſenſible obedience to the ſpur.

Horses, *For the Age, Height, Teeth, &c. of*, ſee Age, Height, &c.

Horse, in *Agriculture*, the general name of a well known animal employed in various ſorts of team labour. There are two principal breeds of horſes in this country; the *race* or *blood* kind, and the *cart, plough,* or *team* ſort. It is the latter deſcription that is chiefly uſeful in the buſineſs of cultivating the ſoil. The moſt beneficial varieties of theſe kinds, in this view, would ſeem to be the improved black cart-horſe; the Suffolk punch-horſe, the Cleveland bay-horſe, and the Clydeſdale horſe. The firſt, or black cart-horſe, is the common ſort, met with in particular parts of the counties of Lincoln and York, becoming pretty general in thoſe of Leiceſter, Stafford, Derby, and Warwick; being, in point of ſize, larger than any others in the kingdom; but by nature inactive and ſlow in their movements; beſides being clumſy, and not unfrequently badly proportioned. They are in general more adapted to heavy draughts upon paved roads or ſtreets, than for the purpoſes of ploughing and harrowing the ground, or any other deſcription of farm-labour. The largeſt horſes of this kind are moſtly made uſe of in the drawing of drays, and other ſorts of heavy work, in large towns. The ſize below this is that which is commonly employed in the buſineſs of the field, as well as occaſionally in carriages. The ſmalleſt deſcription of them are uſually bought up for being trained to military uſes. It has been juſtly noticed that the large black dray-horſes, in point of ſize and fatneſs, do not admit of any equal; while in relation to hardineſs, vivacity, and nervous energy, they rank probably amongſt the loweſt of their kind.

The Suffolk punch, or ſecond variety of team-horſe, when of the genuine deſcription, is but a ſhort, plain-looking horſe, though very compact, and more active and hardy than any of the others that are met with in the ſouthern parts of the kingdom. It is a ſort that has, however, lately been much improved. When compared with the above breed, and that of the Cleveland, theſe horſes are of but ſmall ſizes, rarely exceeding fifteen or ſixteen and a half hands in height; they are, however, ſo active, that the cultivators in that diſtrict, as well as in Norfolk, very generally plough two acres a day in the buſy ſeaſons with a pair of theſe horſes, without any driver. This ſort of horſe is very commonly employed in the buſineſs of farming in the ſouthern diſtricts of the iſland. They require to be well kept in regard to food, but amply repay the expence under proper management, by the value of their labour.

The Cleveland bay-horſe, or third variety, is generally clean and well made in moſt of the parts; being very ſtrong and active, anſwering perfectly both for the team, coach, and ſaddle. There are few horſes capable of greater, or longer continued exertion in any of theſe intentions, than theſe. It is uſual for great numbers of theſe horſes to be ſold in the various fairs and markets of the diſtrict in which they are met with, ſuch as are the ſtrongeſt and moſt perfectly formed for the purpoſe of carriage-horſes, thoſe which are lighter in the bone, for the purpoſe of riding, and the others for their uſe in the different operations of huſbandry, &c.

The fourth, or Clydeſdale horſe, is a ſtrong, active, ſteady animal, generally from fifteen to ſixteen hands and a half in height; and probably, for the purpoſes of the cart and the plough, inferior to few in this country. It is ſuppoſed that we are indebted to the accidental circumſtance of ſome of the dukes of Hamilton for this variety, who brought from Flanders ſix coach ſtallions, ſome time about the cloſe of the ſeventeenth century; which, by being croſſed with the beſt mares of the kind found in the Lanark diſtrict, this ſort of horſe was produced. The farmers in the ſouth and ſouth-eaſtern parts of Scotland, are now even principally ſupplied with their team horſes from this and the neighbouring diſtricts. Some are ſold for their uſe as coach and ſaddle-horſes, and taken into the ſouthern parts of the kingdom, as well as for team-labour.

It is ſtated by a late writer, that this horſe " is lighter in the body than the Suffolk punch, and more elegantly formed in all reſpects. His limbs are clean and finewy, his neck longer, his head of a finer form, and his eye more ſprightly and animated than in either of the two former kinds. His tread is firm though tending towards the nimble; and he is capable of exerting a wonderful degree of muſcular ſtrength for a ſhort puſh without being hurt by it, which makes him particularly valuable for that hilly country, where there is a neceſſity for calling forth ſuch exertions on innumerable occaſions.

caſions. He is hardy, can live upon any food, and is, perhaps, the thriftieſt horſe for the cart or the plough that is to be found in the iſland, perhaps on the globe itſelf. For theſe purpoſes he is peculiarly adapted by the evenneſs of his temper and the ſteadineſs of his movements. For the plough he is, perhaps, every thing that could be wiſhed; being, in point of ſize, neither ſo large nor ſo unwieldy as to render him a burden to the ſoil; two of theſe horſes in the ſofteſt ſoil, under good management, being perfectly able to draw a full furrow with eaſe; and for horſe-hoeing, or ploughing a light ſoil in good order, one of the lighteſt ſort performs the work with alacrity and eaſe. What a benefit, ſays the writer, would reſult to the nation, were a ſet of judicious experiments to be conducted for a ſufficient length of time, for the purpoſe of aſcertaining the comparative powers and expence of keep of theſe laſt three different varieties of horſes, ſo that any one might know who choſe it, with certainty, the profit or the loſs that would reſult to him from employing the one or the other, for any particular purpoſe that he had in view."

Beſides theſe different varieties of farm-horſes, there are ſeveral horſes of a ſtill ſmaller deſcription, uſually known under the denominations of Galloways, poneys, &c. which may be occaſionally found uſeful in the buſineſs of huſbandry, though moſtly too ſmall in ſize for the forming of plough teams.

Whatever the variety of the breed of a horſe may be, in order to be well formed, it ſhould have the following ſhapes of the different parts: the head as ſmall as the proportion of the animal will admit; the noſtrils expanded, with a fine muzzle; the eyes chearful and prominent; the ears ſmall, upright, and placed near together; the neck, riſing out from between the ſhoulders, with an eaſy tapering curve, ſhould join gracefully to the head; the ſhoulders, being well thrown back, ſhould alſo fall into the neck, at what is termed the points, without being perceived, which probably facilitates the going much more than the narrow ſhoulder; the arm or fore-thigh ſhould be muſcular, tapering from the ſhoulder ſo as to meet a fine ſtraight ſinewy and bony leg; the hoof circular and wide at the heel; the cheſt deep and full at the girth; the loin or fillets broad and ſtraight, and the body round; the hips or hooks by no means wide, but the quarters long, and the tail ſet on ſo as to be nearly in the ſame right line as the back; the thighs ſtrong and muſcular; the legs clean and fine-boned; the bones of them not round but flat, or what is frequently termed lathy. But for the team of the farmer, the principal points to be attended to ſhould be thoſe of not having the neck either too long or too thick; the legs rather ſhort and flat than round and clumſy; the fore-feet even, but not too diſtant; the cheſt wide; the ſhoulders ſtrong but not high; good length of waiſt ſupported by a wide loin; the quarters full and ſomewhat raiſed; the legs ſtrong, firm, and muſcular, and the ſize from 15 to 16 hands in height.

It has been noticed, that horſes being ſomewhat forelow affords them an advantage in the draught, and that a tolerable length of waiſt gives them ſpeed in the walk, which is not unfrequently a point of importance in farm work. Some ſuppoſe that horſes for the purpoſe of farming ſhould be ſimilar to thoſe uſed in riding, only of larger ſizes; and in place of being capable of walking merely two or three miles in the hour, to be able to travel at the rate of four or five; as by that means the farmer would be enabled to plough more land in a given time; and to uſe more diſpatch in the work of the cart or waggon when neceſſary. The utility of a ſtrong active horſe at harveſt time is well known to every one; and in the buſineſs of conveying manure to the field and market work, ſuch properties are not leſs valuable.

By taking care in breeding to have the heads of horſes light, handſome, and well ſet on, and by proper attention in croſſing ſtallions and mares, coach and cavalry horſes of high value may be produced, which, if for ſale by the farmer, would, without doubt, pay him well for his trouble and expence. The breeding of good horſes is not more expenſive than that of bad ones, except in the attention which is neceſſary, though the difference in the price at the market is very great. And it is known to every one, that cart-colts become ready for ſale at an early period. There can be no doubt but that coach-horſes may be bred from mares of the Suffolk kind when covered by horſes of the ſtrong race or hunter ſorts, or the contrary. And ſhould it be the wiſh to rear horſes for ſale as hackneys, it will probably be the beſt method to ſelect both the mare and horſe of the blood ſort, or at leaſt with each ſome blood, which is perhaps better than making uſe of full blood horſes. Theſe ſhould be bred with well ſet on light heads, even and good feet, cloſe before and wide behind; plenty of bone below the knee, and high deep and ſlanting ſhoulders; deep in the girth, handſomely rounded in the barrel, as well as on the hip-bones; ſtraight in the back, but the waiſt long enough to give ſpeed, with the loins and fillets proportionately ſtrong; the tail even with the back-bone. But inſtead of breeding, ſuch farmers as intend to derive a profit from this deſcription of ſtock, may conſtantly find both colts and fillies for his purpoſe in the different fairs, markets, and other places.

Mares, for the purpoſe of breeding, ſhould always be well ſhaped in their different parts; have a gentle and eaſy diſpoſition; be poſſeſſed of a large carcaſe in proportion to their heights; being pretty full in their bellies, and appearing likely to form good nurſes and have plenty of milk. Thoſe intended for ſupplying the teams of the farmer with draught horſes ſhould, according to ſome, be large limbed, cloſe jointed, ſhort necked, wide cheſted, home ribbed with a capacious body; the eyes ſhould be perfectly clear, full, and pellucid, and the noſtrils large and open; the diſpoſition ought to be gentle and tractable, the conſtitution healthy and vigorous, free from blemiſhes of any kind.

The horſe, in this caſe, ſhould be bold and ſpirited, well made, and of a kindly diſpoſition; the conſtitution ſtrong and healthy, the temper good, and wholly free from any ſort of vice and contamination; as upon the good properties and healthy condition of the parents, in a great meaſure depend the future utility and advantage of their offspring. Since general experience has fully ſhewn that in what relates to form and other good qualities in the progeny, more depends on the mare than the horſe; the uſual practice of regarding the horſe more than the mare is highly improper, as being diſadvantageous. The form and other properties of the horſe ſhould always have as much ſimilarity as poſſible to thoſe of the mare, as in this way their joint properties may be more reaſonably expected in the young which they produce, than by violent unnatural croſſing. Where a half-bred mare, for inſtance, is put to a large heavy awkward cart horſe, or the contrary, the offspring muſt naturally turn out an indifferent mungrel breed that has rarely the ſize and ſtrength of the one, or the ſpirit, activity, and fine bone of the other. See BREEDING, LIVE-STOCK, and TEAM.

In breeding the dray-horſe, leſs movement or activity is requiſite, but more power; and the ſame principles are applicable in ſome meaſure to thoſe for the waggon, though in a far inferior degree. For theſe uſes it is important that they be very bread-breaſted, and thick in the ſhoulders, without their lying ſo much backward, or riſing ſo much in the fore-hand, as is the caſe in ſaddle-horſes.

Mares in general are not ſuffered to take the horſe in this country until they are from two and a half to three or four years of age, but continue to breed till they reach a good age. as 12 years and upwards.

The horſe may be permitted to cover from the age of three or four years until he becomes unfit for the purpoſe by age. Stallions ſhould conſtantly be kept high with the beſt ſorts of food, and be well dreſſed and taken care of, as without this attention they never anſwer well.

The ſeaſon at which the mare commonly takes the horſe is moſtly from about the beginning of April until the end of June, the laſt month being generally ſuppoſed the beſt period. An early foal is, however, conſtantly to be preferred to ſuch as are late.

The mare goes with foal uſually about eleven months, but ſometimes exceeds it a few days. It is commonly the main object with farmers, where poſſible, to have their mares covered at ſuch times, as that there may be plenty of graſs at the period of foaling, as well as warm favourable weather, as both are highly beneficial to the new dropped foal.

Mares are in ſome places wholly taken from work ſome weeks before the time of foaling; but this is by no means the general practice of the country. In the eaſtern and midland counties that adjoin them, in which the breeding and rearing of horſes are more perfectly underſtood than in moſt other parts of the kingdom, it is not unfrequently the cuſtom to work them to the very period of foaling. But there are certainly much care and attention neceſſary in working mares that are ſo heavy with foal; as an over heat, too hard labour, a fright, or ſudden jerk, or any other ſimilar cauſe, may endanger not only the loſs of the foal, but alſo that of the mother.

It is the cuſtom in moſt of the improved diſtricts of the kingdom where the breeding and rearing of horſes are practiſed, after foaling to turn the mare and her foal out into a paſture field, where they remain for two or three weeks before the mare is again put to work either in the plough or cart, the foal during the time being ſuffered to ſuckle at pleaſure. After having had this reſt, ſhe is again ſuffered to work in the uſual way, the foal being confined in ſome proper place during the time. In the intention of avoiding the evils ariſing to the foals from bad or over-heated milk, ſome of the Yorkſhire breeders are extremely careful not to ſuffer the mares to go near their foals, after their return from work, until their udders have been well bathed with cold water, and the greateſt part of the milk drawn from them. There is likewiſe another practice which has, perhaps, a ſuperiority to the above, in the ſame diſtrict as well as ſome others; which is, as ſoon as the foal has acquired ſtrength ſufficient, and is fully capable of following its mother, to permit it to accompany her to the field during the time of working, and to ſuckle there as there may be occaſion. In this way the foal has full exerciſe, without incurring any danger from the over-heated milk, it being drawn off ſo frequently. Theſe are the common modes in uſe while the foal is ſuffered to ſuck, which is moſtly about ſix months, as from the time of foaling to Michaelmas, the period at which they are uſually weaned.

In the buſineſs of weaning foals it is a good practice to confine them at a diſtance from their mothers in ſome ſmall ſtable or ſhed for the purpoſe, where there is a rack and manger, in which they may be fed with clean ſhaken hay, and well ſifted oats, bruiſed in a mill. Under this treatment they ſpeedily forget their mothers, and become quite tractable and reconciled to the keeper. They ſhould be permitted to exerciſe and enjoy themſelves in a paſture field or paddock, contiguous to the place of confinement, during the ſunny parts of the middle of the day, it being dangerous to keep them out during the night, on account of their tenderneſs.

When the foals have been weaned, the uſual cuſtom is to put them directly into ſome good freſh paſture, where they may continue ſo long as the weather proves mild and temperate, when, on the approach of winter, they are to be fed with a ſufficient quantity of hay, placed in the ſhed or hovel in the field for the purpoſe, into which they can freely enter at pleaſure. The year following, in the ſummer, they are removed into other paſtures, often the moſt inferior on the farm, where they continue until the commencement of the enſuing winter; when they are either permitted to range in the common paſture fields, or brought home to the yards. It is adviſed by ſome to have the foals fed during the winter ſeaſon with a little corn twice in the courſe of the day; or carrots, with hay, oat-ſtraw, &c., letting them have a well littered ſhed or yard that is perfectly ſheltered. Such colts as are fed at home with green meat cut freſh for them daily during the ſummer ſeaſon, ſhould have a range daily upon a field or adjoining common, for the purpoſe of exerciſe. And the yearling colts ſhould be kept quite ſeparate from the mares with their foals.

In the management of young horſes, thoſe of the cart colt kind are often begun with at about two years of age; and one great object in this buſineſs is firſt to teach them docility, by frequent leading in the halter, as well as to back and go in the ſhafts or traces. But this is better delayed in ſaddle colts till the third year, or the autumn preceding it; and they ſhould now be carefully attended to, and have a good mouth given them, though ſome think but little of it. They ſhould likewiſe be taught to canter handſomely; and when they are of proper ſize, they may be gently wrought in the plough or other ſort of team labour. Their going well, and being quiet in harneſs, render them of more value as well as utility in the opinion of many.

The field work ſuch horſes are at firſt inured to, is generally that of harrowing, to which they ſhould ſeldom be kept more than one-half of the day, when they commence it, and afterwards only very gently, for the remainder of the ſeaſon.

It is the uſual practice of the northern horſe-breeding farmers to diſpoſe of their young ſtock, at two or three years old, to thoſe in the more ſouthern parts of the kingdom, who, after keeping and working them about the ſame length of time, diſpoſe of them to the dealers in the metropolis and other large places. This cuſtom is very common, and extremely convenient to all the different parties engaged in it; as the breeder meets a ready and conſtant market for his young horſes at the times when he wants to be quit of them, and is thereby enabled to carry on the breeding ſyſtem without the danger of being overſtocked. And thoſe who are the firſt purchaſers are able to diſpoſe of them to the dealers in the large cities and other places in the ſouth, as proper opportunities may be afforded, as they are fully aware that a ſupply of young horſes will reach them in proper time to anſwer their intentions. Beſides, the dealers in the metropolis can, without the expence and trouble of travelling into the more northern diſtricts, where the largeſt proportion of young horſes is bred and reared, ſupply themſelves with ſuch as are proper for their uſes in the different counties in their own vicinity. In the carrying on of this buſineſs, beſides the principals, there are generally two agents or more who derive their living from it, the jobber or middle-man, who procures the horſes from the breeders and ſells them to the farmers in the ſouth; and the dealer in the vicinity of the metropolis, who makes the purchaſes from the farmers in the ſouth, at his own riſk, ſtanding the chance of ſale to the buyers in the above place; or who provides them on commiſſion for ſuch dealers. The young horſes are moſtly ſold with their full tails to the dealers; who afterwards make them up by art, ſo as to ſuit their different views. They uſually undergo the proceſſes of docking and nicking, and often various other operations performed upon them. After being kept, or what is often termed made up, by having bran maſhes, or thoſe of coarſe ground oats, and boiled grain, given them for two or three months, they are diſpoſed of by the dealers to their cuſtomers in the metropolis.

The uſual periods of cutting or gelding colts, is either while they are quite young, or when they have attained the age of two years. This is particularly the caſe when it is the intention to keep them, without making uſe of them in labour until the enſuing ſpring. The moſt proper ſeaſon for performing this operation is in the early ſpring months, before the weather begins to get too warm. See CASTRATING and GELDING.

For farming purpoſes it becomes the buſineſs of the cultivator to ſuit the horſes in their ſtrength and ſize, to the nature of the work that is to be done, as where they are diſproportioned in either of theſe reſpects, or in their number, the profits of the farmer muſt be leſſened. And where the ſtable economy is not ſo correct or proper as it ought to be, and the horſes of courſe become diſeaſed, or where they are wrought too hard, or not kept ſufficiently to their labour, as well as where they are fed without regularity; the ſame thing muſt be the conſequence. In the beſt arable diſtricts in the northern parts of the kingdom, the methods of working and treating the labouring horſes are, at the time of the ſeeding, to increaſe the length of the time of working in the day, and to have recourſe to ſuch food as is of a better quality, than that which is uſually allowed during the winter ſeaſon. They are at this buſy period commonly foddered with hay or pea-ſtraw, with each half a peck at leaſt of dry clean oats, or theſe in mixture with peas or beans, as ſoon as they return from the field in the morning and evening; and a certain portion of the dreſſings of the corn in mixture with common or cut chaff, either well ſoaked in cold water, or boiled, is alſo given every forenoon and afternoon before the work is begun again. They are conſequently, during the laborious part of this intereſting ſeaſon, fed regularly four times in the day with corn. But in theſe northern parts of the iſland, inſtead of executing the whole of the diurnal labour conſtantly, in what is termed, in the ſouth, one journey; the farm horſes, from the middle of March to the end of September, make two journeys. This is conſidered by ſome as being a ſuperior mode of proceeding, in conſequence of the work being more divided, and the horſes reſting ſome hours in the moſt hot parts of the day.

During the ſummer, except in the time of labour, the team horſes are kept in the ſtable, and permitted to have as much cut clover as they can eat. But in the wheat ſeed ſeaſon, and at the time the grain is conveyed to the ſtack yard, a portion of corn is allowed, and which is continued in more full quantities, as long as the weather keeps ſuitable for the operations of the plough. In the winter ſeaſon, when the labour of the team is greatly diminiſhed, the horſes have ſtraw with about half a peck of corn in the day. But on ſome farms the allowance of corn is wholly withdrawn, and properly cleaned potatoes made uſe of in its place. It is conſtantly the practice to have theſe horſes carefully cleaned and dreſſed, and as much under the eye of the farmer as poſſible. See HORSE-KEEPER and TEAM.

It is neceſſary likewiſe to be very attentive to the feet and ſhoes of team horſes; and the improved methods of fixing and forming them ſhould be had recourſe to. Nothing ſhould be pared from the ſole or other parts except the rotten looſe matters. See SHOEING *of Horſes*.

Some attention is likewiſe neceſſary on firſt turning out horſes to graſs. It is probably the beſt practice to inure them to the change gradually, by only letting them remain in the field for a little while on their being newly put to the graſs; afterwards increaſing the length of their ſtay, as there may be occaſion. It is probably the beſt time to turn them out in the evening, though the uſual time is in the morning. See GRAZING and PASTURE.

HORSE, *Airing of a.* See AIRING.

HORSES, *Backing of.* The firſt backing of a horſe is a thing of great conſequence, as his value afterwards very much depends on it. After a colt has been exerciſed ſome time, morning and evening, and becomes ſomewhat obedient, he is to be taken to ſome ploughed lands, the lighter the better; he muſt be made to trot over theſe in the hand, by that means to tire him and abate his wantonneſs. When this is done, care muſt be taken that all the tackling be good and firm, and every thing in its due and proper place; then a perſon is to hold his head, and another to mount him; but this muſt not be done ſuddenly, or at a jerk, but very gradually and ſlowly, by ſeveral half riſings and heavings. If he bears this patiently, the perſon is to ſeat himſelf firmly on his back; but if he be troubleſome, and not tamed enough, the perſon is to forbear the attempt to mount, and he is to be trotted hard in the hand over the ſame ploughed lands again, till he is willing to receive the rider quietly on his back. When this is done, the perſon who is on his back muſt cheriſh him, and the man who has his head muſt lead him a few paces forward; then he is to be cheriſhed again. The feet are to be fitted well in the ſtirrups, and the toes turned out; afterwards the rider is to ſhrink and move himſelf in the ſaddle, and the perſon who holds his head is to withdraw his hand a little farther from the mouth. As the rider moves his toes forward, the holder muſt move him forward with the rein, till he is made to apprehend the rider's motion of body and foot, which muſt always go together, and with ſpirit, and will go forward without the other's aſſiſtance, and ſtay upon the reſtraint of the rider's hands.

When this is accompliſhed, let him be cheriſhed, and have graſs and bread to eat; and then let the rider mount and alight ſeveral times, cheriſhing him between each time: and thus he is to be managed till he will go on, or ſtand ſtill at pleaſure. This being done the long rein may be laid aſide, and the band about the neck, which are always uſed on this occaſion, and nothing will be neceſſary but the trenches and caveſon, with the martingal. A groom muſt lead the way before; or another horſe going only ſtraight forwards, and making him ſtand ſtill when deſired. In this manner, by ſometimes following, and ſometimes going before another horſe on the trot, the creature will by degrees be brought to know that it is his buſineſs to be quiet and governable. See FOAL.

HORSES, *Breeding of.* In order to have a good and beautiful race of horſes, it is neceſſary to chooſe for a ſtallion a fine barb, free from hereditary infirmities; ſuch as weak eyes, bad feet, ſpavins, purſineſs, or the like. Diſorders that ariſe from accidents are of no conſequence; nor is the horſe to be at all the leſs valued for them as a ſtallion. Three months before this horſe is to cover a mare, he ſhould be fed with ſound oats, peas, or beans, or with coarſe bread, and a little hay, but a good quantity of wheat ſtraw; he ſhould be led but twice a day to water all this time, and after every watering walked about an hour, but not over-heated. If he be not prepared and put in heart in this manner, the colts will be weakly, and the horſe himſelf will be ſpoiled, growing purſy and broken-winded.

If he is put to too many mares, he will not laſt long; his mane and tail will begin to fall off through weakneſs, and it will be difficult to get up his fleſh again by the next year. The number of mares ſhould be proportioned to his ſtrength, and twelve, fifteen, or at the moſt twenty, are as many as a horſe will well ſerve for in a ſeaſon. Mares go with foal eleven months, and as many days over as they are years old. This being certainly known, it is eaſy to contrive ſo that all the foals may be brought forth at a time when there is plenty of graſs. About the end of May the mares are to be put into an incloſure capable of feeding them as long as the ſtallion is to be with them, or that they are in ſeaſon. In this incloſure all the mares to be put together, as well thoſe which are barren as others. The ſtallion's hind ſhoes are to be taken off, but the fore-ſhoes ſhould be left on to preſerve his feet; then lead him forth, and let him cover a mare twice in hand, to render him more tame and gentle. After this take off the bridle and turn him looſe among the reſt, where he will become familiar with them, and not one of them will be horſed but when they are in ſeaſon. There ſhould be a little lodge built up in ſome part of the incloſure, and peas, beans, oats, bread, and other good food, put into the manger in it, that the horſe may retire into it in the ſcorching heats, and eat what he likes beſt. He muſt be thus entertained during the whole time he is with the mares, which is to be about ſix or ſeven weeks.

Mares that are very fat and groſs do not hold well; but thoſe which are moderately fat conceive with the greateſt ſucceſs and eaſe. To bring a mare in ſeaſon, it is a common thing to give her a quart of hemp-ſeed, or twice that quantity, night and morning, for eight days before ſhe is brought to the horſe. If ſhe refuſe it alone, it may be mixed with beans or oats, and will go down; and if the ſtallion eat of it alſo, it will make him the better.

The ſtallion ſhould not cover before he is ſix years old, nor after he is fifteen. A mare ſhould never be covered before ſhe is three years old; they ſhould be always ſound and healthful, and of a good breed; ſuch as theſe will bring forth better and finer foals than any others. The colts produced from theſe, are not to be uſed for ſtallions; for they will degenerate, and the race will ſoon become exactly our own country breed. If a barb is not to be had, a Spaniſh horſe is to be choſen. See MARE, and STALLION.

HORSES, *Diſeaſes of.* See BOTTS, CONSUMPTION, COUGH, FARCY, FEVER, GLANDERS, GRIPES, HORSE-*worm*, &c.

The horſe is likewiſe in ſome caſes ſubject to the ſtone.

HORSES, *Eyes of.* See EYES *of Horſes.*

HORSES, *Fattening of.* The being able to do this ſpeedily is one of the greateſt arts our dealers have, and indeed is one of the greateſt niceties in the whole management of theſe animals. Many methods have been preſcribed; but the following ſeems moſt to be depended on; take elecampane, cummin-ſeed, tamariſk, and aniſeed, of each two ounces; common groundſel, one handful; boil all theſe very well, with two handfuls of garlic, ſcraped and cleaned, in a gallon of good ale; ſtrain the liquor well off, and give the horſe a quart of it every morning made hot; keep him warm after it. After he has taken this for four or five mornings, he may be turned out to graſs, or kept in the houſe, as the ſeaſon will permit. But whenever provender is given him, a quantity of powder is to be prepared of equal parts of cummin-ſeeds and elecampane, and give him half an ounce of it every time, ſprinkling it in by degrees as he eats, that he may not nauſeate the whole.

If this method does not ſucceed in a ſhort time, then take two ſpoonfuls of diapente; brew it in a pint of ſweet wine, and give it the horſe for three mornings. This will take off any inward ſickneſs, and make the other things take effect. After this feed him with good provender three times a day; that is, after his watering in the morning, after his watering in the evening, and at nine o'clock at night. If he does not eat the provender well and freely, it muſt be changed for ſome other kind. If all this does not ſucceed, let the horſe be blooded; and then take half a buſhel of coarſe barley meal, put it into a pail-full of water, and ſtir the whole together very well; then let it ſettle by ſtanding. Pour off the clear liquor into another veſſel, and let him drink it for his common drink, and eat the remainder, which falls to the bottom of the pail. If he refuſe to eat this alone, there may be ſome bran mixed among it. This ſhould be given him three times a day, morning, noon, and night. If he does not rightly take to the meal with the bran, ſome oats muſt be mixed with it, and this will readily bring him to feed on it. But whichever way is uſed, they muſt be by degrees diminiſhed in quantity, till at length he is brought to eat the meal alone; for that is the thing that muſt fatten him up. Care muſt be taken that the barley is ground freſh every day as it is uſed, for it quickly grows ſour; and when this has once been the caſe with one parcel, no art will ever bring the horſe to touch any of it afterwards. Scarce any horſe but will be well fattened by keeping him to this diet for about twenty days.

Barley ground in this manner cools and purges the creature; but the greateſt efficacy, as to the fattening of him, lies in the water, which by this management takes up all the rich part of the barley into itſelf. When the horſe grows luſty on this diet, it muſt be taken from him by degrees, giving him at firſt oats once, and barley-meal twice a day; and then oats twice, and the barley-meal once, till he is perfectly weaned from it. In the mean time he muſt have good hay, and he muſt not be ridden; only it will be proper to walk him gently about an hour or two in the heat of the day. If it be found that the horſe wants a good ſmart purging during the time of his continuing on the barley-diet, the beſt time to give it him is after the firſt eight days, and the following is a very proper ſort of phyſic; take of the fineſt aloes one ounce, agaric, in powder, half an ounce; the powder of Florentine orrice, one ounce; let all theſe be mixed together, and put into a quart of milk, warm from the cow. This will work very briſkly; and after it is over, the uſual diet is to be continued. If horſes of value were to be kept to this diet once a year, it would make them leſs hot and dry, and not ſubject to many diſeaſes which they are troubled with at preſent, and would be particularly uſeful after campaigns and long journeys. If the horſe loſes his appetite by this diet, it will be proper to tie a chewing-ball to his bit, renewing it ſo often, till at length he begins to feed heartily on the barley; for theſe balls at once reſtore appetite, and are themſelves of a fattening nature. See CHEWING-*balls.*

HORSE *on a journey, Management of a.* The common method of travelling in England being on horſeback, it may be proper to give ſome general rules for keeping the creature ſound, and doing the buſineſs agreeably, without many of the accidents which uſually attend it.

Care muſt be taken that the ſhoes be not too ſtraight, and do not pinch the horſe's feet any way; but be well ſhaped, and fit eaſy. It is proper to have them put on freſh a few days before the journey, that they may laſt well, and that they may be ſettled to the feet before the ſetting out. The bridle is next to be examined; that the bit of it be proper, and not too heavy; for if it be, it will incline him to carry low when he grows tired, and reſt upon the rider's hand; this is what they call the uſing a fifth leg. It is a very diſagreeable thing, but may often be avoided, only by taking a proper care of the bit. The mouth of the bit ſhould reſt upon his bars, about a finger's breadth from his tuſhes, ſo as not to make his lips uneaſy. The curb ſhould reſt in the hollow of his head, a little above the chin; and if it gall him, the place muſt be defended with a piece of buff or other ſort of leather.

The next thing to be regarded is the ſaddle; and proper care muſt be taken as to this, that it do not reſt either upon the withers, reins, or back-bone; and that one part of it do not preſs upon the back, any more than another. Some riders gall a horſe's ſides below the ſaddle with their ſtirrup-leathers. This is moſt likely to happen to a lean horſe; and to prevent it a leather ſtrap ſhould be fixed between the points of the fore and hinder bow, of the ſaddle, and the ſtirrup-leathers ſhould be made to paſs over theſe leathers.

It is always beſt to begin a long journey by ſhort ſtages; and this is the more neceſſary, if the horſe has not been exerciſed for ſome time before. If it be a horſe that is ridden, he ſhould be ſuffered to ſtale as often as he likes, and even invited to it; but, if a mare, ſhe is to be leſs indulged in it as leſs neceſſary, and often diminiſhing her ſtrength. It is always adviſable to ride very ſoftly for a quarter of an hour, or half an hour before coming in to the inn at night, that the horſe may not be over-hot when put into the ſtable; but if the haſte of the journey will not admit of this, the horſe ſhould be walked in ſome perſon's hands, to cool him gently before he is put up.

If the weather is cold, a cloth ſhould be laid over him while he is walked; and when taken in, his whole body ſhould be rubbed and dried with ſtraw. Some have a cuſtom of ordering their horſes' legs to be rubbed well down, on their firſt coming in; but this is very prejudicial while the horſe is hot, and ſhould always be let alone till he is perfectly cooled.

As ſoon as the horſe is cooled, and ceaſes to beat in the flanks, the bridle is to be taken off, the bit waſhed, and hay given him, that he may eat at pleaſure. The duſt in very dry weather will ſometimes clog up the tongue of the horſe in ſuch a manner, that he cannot eat without great difficulty; in this caſe ſome bran and water ſhould be firſt given him to waſh his mouth, or the ſervant ſhould do it with a wetted ſpunge.

Theſe are the proper methods when the horſe has been rode moderately; but when he has been hurried at a great rate, the ſaddle is to be taken off as ſoon as he is put up, and the ſweat rubbed off with a ſweat-knife; and then the whole body and legs are to be rubbed carefully down, and the head is to be wiped with a cloth, as alſo the back under the ſaddle, and the thighs; then the ſaddle ſhould be clapped on again, and the horſe gently led up and down, till cool and dry. The feet are alſo to be examined, to ſee if a ſhoe be wanting, or if any of them preſs upon the ſole; and the dirt, gravel, or other foulneſs, is to be picked out from between the ſhoe and the foot. The openings of the feet may be ſtopped with cow-dung, and the hoofs, if brittle, ſhould be anointed with ſome fatty ſubſtance juſt at the ſetting on; and in dry weather they ſhould be greaſed, not only at night, but noon. Many horſes, as ſoon as unbridled, will lay themſelves down, inſtead of eating.

Many are apt on this to ſuppoſe the horſe ſick; but it is generally owing only to the heat and pain they find in their feet, which renders them unable to ſtand upon them. In this caſe, if their eyes are examined, they will be found briſk and good; and the hay being offered them as they lie, they will eat it greedily. This ſhews there is no inward diſorder, and the heat and tenderneſs of the feet, if examined, will ſhew that they are the parts in pain. The principal thing to be done in this caſe, is taking care that the ſhoes do not reſt upon the ſoles. This is not eaſily known, but by taking off the ſhoes, which in caſes of extremity ſhould always be done; it will then be found where the ſole is touched by the ſhoe, being in that part more ſmooth and ſhining than elſewhere. In this caſe the feet are to be pared in thoſe parts, and then the ſhoes are to be fixed on again, anointing the hoofs, and ſtopping the ſoles with hot black pitch or tar.

Theſe are the means by which travelling will be rendered eaſy and commodious both to the rider and the horſe; but there is ſome care alſo to be taken of the creature, after he comes off from a long journey. The firſt thing to be done is to draw the two heel-nails of the fore-feet, and if the ſhoe be large, then four ſhould be drawn; two or three days after the horſe ſhould be blooded, and for ten or twelve days after this he ſhould be fed with wet bran, without any oats; but he is to be kept well littered. The reaſon of drawing the heel-nails is, that the feet are apt to ſwell after journeys; and if this is not done, the ſhoes preſs upon them in that part, and become very uneaſy to them. It is adviſable to ſtop them alſo with cow-dung for ſome time; but they are in the wrong who pare them down after taking off the ſhoes, for the humours being all in motion after this, they are apt to fall into the feet.

If there appear any danger of the creature's legs ſwelling after the journey, it may be eaſily prevented by this means: take a quantity of the dung of an ox or cow freſh made; mix it with ſo much vinegar as will reduce it to a ſoft paſte, and add to it a handful of ſalt; with this rub all the hips thoroughly up to the knees, and let it dry on; give the water in a pail that evening, that the legs may not be wetted, and the next morning the horſe is to be led to water, and the whole remaining matter waſhed of. The jockies have a very cunning trick to recover the hoofs of a horſe injured by a long journey: they make a hole in the foot, and fill it with moiſtened cow-dung; they keep this in it a month, and the continual moiſture occaſioned by it makes the hoof grow very quick, and ſoon recover the proper dimenſions; but it ſoon after dries and ſhrinks ſo, that the foot is ſtraightened, and the whole hoof becomes brittle.

Cow-dung, applied to a horſe's foot, always moiſtens the ſole; but it dries up the hoof if continued any length of time to it. The beſt method of recovering a horſe's hoofs, is to make a hole in the ſtable floor, filled with blue clay a little wetted; in this the horſe ſhould keep his fore-feet a month; this will have more effect than a ſmall portion of cow-dung in the foot; and the effect will be of ſo different a nature, that the hoof will be rendered more tough than before, inſtead of being made brittle by it.

Moſt horſes that are fatigued, or overworked by long journies, have the flanks altered by it, without being purſy; eſpecially horſes naturally vigorous, which have been worked too violently. The beſt remedy in this caſe, is to give the horſe half a pound of honey in the morning, mixed among a feed of ſcalded bran: if he eats the half pound readily, give him a pound the next morning: continue this till the honey ceaſes to purge the creature; after this, powder of liquorice may be added to the ſcalded bran, and this continued ſome time, and two or three glyſters, at convenient diſtances of time, will be found very ſerviceable. If the horſe be very lean, it will be proper to give him ſome wet bran over and above his proportion of oats ; and graſs is alſo very proper, if the creature be not inclined to be purſy. This caution, however, is to be had at all times, that exceſſive feeding may be bad, by ſubjecting the horſe to the farey. When the horſe begins to drink heartily, it is a ſign that he will ſoon recover. Though this ſometimes fails, it is a good general rule.

When a horſe comes tired into a ſtable, freſh litter has the virtue always to occaſion him immediately to ſtale. This is known to be a very great advantage to a horſe in a tired ſtate ; and when the litter is old and dirty, it never has any ſuch effect upon him. If the owners knew how refreſhing it is to a horſe to diſcharge his urine on his return from labour, they would be more careful in giving him all means and occaſions of it than they are. This ſtaling after fatigue prevents thoſe obſtructions in the neck of the bladder or urinary paſſages, which horſes are too ſubject to ; the bladder being often inflamed by the long retention of the heated urine in it, and the creature periſhing by it. Some of our farmers act wrong in this caſe of the litter, not through careleſsneſs or accident, but by principle ; they order the old litter to be left a long time in the ſtables, that it may be impregnated with more and more of the urine, &c. of the animal, and be made richer for the fields. It is not to be doubted but the manure is greatly improved by this ; but the damage done to the horſe by it, is greatly over-proportioned to the benefit. The heat which the dung acquires, by thus lying together, ſpoils the feet of the creature, and makes it unfit for any ſervice, and occaſions many diſtempers, which are ignorantly continued and increaſed by the continual addition of heat in the fermenting dung, till at length the horſe periſhes.

Thoſe who have any concern with horſes know, that it is ſometimes very difficult to make them lie down in the ſtable. The following ſimple method is propoſed for this purpoſe by a noted dealer. When you have a mind to make him lie down, take a piece of ſtrong pack-thread, or a cord, and tie it as tight round the horſe's tail as poſſible, without breaking the ſkin, and as near as you can to the rump-bone : this will give him a pain in the back, and he will be glad to change his poſture, to get eaſe ; and when he finds he cannot in any other way procure it, he will lie down, which he will find the moſt eaſy poſture, and he will of courſe take a liking to it.

Horses, *Watering of.* Whilſt a perſon is on a journey, the horſe ſhould always be ſuffered to drink of the firſt good water he comes to after ſeven o'clock in the morning in ſummer, and after nine or ten in the winter. Moderately pure water is to be preferred, that being beſt of all which is neither too clear nor penetrating, nor muddy and ſtinking.

Though it is the cuſtom in England to run and gallop horſes after drinking, which we call *watering courſes*, and which we ſuppoſe brings them into wind, yet Sollyſel, and many other of the beſt judges of horſes, tell us, that it is one of the worſt and moſt pernicious practices that we can be guilty of ; no good can accrue from it, and many horſes are rendered purſy by it.

While a horſe is drinking, the rider ſhould draw up his head five or ſix times, making him move a little between every draught. The rider need not be afraid of giving him water, with proper moderation, even in almoſt any circumſtances. If he be warm and ſweat very much, yet if he is not quite out of breath, and there are four or five miles to ride, he will be better after drinking a little, than if he had drank none at all ; only obſerving, that if the horſe were very warm at his going into the water, his pace muſt not be leſs than a moderate trot when he comes out, that he may not be chilled.

In the time of a journey the horſe ought to be ſuffered to drink in this manner of the waters that come in the way, as often as may be ; for if the rider happens to bait when he is hot and ſweaty, he muſt not be ſuffered to drink for a long time, as it would endanger his life ; and if he has not been watered in this manner on the road, his exceſſive thirſt will often prevent his eating, and he will not be able to touch any ſort of food for an hour or two, which is uſually more time than the rider can ſtay : and yet without eating at baiting times, he will not have ſtrength to go on. The giving him water on the road will, on the contrary, keep him ready for food whenever it is offered him, and the rider need ſtay no longer than his own refreſhment requires, the horſe eating immediately, and being readily qualified to go on again.

If there be any ſhallow water in the way a little before the coming to the inn where the horſe is to reſt all night, it is always proper to ride him in, and not only give him a little drink, but ride him about ſeveral times, not quite up to the belly ; this will clean his legs, and prevent humours from falling down into them. If the horſe be very warm, and there has been no convenience of watering him upon the road, the oats that are given him ſhould be firſt ſteeped a-while in ale ; this will induce him to eat, though he could not have touched any that were wholly dry.

Many are of opinion that horſes are ſometimes ſpoiled by giving them oats before their water ; but Mr. Sollyſel affirms, that though it be not the cuſtom to give oats till afterwards, yet it never does any harm to feed the horſe with them both before and after drinking ; and that it is often proper and neceſſary, eſpecially when the horſe has been hard rid, and is warm.

Horse, *Draught*, in *Farming*, a ſort of coarſe-made horſe deſtined for the ſervice of the cart or plough. In the choice of theſe horſes for what is called the ſlow draught, they are to be ſelected of an ordinary height, for otherwiſe when put into the cart one draws unequally with the other. The draught-houſe ſhould be large bodied and ſtrong-loined, and of ſuch a diſpoſition, as rather to be too dull than too briſk, and rather to crave the whip than to draw more than is needful. Mares are the fitteſt for this uſe for the farmer, as as they will be kept cheap, and not only do the work, but be kept breeding, and give a yearly increaſe of a foal. They ſhould have a good head, neck, breaſt, and ſhoulders ; for the reſt of the ſhape it is not of much conſequence. Only, for breeding, the mare ſhould have a large belly ; for the more room a foal has in the dam, the better proportioned it will be. Draught-horſes ſhould be always kept to that employ. Some put them to the ſaddle on occaſion, but it does them great harm, alters their pace, and ſpoils them for labour. The draught-horſe ought to have a large broad head, becauſe horſes of this ſhaped head are leſs ſubject than others to diſeaſes of the eyes. The ears ſhould be ſmall, ſtraight, and upright ; the noſtrils large and open, that he may breathe with the more freedom. A horſe with a full and bold eye always promiſes well. On the other hand, a ſunk eye and an elevated brow are bad ſigns. The horſe is eſteemed fitteſt for this purpoſe alſo, that has a large and round buttock, which neither ſinks down nor cuts. He muſt have a firm and ſtrong tail, and the dock muſt be thick and well furniſhed with hair, and placed neither very high nor very low. The legs ſhould be rather flat and broad than round : the roundneſs of the leg being a fault in a horſe deſtined to labour, that will ſoon ruin him. As to the hinder legs, the thighs ſhould be fleſhy and long, and the whole

whole muſcle which ſhews itſelf on the outſide of the thigh ſhould be large and very thick. No country can bring a parallel to the ſize and ſtrength of our horſes deſtined for the draught. In London there are inſtances of ſingle horſes that are able to draw on a plain, for a ſmall ſpace, the weight of three tons, and which can with eaſe, and for continuance, draw half that weight. The pack horſes of Yorkſhire uſually carry a burden of four hundred and twenty pounds, over the higheſt hills of the north, as well as the moſt level roads: but the moſt remarkable proof of the ſtrength of our Britiſh horſes is derived from that of our mill horſes; ſome of which will, at one load, carry thirteen meaſures, which, at a moderate computation of ſeventy pounds each, will amount to nine hundred and ten pounds. Nothing is ſo eſſential to the health of theſe ſerviceable creatures as cleanlineſs; if they are fed ever ſo well, and not kept clean, they will be ſubject to numerous diſeaſes.

The ſervant who has the care of them ought to be up very early, and to clean the racks and mangers from all filth. The currying of them ought to be carefully performed every morning, but not in the ſtable, for the duſt to fall upon the other horſes, as is too often done. After the horſes are duſted, they ſhould daily twiſt a whiſp of ſtraw hard up, and wetting it in water, rub the legs, ſhoulders, and body with it. Many of the diſeaſes of draught-horſes, which are not owing to naſtineſs, are owing to bad water; ſuch as is too raw, too muddy, or too cold, being all improper. If there be any running ſtream in the neighbourhood, they ſhould always be led to that to water, every day in ſummer, but in winter, well-water is warmiſh, and is better for them. If there be a neceſſity of giving them well-water in ſummer, it muſt be drawn up ſome hours before the time, and expoſed to the ſun-beams in tubs or troughs; marſh-water, or that of lowland ditches, is worſt of all. When the labouring horſe has drank his water, he ſhould have his oats given him, and theſe ſhould be carefully ſifted, and the manger duſted firſt. It is a common practice as ſoon as a horſe is come in from his work, to rub down his legs with a hard whiſp of hay, but the beſt judges of horſes abſolutely condemn this, and obſerve, that this rubbing of the legs after hard labour, brings down humours into them, and makes them ſtiff.

The rubbing itſelf is wholeſome, but the doing it when the creature is hot is the miſchief; while a horſe is in a ſweat it is a great relief and refreſhment to him to have his body rubbed down, but when he is cold is the proper time to rub his legs. The racks are to be well ſupplied with hay, and the horſes ſhould be left to reſt and eat, about two hours, and then led to water; after this their oats ſhould be given them, and they ſhould then go to work again.

In the evening, when the labour of the day is over, the firſt thing to be done, is to examine the feet, and ſee if any thing is amiſs about the ſhoes, and what earth or gravel is lodged in the foot, between the ſhoe and the ſole, is to be picked out, and ſome freſh cow-dung put in its place, which will cool and refreſh the part.

A very material thing for the preſervation of all ſorts of cattle, but of none ſo much as draught-horſes, is freſh and clean litter.

Horse, *Hunting*. See Hunter.

Horse, *Race*. See Racing.

Horse, *Stone*. See Stallion.

Horse, *War*. The proper rules for chuſing a horſe for ſervice in war are theſe; he ſhould be tall in ſtature; with a comely head, and outſwelling forehead. His eye ſhould be bright and ſparkling, and the white part of it covered by the eye-brow. The ears ſhould be ſmall, thin, ſhort, and pricking; or, if long, they ſhould be moveable with eaſe, and well carried. The neck ſhould be deep, and the breaſt large and ſwelling. The ribs bending, the chine broad and ſtraight, and the buttocks round and full. The tail ſhould be high and broad, neither too thick nor too thin; the thigh ſwelling; the leg broad and flat, and the paſtern ſhort. When ſuch a horſe is choſen, he muſt be kept high during the time of his teaching, that he may be full of vigour. His food muſt be ſweet hay, and good clean oats, or two parts of oats, and one part of beans or peas, well dried and hardened. The quantity ſhould be half a peck in the morning, and the ſame quantity at noon, and in the evening. Upon his reſting days he is to be dreſſed between five and ſix in the morning, and watered at ſeven or eight. In the evening he is to be dreſſed at four, and watered about five, and he muſt always have provender given him after watering; he muſt be littered about eight, and then muſt have food given him for all night.

The night before he is ridden all his hay is to be taken away about nine o'clock, and he muſt have a handful or two of oats about four in the morning; when he has eaten theſe, he is to be turned upon the ſnaffle, and rubbed very well with dry cloths; then ſaddled, and made fit for his exerciſe. When he has performed this, he is to be brought ſweating into the ſtable, and rubbed down with dry whiſps. When this has been done, the ſaddle is to be taken off, and he is to be rubbed down with dry cloths; the houſing-cloth is then to be laid on, and the ſaddle being again laid on, he is to be walked gently about till thoroughly cool. After this, he muſt ſtand without meat two or three hours, then he muſt be fed; and in the afternoon he is to be rubbed and dreſſed as before, and watered in the uſual manner.

Horse, *River*, in *Zoology*. See Hippopotamus.

Horse, *Sea*. See Hippocampus.

Horse is alſo uſed, in the *Military Language*, to expreſs the cavalry (ſee Cavalry); or the body of ſoldiers who ſerve on horſeback.

The horſe includes horſe guards, horſe grenadiers, and troopers. Dragoons are alſo frequently comprehended under this name, though they fight on foot as well as on horſeback. See Dragoons, Grenadiers, and Guards.

Horſe guards, by the Spaniards called *guardas a cavallo*; by the French, *gardes de corps*; by the Engliſh uſually *life-guards*; are the guards of the king's perſon and body.

The duty is, by parties from the guard, to attend the king's perſon when he goes out near home; an honour which has been lately appropriated to the *light-horſe*. On ſtate-days he is attended by detachments out of the horſe and grenadier guards.

One of three captains of the horſe-guards attends on the king when he walks on foot, immediately next his perſon; carrying in his hand an ebony ſtaff, or truncheon, with a gold head.

Horse-*Artillery*, a comparatively novel inſtitution in the *Military Art*, by which the force of cavalry and ordnance is united with the moſt rapid movements, executed with machines that were once ſo cumbrous. This new artillery is organized on ſuch principles as to perform movements the moſt rapid and the moſt unexpected. Thus it can proceed with celerity either to a point threatened by the enemy, or a poſt which, by a deciſive attack, it is intended to carry; follow the horſe every where, if needful, and bruſh the enemy by the combined effect of all the means of attack and defence which the theory of the military art, judgment, and experience can ſuggeſt.

In the campaigns of 1757-8-9 againſt the Ruſſians, it often happened that the Pruſſian light-horſe, at the very moment when they imagined themſelves to be ſure of ſucceſs, met with a battery of cannon, though no infantry were preſent, which led them to ſuppoſe that the Ruſſians had horſe-artillery, able to follow all the movements of the horſe. The fact being aſcertained, Frederic the Great introduced this artillery into his army in the ſpring of 1759, at his head-quarters at Reichennendorff, near Landſhut, where every morning he exerciſed this new corps himſelf, and directed its manœuvres. The king alſo made a ſucceſsful trial with his horſe-artillery before he left that camp, by covering it with a reconnoitring party beyond Liebau, on the retreat of his dragoons, in a manner ſo effectual, that all the attacks of the enemy's horſe, though far ſuperior in number, completely failed. The Auſtrians were the firſt who inſtituted this new military eſtabliſhment: in 1783 they manœuvred with horſe-artillery near Prague; and ſince that time, it has been introduced into the Britiſh, Swediſh, Saxon, and Hanoverian armies; yet with conſiderable difference as to the calibre of the ordnance, and the way of mounting the artillery-men. The Pruſſian horſe artillery conſiſts of ſix-pounders, the Auſtrian of light three-pounders, the Hanoverian of heavy three-pounders, the Daniſh of one-pounders, &c. The Pruſſian artillery-men are on horſe-back; the Auſtrians ride on the carriages of the guns; the Hanoverian party ride partly on horſe-back, partly on the gun-carriages, wurſts, &c. But no European power has hitherto derived ſuch important advantages from this new artillery as France, where it was introduced in the year 1792, and ſoon carried to great perfection. In order to give it the advantage of a ſuperior fire, the French flying, or horſe artillery conſiſts of eight-pounders, and ſix-inch howitzers; the ammunition is carried in light caiſſons, and moſt of the artillery-men are mounted, whilſt others ride on the wurſts. By this arrangement, in addition to the known abilities of the French cannoneers, the Republican horſe-artillery ſoon acquired a decided ſuperiority over that of the Auſtrians, and maintained it during the whole war. The formation of the horſe-artillery in France took place in the year 1791, under royal orders carried into effect by M. Duportail, miniſter at war, who directed that two companies of artillery-men ſhould be eſtabliſhed by the commandant of the military diviſion at Mentz: and a ſhort time before the declaration of war in 1792, M. de Narbonne, who had ſucceeded M. Duportail, aſſembled a military committee, conſiſting of the moſt experienced officers in the artillery and engineer departments, aided by the advice of the generals commanding the three grand diviſions of the whole French army, and iſſued a number of reſolutions for giving effect to this inſtitution. It was determined, that with reſpect to the mode of being armed, equipped, accoutred, &c. the mounted artillery was to differ from the field ordnance only by the rapidity of its movement; on this account the horſes were to be ſtrong and active; and moreover it was conſidered moſt advantageous to the ſervice to mount the cannoneers on horſe-back, in preference to artillery carts; and that without abſolutely excluding pieces of larger calibre, eight or twelve pounders and howitzers ſeemed beſt adapted to the nature of this ſervice. It was alſo reſolved that it would be ſuperfluous to drill the mounted artillery-man, ſo as to make him maſter of all the cavalry manœuvres; it being thought fully ſufficient for him to ſit his horſe well, to be able to mount and diſmount with eaſe and celerity, to guide his horſe according to the poſition of his piece, and to leave it entirely to his own judgment to act with the cavalry, ſhould he find himſelf involved in their manœuvres.

The Britiſh government, which was among the firſt in adopting this military inſtitution, eſtabliſhed a brigade of ſix troops of horſe-artillery, conſiſting of a colonel, two lieutenant-colonels, one major, ſix captains, ſix captain-lieutenants, twelve firſt lieutenants, ſix ſecond lieutenants, one adjutant, one quarter-maſter, one ſurgeon, four aſſiſtant-ſurgeons, one riding-maſter, ſix ſerjeant-majors, ſeven quarter-maſter-ſerjeants, eighteen ſerjeants, eighteen corporals, forty-two bombardiers, five hundred and eighty-two gunners, four hundred and twenty-ſix gunner-drivers, twenty-four farriers, ſix ſmiths, twelve collar-makers, ſix wheelers, ſix trumpeters, ſix hundred and eighteen riding-horſes, and eight hundred and fifty-eight draft-horſes.

HORSE, *Hungarian.* See CAVALRY and HUSSARS.

HORSE, *Light.* See CAVALRY.

HORSE, *Maſter of the.* See MASTER *of the Horſe.*

HORSE is alſo a term uſed in various arts and manufactories, for ſomething that helps to ſuſtain their work from the ground, for the more commodious working at it.

The horſe uſed by tanners and ſkinners, alſo called the *leg*, is a piece of wood cut hollow and roundiſh, four or five feet long, and placed aſlope; upon which they pare their ſkins to get off the dirt, hair, fleſh, &c.

HORSE is alſo uſed, in *Carpentry*, for a piece of wood jointed acroſs two other perpendicular ones, to ſuſtain the boards, planks, &c. which make bridges over ſmall rivers; and on divers other occaſions.

HORSE, in *Mining*, is one of the very numerous deſignations which have been given by practical men to the fiſſures and diſlocations of the ſtrata met with in coal-pits and other mines. See FAULT.

HORSE, in *Rural Economy*, the name of a ſort of wooden frame ſtrongly put together, for the purpoſe of ſawing and cutting wood upon.

HORSE, in *Sea Language*, is the name of a rope reaching from the middle of a yard to its extremity, or what is called the yard-arm, and depending about two or three feet under the yard, for the ſailors to tread upon, whilſt they are looſing, reefing, or furling the ſails, rigging out the ſtudding-ſail-booms, &c. In order, therefore, to keep the horſe more parallel to the yard, it is uſually ſuſpended to it, at proper diſtances by certain ropes called *ſtirrups*, which hang about two feet under the yard, having an eye in their lower ends through which the horſe paſſes.

HORSE is alſo a thick rope extended in a perpendicular direction near the fore or after-ſide of a maſt, for the purpoſe of hoiſting or extending ſome ſail upon it. When it is fixed before a maſt, it is calculated for the uſe of a ſail called the ſquare-ſail, whoſe yard being attached to the horſe, by means of a traveller, or bull's eye, which ſlides up and down occaſionally, is retained in a ſteady poſition; either when the ſail is ſet, or whilſt it is hoiſting or lowering. When the horſe is placed abaft or behind a maſt, it is intended for the try-ſail of a ſnow, and is accordingly very rarely fixed in this poſition, except in thoſe ſloops of war which occaſionally aſſume the form of ſnows, in order to deceive the enemy. Falconer's Mar. Dict.

HORSE is alſo a cant name introduced into the management of lotteries, for the chance or benefit of a ticket, or number, for one or more days, upon condition, if it be drawn a prize within the time covenanted for, of returning to the ſeller an undrawn ticket.

To determine the value of a horſe.—Multiply the amount of the prizes in the lottery by the time the horſe is hired for; and from the product ſubtract the amount of the number of prizes by the value of an undrawn ticket into the time of the horſe: the remainder being divided by the number of tickets into the whole time of drawing, the quotient is the value of the horſe. See LOTTERY

HORSE-*back*, in *Mining*, is applied to the humps or ſwellings on the top of ſome particular ſtrata, which are ſubject to ſuch anomalies, and which are alſo called bumps, ridges &c.

HORSE *Bean*, in *Gardening*. See BEAN.

HORSE *Beech*. See CARPINUS.

HORSE *Bones*, *Foſſil*, in *Natural Hiſtory*. In digging in the peat and ſilt of fens and marſhes, it is not very uncommon to meet with the ſkulls and bones of horſes, as in Hatfield chace, in Yorkſhire, and the Iſle of Dogs, in Middleſex. (Parkinſon's Organic Remains, vol. i. p. 67 and 95.) The great comparative anatomiſt, M. Cuvier, in a Memoir on this ſubject, in the Ann. de Muſéum, tome xiv. page 33, or Philoſophical Magazine, vol. xxxv. p. 216, after mentioning a great number of inſtances and ſpecimens preſerved, of the bones of horſes which had been dug up, both in modern alluvial flats, and alſo in quarries accompanied by the bones of unknown and extinct animals, gives the oſteological characters of the horſe, and confeſſes that though they may ſerve to diſtinguiſh the modern or peat foſſils, they are inſufficient for determining, in moſt inſtances which occur, to what ſpecies, or whether to any of the known ſpecies of the genus equus, the foſſil remains in the ſtrata are to be referred. (See Phil. Mag. vol. xxxv. p. 388.) The pretended bones of a horſe found in the alum-works of Saltwick, and mentioned by Mr. Charlton in his "Hiſtory of Whitby," p. 355, were probably thoſe of an extinct animal.

HORSE *bramble*, in *Agriculture*, a common name often applied to the briar or wild roſe of the field.

HORSE-*bread*. Bread of a proper kind is often given to horſes to hearten and ſtrengthen them when they have gone through great fatigues, or are to prepare for ſuch. Common houſhold-bread will anſwer the purpoſe, but the more common way is to prepare a kind of bread on purpoſe. There are two different receipts for making this ſort of bread, each of which has its admirers. The firſt method is this: take wheat-meal, oat-meal, and beans ground fine, of each half a peck; aniſeed, two ounces; gentian and fenugreek-ſeed, of each an ounce; liquorice, two ounces: let all theſe be made into a fine powder, and ſifted together, that they may be perfectly mixed; then add the whites of twenty new-laid eggs, and as much fine ale as will knead the whole into dough. This is to be made into loaves, and well baked, but not burnt; and the horſe is to have a good quantity of it every morning for five or ſix days, without any other provender.

The other method is much nicer, but perhaps does not any way better anſwer the intended purpoſe of heartening up the creature. It is this: take wheat-meal, rye-meal, bean-meal, and oat-meal, of each half a peck; aniſeed and liquorice, of each an ounce; white ſugar-candy, four ounces: beat all theſe into powder, and ſift them together; then add the whites and yolks of twenty new-laid eggs, and as much white-wine as will make the whole into a dough. Let this be made into great loaves, and well baked; it muſt not be given the horſe too new, but when it has ſtood about three days it may begin to be uſed; the outſide is always to be chipped off when any of it is given. Theſe are the two ſorts of bread uſually given to prepare horſes for long journies. But there are three other receipts for making bread for race-horſes, which are as much eſteemed, and are given by our expert jockies for the ſecond, third, and fourth fortnight's feed. The firſt kind is made in this manner: take three pecks of clean beans, and one peck of fine wheat; let theſe be ground together, and kneaded into dough, with a large quantity of freſh barm or yeaſt, but with as little water as may be: when this has heaved and worked up a little, let it be kneaded again, and then made into large loaves and carefully baked; when three days old it may be given to the horſe, but not ſooner.

The ſecond ſort is to be made as the other, only with equal quantities of beans and wheat, and the cruſt of this is to be cut quite away before it is eat. This is to be given to the horſe at his uſual meals, either alone, or mixed with oats and ſplit beans.

The third ſort of bread is ſtronger than either of the others, and is to be made thus: take three pecks of wheat, and one of beans; let them be ground together, and made into very fine flour; knead this up into dough with a good quantity of yeaſt diſſolved in as much ſtrong ale as is neceſſary; add the whites of twenty eggs, and make the whole into large loaves. Theſe muſt be thoroughly baked, and when they have ſtood three days, the cruſt muſt be cut off, and the crumb only given, either alone, or mixed with oats or ſplit beans. This is to be the food for the laſt fortnight.

HORSE *Cheſnut*, in *Gardening*. See ÆSCULUS and CHESNUT *Tree*.

HORSE *Cheſnut*, *Petrified*, in *Natural Hiſtory*. In that fruitful ſoil for vegetable reſemblances, the pyritic cliffs of the upper part of the London clay in Sheppy iſland, in the Thames, Mr. Jacob mentions a nut reſembling the horſe-cheſnut of America: the reality of its being a nut of any kind is much to be queſtioned, from the circumſtances attending it.

HORSE *Courſe*. See HIPPODROME.

HORSE-*dung*, in *Agriculture* and *Gardening*, the name of that ſort which is produced by the horſe in the ſtable or other place. As it exiſts in theſe ſituations it is generally much blended and intermixed with different ſorts of ſtrawy materials, which, from their diſpoſing the dung to take on heat more readily, render it of great utility in different views of field and garden culture. It is this property of running ſpeedily into the ſtate of fermentation that makes it ſo uſeful in the forming of hot-beds in the gardens, in order to raiſe ſeveral different early productions of the culinary kind, as well as many tender plants of other deſcriptions.

That which is the moſt proper for this uſe, in general, is ſuch as has continued together in the common dung-hill until a conſiderable heap has been formed; and where it has already commenced the incipient ſtage of fermentation, and is become either wholly or partially moiſt warm, and capable of ſending forth ſome degree of ſteam, it is ſtill more ſuitable for the purpoſe. When, on turning it up with the fork, it puts on a ſort of blackiſh appearance, and is dry without being rotten or exhauſted, and abounds with a freſh ſubſtantial material that has a lively, moiſt, ſteamy warmth, it is in the moſt proper condition for the conſtruction of hot-beds. But dung that is of a freſher quality, yet moiſt and full of ſteamy litter, is highly deſirable, as it is readily capable of being brought into the proper ſtate. With this raw ſort, the beſt plan is to have it thrown up and well mixed together, before it be employed in conſtituting the hot-beds.

Where it is intended to be uſed merely as manure, whether in the field, or the garden, it is the moſt proper for almoſt every kind of crop, when it has paſſed into a conſiderably more reduced ſtate, and is become more ſoft and more imbued with moiſture. On this account, it is found extremely uſeful in raiſing various ſorts of culinary vegetables in the open ground, after it has been employed

ployed in the forcing-frames, or other hot-bed culture. It is eſſential, in all large gardens, to have full ſupplies of this ſort of materials always at hand during the ſeaſons at which it is likely to be wanted. See Dung, Hot-*bed*, and Manure.

Horse-*engine*, in *Mining*, is applied to the gins which are uſed at ſome of the lead-mines, ſimilar to thoſe of the coal-mines for drawing their ore and vein-ſtuff, and their water alſo, in barrels, in ſome few inſtances. See Winding *Engine*.

Horse-*fly*, in *Entomology*. See Hippobosca *Equina*.

Horse-*gin* is a vertical axle and large cylinder or drum, turned by horſes, for drawing coals or ores from pits or mines, &c. See Winding *Engine*.

Horse-*gold*, in *Mining*, is in ſome diſtricts uſed to denote the hematites, or yellow pyrites.

Horse-*hairs, animated*, a term uſed to expreſs a ſort of long and ſlender water-worm, of a blackiſh colour, and ſo much reſembling a horſe-hair, that it is generally, by the vulgar, ſuppoſed to be the hair fallen from a horſe's mane into the water as he drinks, and there animated by ſome ſtrange power. Dr. Liſter has at large confuted this abſurd opinion, in the Philoſophical Tranſactions. See Amphisbæna *aquatica*.

Horse-*hair-worms*. See Amphisbæna.

Horse-*heal*, in *Botany*. See Star *wort*.

Horse-*hoe*, in *Rural Economy*, a name given to that ſort of hoe, which is drawn by the labour of the horſe. See Hoe.

Horse-*hoeing*, a term ſignifying the operation of ſtirring, breaking down, and cultivating the ſoil, between the rows of grain, and other kinds of crops, by the uſe of the horſe-hoe. See Hoeing.

Horse-*iſland*, in *Geography*, a ſmall iſland of Scotland, in the Frith of Clyde, near the coaſt of Ayrſhire. N lat. 55° 41′. W. long. 4° 52′.

Horse-*iſlands*, a cluſter of ſmall iſlands near the E. coaſt of Newfoundland. N. lat. 50° 25′. W. long. 55° 30′.

Horse-*keeper*, in *Agriculture*, a name applied to the perſon, or ſervant, who has the charge of keeping, and looking after, team or other horſes. It is neceſſary he ſhould be well qualified for his buſineſs, as without a ſteady regular horſe-keeper, the farmer may ſuſtain great injury and loſs in various ways; while, with a proper manager, his ſavings may be conſiderable, without the condition of the animals being in the leaſt impaired. It forms part of the conſtant attention of the horſe-keeper to ſee that the horſes of which he has the charge, are properly cleaned, watered, and fed as ſoon as they return from their labour, and that their feet be well cleared beneath the ſhoe, by the picker, from all ſorts of little ſtones and earthy matters. The ſhoes ſhould likewiſe be carefully examined, to ſee that they are perfectly faſt and in order. Good ſhoes uſually laſt ſomething more than a month. It is alſo proper for this perſon to take care that they have plenty of litter, and that it be properly applied, as well as that their feeds of oats and cut meat be given them in a regular manner, and in ſufficient quantities. The uſual periods of feeding with grain are morning, noon, and night, and the proportion for each horſe, each time, from a quarter to half a peck, with frequently about two handfuls of beans, and ſometimes cut chaff. The oats ſhould be well ſifted, to clear them from duſt, ſand, &c. It is neceſſary, in addition, to let them have water twice, or oftener in the courſe of the day. See Team.

Another part of the duty of the horſe keeper is, that of taking care of, and keeping the harneſs, &c. in proper order. This is done by preſerving them conſtantly clean and well oiled. When not in uſe, they ſhould always be hung up carefully in their proper room or place after having the dirt, &c. well cleaned from them.

Horse-*knobs*, a common name frequently applied to knob or knap weed.

Horse-*leech*, in *Zoology*. See Hirudo *ſanguiſuga*.

Horse-*line*, in *Nautical Affairs*, ſignifies the long line or rope uſed for towing or dragging of barges or boats on navigable rivers and canals; it is uſually faſtened to the top of the maſt on wide rivers, and to the top of a ſhort maſt in canal-boats, called the chock, which can paſs under the bridges, and from which the line can readily be unhooked or caſt off by the boat man, to paſs bridges which have no towing path under them. See Canal.

Horse-*load*, is a denomination of a meaſure or quantity in ſeveral different counties, chiefly of corn or lime. At Lancaſter the load of barley is 6 buſhels, of oats $7\frac{1}{2}$ buſhels, and of wheat, beans, or peas $4\frac{1}{2}$ buſhels; at Mancheſter the load of beans is 5 buſhels, and of oats 9 buſhels; at Ulverſtone a load of oats is 6 buſhels, and of wheat $4\frac{1}{2}$. In moſt parts of Derbyſhire a load of corn is 8 buſhels; in many places the load or weight is five buſhels. A load of lime in Derbyſhire is 3 heaped buſhels.

Horse-*mackarel*, in *Ichthyology*. See Scomber *trachurus*, or Scad.

Horse-*meaſure*, that ſort of meaſure which is employed to aſcertain the heights of horſes, which is done by a ſort of box rod, ſo contrived as to ſlide out of a cane, having a ſquare at the end, which is divided into hands and inches, by which a horſe, or any other animal, may be meaſured.

Horse-*mint*. See Mint.

Horse-*muſcle*. See Muscle.

Horse-*muſcle Shells*, in *Natural Hiſtory*. The late Mr. Whitehurſt, in deſcribing the ſtrata of Derbyſhire, Inquiry concerning the Earth, p. 208. 2d edit., mentions the ſhells of freſh water horſe muſcles, as found in abundance in a thin ſtratum of iron-ſtone. Mr. William Martin, in his Petrificata Derbienſia, plate 27, figures and deſcribes this ſhell, and denominates it the mya ovata of Dr. Maton; it has been ſaid, however, by competent judges, that the above authors were influenced too much by their theory of the coal-meaſures being formed in *freſh water*, and that the reſemblance is not exact between the ſhells of the muſcle-band iron-ſtone, or iron-ſtone marble, (the courſe of which, through Derbyſhire and into Yorkſhire, is deſcribed in Mr. Farey's Report, vol. i.) and any recent or known ſhells whatever.

Horse-*path*, in *Engineery*, is ſometimes applied to the towing-path which is conſtructed by the ſide of all canals, and by narrow navigable rivers, for the uſe of the towing or track horſes. See Hauling *way*.

Horse *power*, in *Mechanics*. Among practical mechanics it has been uſual, of late years, to eſtimate the power of large machines and engines by the number of horſes to whoſe work they are equivalent, applied to a horſe-wheel, during a given time. This term was introduced when ſteam-engines firſt began to ſuperſede horſe-mills, in ſuch numerous branches of Engliſh manufactures, and when it was natural for the manufacturer to enquire how many horſes a ſteam engine would diſpenſe with in his works, and at what firſt coſt of erection, and per annum in coals, attendance, and repairs afterwards. Meſſrs. Bolton and Watt's preſent eſtimate of this power is, as we are informed, 32,000lb. raiſed one foot per minute; the late Mr. Francis Thompſon of Aſhover, Derbyſhire, who erected a good many engines, uſed to eſtimate it at 33,000lb. Deſagulier's experiments, when thus reduced, give 22,000lb.; and another experiment 27,500lb. ; thoſe of Mr. Samuel Moor, the late ſecretary to the Society of Arts, give 21,120lb. ; Mr. Olinthus Gregory, in his Mechanics, ſtates 18,480lb. ; Mr. James Watt 20,000lb. ; and the experiments of Mr. Smeaton give 22,750lb. raiſed one foot high in one minute, as above : perhaps 22,000lb. may be a proper mean for the actual work of a horſe, and is equivalent to 100lb. $2\frac{1}{2}$ miles per hour. See Force.

Horse-*radiſh*, in *Gardening*. See Cochlearia.

Horse-*rake*, in *Agriculture*, a name applied to a large ſort of rake which is uſually drawn by a horſe, and frequently in uſe in the more ſouthern parts of the kingdom. It anſwers well for ſtubbles, and large horſe-rakes for hay are now likewiſe found very beneficial. See Rake.

Horse-*river*, or *Rio de Cavallos*, in *Geography*, a river of Mexico, which runs into the bay of Honduras, N. lat. 15° 48′. W. long. 86° 45′.

Horse-*run*, in *Engineery*, is a ſimple and uſeful modern contrivance, for drawing up loaded wheel-barrows of ſoil from the deep-cuttings of canals, docks, &c. by the help of a horſe which goes backwards and forwards, inſtead of round, as in a horſe-gin, which we have fully deſcribed in our article Canal.

Horse *Stealing*, the taking of horſes from the paſture grounds or other places, by perſons who have no claim or right to them whatever.

It is a practice which is very prevalent, notwithſtanding the very heavy puniſhments and ſevere penalties that are inflicted in caſes of detection. There is much difficulty in providing any full and adequate remedy for this nefarious practice ; it has, however, been ſuggeſted as the beſt mode of ſecurity to lock "upon the ſhank or paſtern of the horſe, a caſe hardened, and file proof iron ring, lined with ſome ſoft material to prevent chafing, and bearing the owner's name and place of abode," though "ſome have preferred the fixing a collar upon the neck," but "which is rather more expenſive, and perhaps leſs ſecure from the file," yet "in either caſe the price would not be any great object. It is granted, there would be no abſolute ſecurity in this plan, ſince thieves get their bread by their ingenuity ; but it would certainly place a very great and formidable difficulty in the way of the exerciſe of their calling. There are few thieves, but who, on inſpection, would prefer a horſe without this troubleſome mark upon him. Granting a man did his buſineſs at random, and blundered upon a horſe in the dark bearing the aforeſaid mark, as ſoon as the light ſhould enable him to diſcover it, he would, no doubt, run away from his new and dangerous bargain as faſt as he would from a thief-taker. Suppoſe even a man went prepared with tools proper to deſtroy the iron, he muſt have an aſſiſtant, and the operation would require ſome time, which would riſk a diſcovery. In caſes of ſtrays, the ſecurity is complete. But, in all caſes, it ſeems the preſent trouble is ſuppoſed to outweigh the eventual benefit of precaution." But this is left to the attentive calculation of ſuch as are intereſted in the matter. Where the horſes are of the more valuable kinds, no methods of precaution which have any chance of being uſeful ſhould be neglected.

Horse-*tail, Shrubby*, in *Gardening*. See Ephedra.

Horse-*tail plant, Petrified*, in *Natural Hiſtory*. In that fruitful repoſitory of extraneous foſſils, the cliffs of the upper part of the London clay ſtrata in Sheppy iſland, in the Thames river, the ſtrata of which ſeem to anſwer to thoſe juſt now expoſed by the tunnel and deep-cutting for the new road on the eaſt ſide of Highgate town, Mr. Jacobs deſcribes (Plantæ Faverſhamienſes, p. 138.) joints of the equiſetum or horſe-tail plant, as ſometimes found, of the naked ſpecies, three inches long. Dr. Grew, in his catalogue of "Rarities" of Greſham college, p. 268. mentions a horſe-tail plant or hippurites, a ſtone with the impreſſed figure of three ſtalks, elegantly riſing up from one root, preſerved in that collection.

Horse-*tree*, a common name ſignifying the ſame thing as whippin, whipple, or ſwingle tree, when applied to the draught of tools of different kinds.

Horse, *Wooden*, an inſtrument of military puniſhment, formerly much in uſe in different ſervices. The wooden horſe was formed of planks nailed together, ſo as to form a ſharp ridge or angle about eight or nine feet long, which ridge repreſented the back of a horſe. It was ſupported by four poſts or legs, about ſix or ſeven feet long, placed on a ſtand made moveable by trucks ; and in order to complete the reſemblance, a head and tail were added. When a ſoldier or ſoldiers were ſentenced by a court-martial, or ordered by the commanding officer of the corps to ride this horſe, they were placed on the back with their hands tied behind them, and frequently, as an increaſe of the puniſhment, had muſkets tied to their legs, to prevent, as it was jocularly ſaid, their horſe from kicking them off ; this puniſhment being chiefly inflicted on the infantry, who were ſuppoſed to be unuſed to ride. At length, riding the wooden horſe having been found to injure the men materially, and ſometimes to rupture them, it was left off.

Horse *Worm*, in *Natural Hiſtory*, a ſpecies of fly-worm called alſo *bott*, produced of eggs depoſited by a two-winged fly, of the ſhape and ſize of the humble-bee, in the inteſtines of horſes. See Botts.

Horses, in *Engineery*, is applied in ſome maritime diſtricts to the jetties or erections of wood or faſcinery, made to protect the ſea walls from the waves.

HORSE-BLOCK. See Anabathra.

HORSE-MAN, the name given to a particular ſpecies of pigeon, called by Moore the *columba tabellaria minor*. It very much reſembles in ſhape the carrier-pigeon, but it is ſmaller, and ſhorter necked ; the protuberant fleſh on the beak, and round the eye, is alſo leſs in quantity ; it is more barrel-headed alſo, and the eye is ſomewhat pinched. It is a matter of diſpute whether this be an original ſpecies of pigeon, or a baſtard between the carrier and tumbler pigeons.

There are of this ſpecies of all ſorts of feathers, but the blue and blue-pieds are the moſt valued. Theſe are one of the ſort of pigeons made uſe of in England for carrying letters, and flying for wagers ; for the true original carriers are now very ſcarce, and not riſked on every trifling occaſion.

HORSEMANSHIP, the art of breaking, diſciplining, and managing horſes.

Horſemanſhip, in its latitude, includes what relates to the knowledge of the make, colour, age, temper, and qualities, of horſes ; their reſpective countries and climates, with the manner of breeding, propagating, &c. the diſcovery of the uſes or ſervice they are fitted for ; whether the wars, the race, the ſaddle, or labour ; and forwarding and accommodating them for this purpoſe.

In this general ſenſe it alſo includes the knowledge of the defects and diſeaſes of horſes, and the remedies proper for the ſame, with the ſeveral operations requiſite thereto, as *docking*, *gelding*, *ſhoeing*, &c. and thus takes in the farrier's province.

But the word is in a more peculiar manner underſtood of the art of riding, or of directing a horſe to advantage ; not only in the ordinary motions, but more eſpecially in the managing, or making him work upon volts, airs, &c. See Manege.

HORSHAM, in *Geography*, a market and borough town in the rape of Bramber, and county of Suſſex, England, is traditionally ſaid to derive its name from Horſh, a Saxon chieftain, who is ſuppoſed to have had either a place of reſidence here, or to have achieved ſome victory in this part of the country. There is no record preſerved, however, of either event, and the origin of the place may be as rationally referred to ſome other perſon or circumſtance. In the county of Norfolk is another pariſh of the ſame name, which has equal claims to the ſame etymology. Of the preſent Horſham, we do not find any early records; though it is ſtated to have returned two members to parliament in the reign of king Edward I. This privilege it ſtill retains, as a preſcription borough. Its civil government is veſted in a ſteward, two bailiffs, and two conſtables; whilſt its election franchiſe is confined to 25 burgage holders; *i. e.* perſons occupying, or poſſeſſing burgage houſes, or lands within the borough. Theſe are now wholly the property of the duke of Norfolk; who, conſequently, has the unreſtrained power of nominating and appointing the members. The county gaol, for Suſſex, ſtands near the ſouth-eaſtern extremity of this town. It is a large convenient edifice, and is built conformably to the plan recommended by Howard. From ancient cuſtom, the aſſizes for the county of Suſſex are alternately held here, and at Lewes; at this place, the petty ſeſſions are alſo held. The church, a large irregular building, contains two old tombs, beſides mural tablets of modern date. In the town are four other places of worſhip, belonging to different ſects of diſſenters. Here is a free-ſchool, which was originally endowed with 30*l.* a year for a maſter, and 20*l.* for an uſher. In 1801 the town contained 573 houſes, and 3204 inhabitants. Here is a weekly market on Saturdays, which is noted for its poultry; and the laſt Tueſday of every month is appropriated for a cattle market. Here are four annual fairs. Horſham is 41 miles S. of London, and 20 miles N.W. of Brighton.

In the vicinity of the town are the following ſeats: Hills, lately belonging to lady Irving. Field Place, the ſeat of Timothy Shelley, eſq. New Lodge, the ſeat of I. Aldridge, eſq. Coolhurſt, Edward Carter, eſq. Den Park.

Horsham, a townſhip of America, in Montgomery county, Pennſylvania, containing 781 inhabitants.

Horsham *Stone* is a kind of thin broad ſlate, of a greyiſh colour; formerly much uſed, eſpecially in Suſſex, to heal or cover churches and chancels, great houſes, &c. but on account of its weight very unfit for the purpoſe.

It is called Horſham ſtone, becauſe chiefly brought from the town of Horſham in Suſſex.

HORSEHEAD, in *Mining*, is a large hopper of wood, the ſmall end of which is cloſe joined to the air-pipes, or fangs, which are uſed in the lead mines of Derbyſhire ſubject to foul air: the horſehead being turned towards the wind from time to time, a current of air is by that means directed down the fangs into the mine.

Horsehead *Cockle*, or *Hippocephaloides*, in *Natural Hiſtory*, depreſſed on one ſide and having the ſuture or joint in the middle of the depreſſed part, is found in the limeſtone ſtrata of Buckinghamſhire. Jones's Phyſ. Diſq. p. 404. Sometimes theſe are called horſehead muſcles by the quarry-men and others.

Horsehead *Flints*, in *Geology*, is a name pretty generally known in the chalk diſtricts of England, and adopted by Mr. Smith and his pupils, for the large and irregular black flints with white ſurfaces, reſembling in ſize, and ſomewhat in outward ſhape, the heads or ſkulls of horſes, which being curiouſly locked into each other, almoſt like the ſutures of a ſkull, form a ſtratum of flints of ſix to ten inches thick on the very top of the chalk ſeries, and of which theſe horſehead flints are very characteriſtic. Theſe flints are very commonly found in the alluvial clays of Woburn, in Bedfordſhire, and other places ſtill more diſtant from the chalk; and what among other circumſtances prove theſe clays, &c. to have been moved in maſs and not *rolled* along the ſurface by water, is, that the horſehead flints, though exceedingly brittle, often have large holes through them near their edges, ſo as to form handles to them, which are entire and unbroken, though a ſlight blow would detach them as the handle of an earthen pitcher or mug; by means of theſe holes they are very often ſuſpended as jack-weights, and for other ſimilar purpoſes, in the diſtricts where they are found.

HORSELEY, John, in *Biography*, a learned antiquarian, was a native of Northumberland, and was educated at the grammar ſchool of Newcaſtle-upon-Tyne; he ſtudied for ſome time at one of the northern univerſities, where he took a degree, and then ſettled at Morpeth as paſtor to a congregation of Diſſenters. He died in December 1731, at the age of 46. His great work did not appear till 1732, ſometime after his death. It is entitled "Britannia Romana," and contains a large account of all the veſtiges of the connection of the Romans with this iſland. It conſiſts (1) of an hiſtorical relation of all the Roman tranſactions in Britain; (2) of a collection of all the Roman inſcriptions which have been diſcovered in Britain; (3) of the geography of the iſland, as laid down by Ptolemy, &c. Mr. Horſeley was a conſiderable mathematician, and gave lectures in ſeveral branches of natural philoſophy, both at Newcaſtle and Morpeth. Gen. Biog.

HORSENS, in *Geography*, a ſea-port town of Denmark, ſituated on the Baltic, in Jutland, in the dioceſe of Aarhuus; having a harbour with the water too ſhallow for admitting any veſſels beſides lighters. It is a place of conſiderable trade, with manufactures of flannel and other woollen ſtuffs, and contains two churches; 19 miles S.S.W. of Aarhuus. N. lat. 55° 52′. E. long. 9° 52′.

HORSE-SHOE, in *Fortification*, is a work ſometimes of a round, ſometimes of an oval figure, incloſed with a parapet, raiſed in the ditch of a marſhy place, or in low grounds; ſometimes alſo to cover a gate; or to ſerve as a lodgment for ſoldiers, to prevent ſurprizes, or relieve an over-tedious defence.

Horse-shoe *Head*, a diſeaſe in infants, wherein the ſutures of the ſkull are too open, or too great a vacuity is left between them; ſo that the aperture ſhall not be totally cloſed up, or the cranium in that part not be ſo hard as the reſt for ſome years after.

This openneſs is found to be increaſed upon the child's catching cold. When the diſeaſe continues long, it is reputed a ſign of weakneſs and ſhort life. In this caſe, it is uſual to rub the head now and then with warm rum, or brandy, mixed with the white of an egg, and palm-oil.

Sometimes the diſorder ariſes from a collection of waters in the head, called an hydrocephalus.

Horse-shoe, in *Mining*, is uſed by Mr. Kirwan (Geol. Eſſ. p. 337.), to expreſs a depreſſion of ſtrata in a trough, ſuch, probably, as the vale of the goyte between Derbyſhire and Cheſhire preſents a ſtriking inſtance of, according to Mr. Farey's Report, vol. i. p. 172; in this caſe the edges of the ſtrata preſent the form of a lengthened horſe-ſhoe dipping inwards; but a more remarkable and larger caſe of a horſe-ſhoe, of the edges of ſtrata, dipping outwards, is there deſcribed as preſented by the edges of the firſt or millſtone grit rock, from Little Eaton, near Derby, northward to the Woodlands of Hope, and then again ſouthward near to Dilhorn in Staffordſhire.

Horse-shoe, in *Rural Economy*, the well-known iron cover or defence which is faſtened by means of nails upon the foot of the horſe. It requires much care and attention to ſhoe horſes in a ſafe and proper manner. See Shoeing *of Horſes*.

Horse-shoe *Point*, in *Geography*, the moſt ſoutherly point of land, near the E. end of the iſland of St. Chriſtopher. N. lat. 17° 19′. W. long. 63° 32′.

Horse-shoe *Vetch*, in *Botany*. See Vetch.

HORSING-Block, in *Engineery*, is a ſquare frame of ſtrong boards uſed by canal diggers, to elevate the ends of their wheeling-planks upon. See *Plate* VII. *of* Canals, *fig.* 49.

HORSLEY, Samuel, in *Biography*, eldeſt of the three ſons of the Rev. Mr. Horſley, formerly miniſter of St. Martin's in the Fields, was born about the year 1737. He was educated at Weſtminſter ſchool, whence he was removed to the univerſity of Cambridge. Here he applied himſelf chiefly to the ſtudy of the mathematics, and not content with reading modern authors, he went back to the profoundeſt of the ancients, and made himſelf maſter of their works. When he had taken his degree of M. A. he went to Oxford as private tutor to the earl of Aylesford. He received at this univerſity the degree of doctor of laws, and in 1769 he printed at the Clarendon preſs his edition of Apollonius, a work of great value, but exceedingly abſtruſe. Here he conceived the deſign of publiſhing a complete edition of the works of ſir Iſaac Newton, for which he began to collect the neceſſary materials. On leaving the univerſity, Dr. Horſley came to London, where he was elected a fellow of the Royal Society, of which he was choſen ſecretary in 1773. He continued to ſerve that office with the greateſt credit to himſelf, as well as benefit to the intereſts of ſcience, till the reſignation of the then preſident, ſir John Pringle. Soon after his ſettling in London, he accepted of the office of chaplain to biſhop Lowth, who preſented him to the rectories of St. Mary Newington and Albury, both in the county of Surry, and in the courſe of the year he married Miſs Botham. In 1776 he publiſhed propoſals for his edition of Newton, which appeared in 1779 in five volumes, royal quarto. To this edition is prefixed a dedication to the king, written by the doctor in excellent Latin, which concludes with theſe words, "Te, Pater, tantum Doctrinarum Artiumque omnium Patronum, diu nobis ſoſpitet, tueatur, cuſtodiat. Tibi vero gratum precor ſit Munus, quod reverentiæ et officii cauſâ Tibi dicat, qui in ſubditorum Tuorum fideliſſimorum numero nomen ſuum profiteri geſtit, unus idem ex humillimis." In 1778, when the controverſy was on foot between Drs. Prieſtley, Price, and others, reſpecting materialiſm and philoſophical neceſſity, Dr. Horſley preached a ſermon on Good Friday at St. Paul's cathedral, which he afterwards publiſhed. In this diſcourſe he endeavours to reconcile the doctrine of divine providence with the free agency of man, and combats the neceſſarian hypotheſis with much ability. About this period he was appointed archdeacon of St. Alban's by his patron biſhop Lowth, who, in 1782, preſented him to the valuable living of South Weald, in Eſſex. From this time he entered avowedly and zealouſly into the controverſy of the Unitarian doctrine with Dr. Prieſtley; the latter maintaining the ſimple humanity of Chriſt, in oppoſition to the creed of the eſtabliſhed church, which admits of three Gods in every reſpect equal. The controverſy was carried on with ſome bitterneſs, till at length the archdeacon ſignified his intention to proceed no farther, ſaying, that it was an endleſs taſk to contend upon an exhauſted topic with one who was never diſpoſed to ceaſe diſputing without having the laſt word. In 1789, Dr. Horſley collected the tracts which he had written on the occaſion, and printed them in one volume octavo, with additions, particularly a ſermon on the Incarnation, which had a material relation to the controverſy in queſtion. He had, in the year 1788, been raiſed to the biſhopric of St. David's by the intereſt of lord Thurlow, who ſaid, that thoſe who defended the church and its doctrines were juſtly entitled to the honours and emoluments it had to confer. In the year 1790, when the Proteſtant Diſſenters were ſtruggling for relief from the teſt and corporation acts, the biſhop publiſhed a pamphlet without his name, entitled "A Review of the Caſe of the Proteſtant Diſſenters." This piece excited much attention, its ſtyle was nervous, but it was accuſed of illiberality and unfairneſs in the argument. It was a juſtification of high church principles, and brought forth a number of anſwers from perſons in and out of the church. In the year 1794, biſhop Horſley was tranſlated to the ſee of Rocheſter, which he held with the deanery of Weſtminſter. In 1796 he gave the public a very learned diſſertation on "The Latin and Greek Proſodies," which he dedicated to lord Thurlow; and in the year 1800 appeared in quarto his Critical Diſquiſitions on the Eighteenth Chapter of Iſaiah, in a letter to lord King. Two years after this he publiſhed a new tranſlation of the prophet Hoſea, with notes critical and explanatory. He was in the ſame year tranſlated to the rich ſee of St. Aſaph; after this, the principal work that came from his lordſhip's pen was a critical eſſay "On Virgil's two Seaſons of Honey, and his Seaſon of ſowing Wheat; with a New and Compendious Method of Inveſtigating the Riſings and Settings of the fixed Stars." Dr. Horſley died at Brighton on the 4th of October, 1806. No man of the age, perhaps, poſſeſſed more of what is generally underſtood by the idea of recondite learning. As a ſenator he was conſidered in the firſt claſs; there were few important diſcuſſions in the houſe of peers, eſpecially when the topics referred to the hierarchical eſtabliſhments of the country, to the French revolution, or to the ſlave trade, of which he was a ſyſtematic and eloquent opponent, in which his lordſhip did not participate. As an orator, his voice was deep, full-toned, and commanding, his enunciation diſtinct, and his delivery highly advantageous. As an author, beſides the works already referred to, he publiſhed many ſmaller pieces, and alſo three volumes entitled "Elementary Treatiſes on the Fundamental Principles of Practical Mathematics for the Uſe of Students." As a biſhop, an overſeer of his dioceſe, his conduct was exemplary and very praiſe-worthy. In the ſee of St. David's, which was ſaid to exhibit more of ignorance and poverty than that of any other in the kingdom, he carried through a regular ſyſtem of reform. He regulated the condition of the clergy, and proceeded to a ſtricter courſe with reſpect to the candidates for holy orders, admitting none without perſonally examining them himſelf, and looking very narrowly into the titles which they produced. With all this vigilance, his lordſhip acted to them as a tender father, encouraging them to viſit him during his ſtay in the country, which was uſually for ſeveral months in the year, aſſiſting them with advice, and miniſtering to their temporal neceſſities with a liberal hand. In his progreſs through the dioceſe, he frequently preached in the pariſh churches, and beſtowed conſiderable largeſſes on the poor. "He was," ſays his biographer, "a bleſſing to his people, and they followed him with grateful hearts, and parted from him with infinite reluctance." Since the death of the biſhop, two volumes of his ſermons have been given to the world by his ſon, who propoſes, "if it pleaſe God to ſpare him a few years," to publiſh an uniform edition of all his father's works, with a biographical account of the author. The biſhop has left behind him in MS., but ready for the preſs, a Tranſlation of the Book of Pſalms, with Notes; a Treatiſe on the Pentateuch, and on the Hiſtorical Books of the Old Teſtament; a Treatiſe on the Prophets; containing Notes on Iſaiah, Jeremiah, Ezekiel, Joel, Amos, and Obadiah; which will be publiſhed, if the demand for them be ſuch as to juſtify the undertaking. Monthly Magazine, vol. xxii. Preface to Sermons, by Samuel Horſley, LL.D. F.R.S F.A.S. late lord biſhop of St. Aſaph.

HORST, in *Geography*, a town of Weſtphalia, in the biſhopric of Paderborn; 10 miles W.S.W. of Paderborn.—Alſo, a town of Germany, in the county of Marks; ſix miles N.N.W. of Hattingen.—Alſo, a town of the duchy of Holſtein; four miles E. of Krempe.

HORSTIUS, James, in *Biography*, a phyſician and botaniſt, was born at Torgau, in May 1537, and took the degree of M.D. at Francfort on the Oder in 1562. After having practiſed his profeſſion for ſeveral years, he was appointed ordinary phyſician of the archduke of Auſtria in 1580; a poſt which he occupied about four years, and then was elected to a chair in the univerſity of Helmſtadt, in which he pronounced an inaugural oration, "De remoris diſcentium medicinam, et earum cauſis." He is ſaid to have been dean of the faculty and vice-rector of that univerſity in 1595, and to have died in May 1600; but others believe that his death occurred earlier. His works are as follows: "Precationes Medicorum Piæ," Helmſtadt, 1585, 12mo. "De vite vinifera ejuſque partibus opuſculum," ibid. 1587, 8vo. Marpurg, 1630, with the following: "Herbarium Hörſtianum, ſeu, de ſelectis plantis et radicibus libri duo," Helmſt. 1587. "De natura, differentiis, et cauſis eorum qui dormientes ambulant," Lipſiæ, 1593, 8vo. "De aureo dente maxillari pueri Sileſii," Lipſ. 1595. "Epiſtolæ Philoſophicæ et Medicinales," ibid. 1596. "Diſputationes Catholicæ de rebus ſecundum et præter naturam," Wittemburg, 1609. Eloy. Dict. Hiſt.

Horstius, Gregory, an able and learned phyſician, nephew of the preceding, was born at Torgau, where his father was one of the chief magiſtrates, in the year 1578. After having received the rudiments of his education in the ſchools of Torgau and Halberſtadt, in which he far outſtripped his equals in age, he went to the univerſity of Wittemburg, and commenced the ſtudy of medicine; and afterwards travelled through the principal ſtates of Germany, and into Switzerland, being introduced not only in the ſchools of ſcience, but to men of literature in general. At Baſil he received the degree of M.D. in March 1606; and on his return, in the ſame year, to his native place, he was immediately appointed to a medical profeſſorſhip, in the univerſity of Wittemburg, by the elector of Saxony. Two years afterwards he was promoted by the Landgrave of Heſſe to a medical chair in the college at Gieſſen, and in 1609 was honoured with the title of Archiater of Heſſe. At this time his profeſſional character had riſen in the public eſtimation, and he numbered among his patients the principal nobility of the diſtrict. In 1622, he received a public invitation from the magiſtracy of Ulm to ſettle there as phyſician to that city, and as preſident of the college. He fulfilled his duties in both theſe offices with great reputation; and his integrity and humanity, not leſs than his extenſive erudition, and his ſucceſsful practice, endeared him to his fellow-citizens, and claimed the reſpect and admiration of the ſurrounding ſtates. He died in the month of Auguſt 1636, aged 58 years. During his reſidence at Gieſſen and at Ulm he employed his leiſure in active ſtudy, and he left a conſiderable number of works, of which it will be ſufficient to enumerate the titles of the principal. The whole of his works were collected and publiſhed, under the title of "Opera Medica," in 1660, 3 vols. folio, at Nuremberg, by his youngeſt ſon, Gregory. Among his ſeparate publications are "De Natura Humana Libri duo," Wittemburg, 1607. "Tractatus de Scorbuto, ſive, de magnis Hippocratis Lienibus, Pliniique Stomacace et Scelotyrbe," Gieſſen, 1609, 1615. "Centuria problematum Medicorum," 1610. "De morbis eorumque cauſis Liber," ibid. 1612, in 4to. "De tuenda ſanitate Studioſorum et Literatorum Libri duo," ibid. 1615, in 8vo. "De natura Thermarum Diſſertatio," 1618, in 4to. with ſome other tracts. He publiſhed alſo two volumes in quarto, at Ulm, 1625—28, "Obſervationum Medicarum ſingularium Libri quatuor," with a ſupplement, in 1631; and an abridgment of his uncle's "Herbarium Horſtianum," 1630; and ſome ſmaller tracts, entitled "De natura amoris;" De natura motus animalis et voluntarii;" "De cauſis ſimilitudinis et diſſimilitudinis in fœtu reſpectu parentum," &c. See Gr. Horſtii Oratio funebris à J. D. Dieterich, ſubjoined to his works. Eloy. Dict. Hiſt.

Horstius, John-Daniel, and Gregory, two ſons of the preceding, were alſo phyſicians and profeſſors of medicine; the latter of whom died at the age of 35; but John-Daniel lived to his 65th year, and was the author of ſeveral works, chiefly anatomical, and of little value at preſent. He was concerned with his brother Gregory in editing the collection of his father's works; and likewiſe publiſhed an edition of the "Queſtiones Medico-legales" of Paul Zacchias, Francfort, 1666, in folio; and an edition of the "Opera Medica" of Riverius, at the ſame place, in 1674, in folio. Eloy.

HORSTMAR, in *Geography*, a town of Germany, in the biſhopric of Munſter; 15 miles N.W. of Munſter. N. lat. 52° 9′. E. long. 7° 17′.

HORSZCZYK, a town of Poland, in the palatinate of Volhynia; 48 miles N. of Zytomiers.

HORTA, in *Mythology*, a goddeſs among the Romans, who preſided over youth and excited them to virtue by her exhortations. Her temple is never ſhut, to admoniſh youth, ſo liable to be ſeduced, *cerea in vitrum flecti*, that they ſhould be always diſpoſed with particular vigilance over themſelves to the practice of virtue.

HORTAGILERS, in the grand ſeignior's court, are upholſterers, or tapeſtry-hangers.

There is no city better or more orderly regulated than the grand ſeignior's camp; and to have a notion of the magnificence of that prince, he muſt be ſeen in that equipage; as he is much better lodged and accommodated there than at Conſtantinople, or any other city of his dominions.

He has always two tents or pavilions, and two ſets of furniture entire; that, while he is in one, they may pitch or ſpread the other.

In order to this, he has conſtantly 400 hortagilers, or upholſterers in his retinue, who go a day's journey before him to fix on a proper place. They firſt prepare the ſultan's tent, and then thoſe of the officers of the Porte; and the beglerbegs, according to their rank.

HORTATOR, in the *Roman Navigation*, an officer whoſe buſineſs it was to give the word of command to the rowers, and to direct them when to ſtop, and when to ply their oars.

The Greeks gave the name of celeuſtes to this officer.

HORTE, John, in *Biography*, a learned prelate, who was educated for a diſſenting miniſter under Mr. Thomas Rowe, and had for a fellow-pupil the celebrated Dr. Iſaac

Watts, with whom he kept up a correſpondence till the doctor's death. He was ſettled in early life as a diſſenting miniſter at Marſhfield in Glocesterſhire; while there, he conformed to the church, and in 1708 preached a viſitation ſermon at Ayleſbury. He was afterwards taken to Ireland as chaplain to the lord-lieutenant, where he was made biſhop of Leighlin and Ferns, from whence he was tranſlated to Kilmore, and in 1742 to the archbiſhopric of Tuam. He died in 1751. His works are a volume of excellent ſermons, printed at Dublin in 1738, and afterwards at London in 1757. Month. Mag.

HORTENSIUS, Quintus, a diſtinguiſhed Roman orator, born about the year 115 B.C. He began to plead before he was nineteen years of age, and with ſo much talent, that the great Cicero ſaid of him, "the genius of Hortenſius, like the ſtatue of Phidias, was at once beheld and approved." He afterwards entered the army and roſe to the poſt of military tribune: he then paſſed through the uſual courſe of civil offices to the conſulſhip, which he ſerved with Cæcilius Metellus B. C. 70. At that period he had acquired ſo much power and diſtinction by his eloquence, that when the lot of the Cretan war fell upon him, he reſigned it to his colleague, preferring the diſtinction and celebrity of the forum and ſenate-houſe. He continued to plead till his death, which happened in his ſixty-fourth year, or 51 B. C. We refer to the article Cato for a curious incident in the domeſtic life of Hortenſius. As an orator he was elegantly ſplendid in his diction, apt in his compoſition, and copious in his matter. He embraced the whole ſubject in his memory, divided it acutely, and omitted nothing which the cauſe ſupplied, either for confirmation or refutation. He was aided with uncommon powers of memory, which enabled him to repeat a whole oration in the words which he had previouſly conceived, without committing it to writing, and to go through all the arguments of an opponent in their order. Though Hortenſius died very rich, he lived in a very luxurious ſtyle: he poſſeſſed ſeveral magnificent country ſeats, furniſhed with parks, aviaries, fiſh-ponds, &c. in which he very much delighted. He was accuſtomed with his own hand to irrigate his fine plane-trees with wine, which may render credible the anecdote of his leaving to his heir 10,000 caſks of that liquor. His daughter Hortenſia inherited her father's eloquence, and when the Roman women were required to render on oath an account of their property, preparatory to a heavy tax, ſhe pleaded the cauſe of her ſex with ſuch force, that the decree was annulled. Her harangue, which was delivered on this occaſion, before the triumvirs, Antony, Octavius, and Lepidus, was extant in the time of Quintilian, who ſpeaks of it with applauſe. Univer. Hiſt.

Hortensius, Lambert, a man of letters, was born at Montfort, in the province of Utrecht, in the year 1518. He derived his name from the circumſtance of his father being a gardener. He ſtudied at the univerſity of Louvain, and was afterwards a profeſſor in the college of St. Jerome at Utrecht, and entered into prieſts' orders. In 1544 he was appointed prefect of the college of Naarden, which he held till his death, notwithſtanding other invitations. When the town was ſacked by the Spaniards in 1572, his houſe was pillaged, and he had the cruel misfortune of ſeeing his natural ſon maſſacred before his eyes. He himſelf would have ſhared the ſame fate, had he not been recognized and ſaved by one of his former pupils. He did not long ſurvive this evil, but died in the courſe of a year or two. He was a general ſcholar, and publiſhed many works, chiefly in the Latin language. He tranſlated four of the comedies of Ariſtophanes into Latin verſe, and he wrote annotations on the firſt ſix books of the Æneid, and on Lucan's Pharſalia; the latter he ſo highly prized, that it was the only thing he was ſolicitous to ſave at the pillage of his houſe. They were publiſhed after his death at Utrecht in 1578. His chief work, as an hiſtorian, was entitled "De Bello Germanico, a Carolo V. Cæſ. geſto lib. vii."

Hortensius, Martin, an aſtronomer, was born at Delft in 1605, and died in the flower of his age, in 1639. He is known by a diſſertation "De Mercurio ſub ſole viſo, a Venere inviſa;" alſo two diſcourſes "De utilitate et dignitate Matheſeos, et de Oculo ejuſque Præſtantia."

HORTICULTURE, compounded of *hortus, garden;* and *colo, I till, dreſs,* &c. the art of gardening. See Gardening.

HORTOBAGY, in *Geography*, a town of Hungary, on a river of the ſame name, which runs into the Theyſſe; 17 miles S.S.W. of Nanas.

HORTON, a townſhip of Nova Scotia, in King's county; traverſed by a river, which ſupplies the inhabitants with excellent ſalmon.

HORTULANUS, in *Ornithology*, the name of a ſpecies of the emberiza, in the Linnæan ſyſtem, though ſome writers have made this a diſtinct genus.

HORTUS, a name uſed by ſome authors for the female genital parts of animals.

Hortus *Siccus*. See Herbal and Herbarium.

HORVATZ, in *Geography*, a town of Croatia; 18 miles S.W. of Varaſdin.

HORVOS, an iſland in the gulf of Mexico, 25 miles long and three wide, ſeparated by a narrow channel from the N. coaſt of Yucatan. N. lat. 21° 10'. W. long. 70° 5'.

HORWAL, a town of Lithuania, in the palatinate of Minſk; 28 miles S. of Rohaczow.

HORZITZ, a town of Bohemia, in the circle of Czaſlau; 20 miles S.S.W. of Czaſlau.—Alſo, a town of Bohemia, in the circle of Konigingratz. N. lat. 50° 18'. E. long. 15° 20'.

HOSANCOCK Creek, a river of Pennſylvania, which runs into the Schuylkill. N. lat. 40° 8'. W. long. 75° 30'.

HOSANNA, in the *Hebrew Ceremonies*, a prayer which they rehearſed on the ſeveral days of the feaſt of tabernacles.

It was thus called, becauſe there was frequent repetition therein of the word הושענא, *ſerva nunc*, or *ſerva precor*; *i. e.* ſave us now; or, ſave us, we pray.

There are divers of theſe hoſannas. The Jews call them *hoſchannoth; i. e.* the hoſannas. Some are rehearſed on the firſt day, others on the ſecond, &c. which they call hoſanna of the firſt day, hoſanna of the ſecond day, &c.

Hosanna *Rabba*, or *Grand Hoſanna*, is a name they give to their feaſt of tabernacles, which laſts eight days; becauſe, during the courſe thereof, they are frequently calling for the aſſiſtance of God, the forgiveneſs of their ſins, and his bleſſing on the new year; and to that purpoſe they make great uſe of the *hoſchannoth*, or prayers above mentioned.

The Jews alſo apply the term hoſanna rabba, in a more peculiar manner, to the ſeventh day of the feaſt of tabernacles; becauſe they apply themſelves more immediately on that day to invoke the divine bleſſing, &c.

HOSANPORAH, in *Geography*, a town of Hindooſtan, in Bahar; 25 miles N.N.W. of Chuprah. N. lat. 26° 4'. E. long. 84° 30'.

HOSE, from the Saxon *hoſa*, a ſtocking. See Stocking.

Hose, a term frequently made uſe of to ſignify the ſheath from which the ſhoot of grain proceeds.

Hose *in Hoſe*, among *Botaniſts*, ſignifies one long huſk of a flower within another; as in the polyanthus. See Primrose.

Hose-*Huſk*, a long round huſk; as in pinks, july-flowers, &c.

HOSEA, in *Scripture Hiſtory*, a canonical book of the Old Teſtament, ſo called from the prophet of that name, its author; the firſt in order of the leſſer prophets, and perhaps, Jonah excepted, the moſt ancient of them all. He lived in the kingdom of Samaria, and delivered his prophecies under the reign of Jeroboam II. and his ſucceſſors, kings of Iſrael; and under the reigns of Uzziah, Jotham, Ahaz, and Hezekiah, kings of Judah. His principal deſign is to publiſh the groſs idolatry of the people of Judah and Iſrael, to denounce the divine vengeance againſt them, and to foretel the captivity in Aſſyria. His ſtyle, ſays biſhop Lowth, exhibits the appearance of very remote antiquity; it is pointed, energetic, and conciſe. It bears a diſtinguiſhed mark of poetical compoſition, in that priſtine brevity and condenſation, which are obſervable in the ſentences, and which later writers have in ſome meaſure neglected. This peculiarity has not eſcaped the obſervation of Jerom. "He is altogether," ſays he, ſpeaking of this prophet, "laconic and ſententious." But this very circumſtance, which was anciently ſuppoſed, without doubt, to impart uncommon force and elegance, in the preſent ruinous ſtate of Hebrew literature, is productive of ſo much obſcurity, that although the general ſubject of this writer be ſufficiently obvious, he is the moſt difficult and perplexed of all the prophets. Beſides, the duration of his miniſtry muſt include a very conſiderable ſpace of time; but we have now only a ſmall volume of his remaining, which, it ſeems, contains his principal prophecies: and theſe are extant in a continued ſeries, with no marks of diſtinction as to the times in which they were publiſhed, or the ſubjects of which they treat. We need not therefore be ſurpriſed, if, in peruſing the prophecies of Hoſea, we ſometimes find ourſelves in a ſimilar predicament with thoſe who conſulted the ſcattered leaves of the Sibyl. Lowth's Lect. on the ſacred poetry of the Hebrews, by Gregory, vol. ii. See Hebrew *Poetry*.

HOSEEPOUR, in *Geography*, a town of Hindooſtan, in Bahar; 50 miles N.W. of Chuprah. N. lat. 26° 25′. E. long. 84° 18′.

HOSHEARPORUM, a town of Hindooſtan, in Lahore; 40 miles E. of Jallindar.

HOSIUS, Stanislaus, *Cardinal*, in *Biography*, one of the moſt illuſtrious Catholic prelates in the 16th century, was a native of Cracow, and born in the year 1504. He received his early education at the place of his birth, and was ſent to purſue his academical ſtudies at the univerſity of Padua. After continuing there ſome time, he removed to Bologna, where he was admitted to the degree of doctor of laws. The ſuperiority of his talents brought him to the notice of the king, who made him his ſecretary, and afterwards employed him in the chancellery, in the management of the moſt important ſtate affairs. Shortly after this he was nominated to the biſhopric of Culm, from whence he was tranſlated to the ſee of Walmia. He was now employed on miſſions of importance by the pope Pius IV. to the emperor Ferdinand, and to the king of Bohemia, to negociate for the continuation of the council of Trent. Having proved ſucceſsful in his negociations, Pius ſent him, in 1561, a cardinal's hat, which he declined, till the pope obliged him to accept it. He was a learned and zealous champion for the Roman church. His works make two volumes folio: they have gone through many impreſſions. He wrote elegantly, and was an able opponent of the Proteſtants. He died in 1579. The beſt edition of his works is that of 1584. Univer. Hiſt.

HOSLUNDIA, in *Botany*, ſo named by Mr. Peter Thonning, in commemoration of Olaus Hoſlund Smith. Theſe two young Danes undertook an expedition to the coaſt of Guinea, in ſearch of natural productions, where unfortunately the latter, a moſt ardent and intelligent botaniſt, from whoſe reſearches much was expected, met with a premature death.—Vahl. Enum. v. 1. 212.—Claſs and order, *Diandria Monogynia*. Nat. Ord. *Verticillatæ*, Linn. *Labiatæ*, Juſſ.

Gen. Ch. *Cal.* Perianth of one leaf, inferior, tubular, five-toothed, ſtriated. *Cor.* ringent, almoſt twice as long as the calyx; throat compreſſed: upper lip of the limb erect, ovate, gibbous; lower one gaping, trifid, recurved. *Stam.* Filaments four, growing to the tube; the two barren ones very ſhort; anthers kidney-ſhaped. *Piſt.* Germen ſuperior, four-cleft; ſtyle thread-ſhaped, the length of the perfect ſtamens; ſtigma bifid. *Peric.* Berry ſpurious, formed out of the calyx; roundiſh and ſlightly ten-cornered, umbilicated by the teeth of the calyx, hollow within. *Seeds* four, ovate, in the bottom of the calyx.

Eſſ. Ch. Calyx tubular, five-toothed. Corolla ringent, its upper lip concave. Stamens four, two of which are barren. Seeds four, within the pulpy calyx.

1. *H. oppoſita.* Vahl. Enum. n. 1.—"Leaves oppoſite, oblong-ovate."—Native of buſhy places in Guinea. This *ſhrub* is about ſix feet high, having numerous oppoſite *branches* croſſing each other, with a hairy line between the inſertion of the *leaves*; theſe are two inches or more in length, ſerrated towards the end, entire at the baſe, aromatic. *Flowers* white. *Berry* the ſize of a currant, orange-coloured, downy.

2. *H. verticillata.* Vahl. Enum. n. 2.—"Leaves lanceolate, ternate."—Native of Senegal, and firſt diſcovered by M. Dupuis, formerly ſuperintendant of the garden of the Thuilleries.—*Stem* ſhrubby, branched. *Branches* ſquare, ſtriated, ſlightly downy, hoary at the top. *Leaves* an inch and half long, ſerrated, but entire both at the top and baſe, interſperſed with reſinous, bright ſpots, which are diſcernible by the help of a lens. The parts of fructification in this ſpecies are very ſimilar to thoſe of the laſt. *Panicle* terminal. *Bracteas* minute, awl-ſhaped. *Flowers* ſmall, clothed outwardly with whitiſh hairs.

HOSPINIAN, Rodolphus, in *Biography*, a learned Swiſs divine, was born at Altdorf, near Zurich, in 1547. From a very early period he was diſtinguiſhed for excellent talents, which his friends encouraged and cultivated, by giving him a good education. In 1568 he was admitted into the miniſtry, the duties of which he performed with much diligence and aſſiduity at a country church a few miles from Zurich. After this he had the ſuperintendance firſt of the abbey-ſchool at Zurich, and then of the Caroline ſchool. Amidſt the various occupations of his life he was enabled to compoſe ſome valuable works, of which the principal are, "De Templis, *i. e.* de origine, uſu, et abuſu Templorum:" "De monachis:" "De feſtis Judæorum et Ethnicorum:" "Feſta Chriſtianorum:" "Hiſtoria Sacramentaria:" "Hiſtoria Jeſuitica." He was nearly a year deprived of his ſight, notwithſtanding which he continued to preach as uſual, and in 1613 he ſubmitted to the operation of couching, which ſucceeded to his wiſhes. In 1623 his faculties became ſo much impaired, that he was reduced to a ſecond childhood, in which he continued till his death in 1626. His works, which are enumerated by Bayle, were collected and printed in ſeven volumes folio.

HOSPIDALETTO, in *Geography*, a town of the biſhopric of Trent; 35 miles N.W. of Trent.

HOSPITA, in *Mythology*, a ſurname of Venus, under which appellation ſhe was worſhipped, and had a temple at Memphis, in Egypt.

HOSPITAL, Michael de l', in *Biography*, chancellor of France, was born at Auvergne in 1505. He was educated for the law in the moſt celebrated univerſities of France and Italy, and at the ſame time he greatly diſtinguiſhed himſelf by his proficiency in polite literature. He was in early life made one of the auditors of the rota at Rome, the duties of which he quitted, to follow the law court at Paris. Here he paſſed through various high offices, continually riſing in eſteem for his ability and integrity. In 1560, he was elevated to the dignity of chancellor of France. At this period the kingdom was divided between the factions of contending intereſts. L'Hoſpital was a true patriot, and preferred the honour of the crown and country, to that of any intereſt ſupported by the great. To carry his point he was ſometimes obliged to give way, and even to conſent to a ſevere edict againſt the Proteſtants; this he did with much regret, and he never ceaſed to advocate the cauſe of toleration. In 1562, he was the champion of the decree which allowed freedom of worſhip to the Proteſtants. He was more than once accuſed of being himſelf a Proteſtant, and was excluded from thoſe councils in which the bloody maſſacre was planned. The papal legate would gladly have removed him from office, which he was unable to do, till at length the whole influence of the court was bent on exterminating by violence the reformed religion. He now reſigned his ſeals, and retired into the country to ſpend the remainder of his days, with his books and his friends, and in this retreat he declared that he enjoyed more happineſs than he had ever done in public life. The felicity of privacy was cruelly interrupted by the deteſtable maſſacre of St. Bartholomew in 1572. It was imagined that he might, on account of his great integrity, be included among the number of victims, and when a troop of horſe approached his houſe, he was aſked if he would defend himſelf with fire-arms; "By no means," ſaid he, "and if the wicket is not wide enough to admit the aſſaſſins, ſet open the great gates." The men, who were ſent on the bloody errand, were overtaken by a meſſage from the king, announcing that l'Hoſpital was not among the proſcribed, and was told that the authors of the deed had pardoned him his conſtant oppoſition to their plans; "I did not indeed know," ſaid the excellent man, "that I had merited either death or pardon." He ſurvived this ſhock but a ſhort time, dying in the year 1573, in the ſixty-eighth year of his age. He was author of "Latin poems," which have gone through many editions, and which are grave, but eaſy and energetic; alſo of "Harangues before the States of Orleans;" "Memoirs containing treaties of Peace, &c.;" "A Diſcourſe in favour of Peace," and other tracts. His eulogy, in better times, was made a prize ſubject by the French academy in 1777, and his ſtatue was erected in marble by Lewis XVI., but his noble and manly conduct has erected to his memory a ſtatue more durable than marble. "No one," ſays his biographer, "was more determined in reſiſtance to injuſtice, and if ever he acceded to meaſures which he diſapproved, it was only to prevent worſe." Bayle. Moreri.

Hospital, William-Francis-Anthony, marquis de St. Merne, a celebrated mathematician, of the ſame family as the preceding, was born in 1661. His genius for mathematical purſuits diſcovered itſelf at a very early period; for, being preſent one day at the duke de Rohan's, where ſome able geometricians were ſpeaking of a problem of M. Paſcal's, which appeared very difficult, he ventured to ſay that he believed he could ſolve it. They ſmiled at the aſſertion, and probably regarded the ſuppoſed forwardneſs of a youth of fifteen with contempt; however, in a few days, he ſent them a very neat ſolution, which gave them a very different idea of his talents. He entered the army, and roſe to the poſt of captain of horſe, but ſtill retained his paſſion for mathematics, which he ſtudied at the hours of leiſure from military duty, though he was forced to do it in concealment, as an attachment to the ſciences was thought unbecoming the dignity of a ſoldier. Diſguſted with this idea he quitted the army, and devoted his whole time to ſtudy. When he was little more than thirty years of age, he diſtinguiſhed himſelf by the ſolution of problems drawn from the ſublimeſt geometry, which had been propoſed to the mathematical world by John Bernouilli. In the year 1693 he was admitted an honourary member of the Academy of Sciences at Paris, and from this period the philoſophical tranſactions of France, and thoſe of other countries, were enriched by his papers. He publiſhed a work on ſir Iſaac Newton's fluxions, entitled "Analyſe des infinimens petits," being the firſt Frenchman that ever wrote on this ſubject. He died at the age of 43, in the year 1704, and after his death was publiſhed another mathematical work which he had left in a finiſhed ſtate, and which included "Les Sections Coniques, les Lieux Geometriques, la Conſtruction des Equations, et une Theorie des Courbes Mechaniques."

Hospital, popularly *Spital,* a place or building erected, endowed, or ſupported by charitable contributions, for the reception and relief of the poor, aged, infirm, ſick, and otherwiſe helpleſs.

The word is formed of the Latin *hoſpes, hoſt* or *ſtranger.* In the firſt ages of the church, the biſhop had immediate charge of all the poor, both ſound and diſeaſed; alſo of widows, orphans, ſtrangers, &c. When the churches came to have fixed revenues allotted them, it was decreed, that, at leaſt, one-fourth part thereof ſhould go to the relief of the poor; and to provide for them the more commodiouſly, divers houſes of charity were built, which are ſince denominated hoſpitals.

They were governed wholly by the prieſts and deacons, under the inſpection of the biſhop.

In courſe of time, ſeparate revenues were aſſigned for the hoſpitals; and particular perſons, out of motives of piety and charity, gave lands and money for erecting of hoſpitals.

When the church-diſcipline began to relax, the prieſts, who, till then, had been the adminiſtrators of hoſpitals, converted them into a ſort of benefices, which they held at pleaſure, without giving an account thereof to any body, reſerving the greateſt part of the income to their own uſe; ſo that the intentions of the founders were fruſtrated. To remove this abuſe, the council of Vienne expreſsly prohibited the giving any hoſpital to ſecular prieſts in the way of benefice; and directed the adminiſtration thereof to be given to ſufficient and reſponſible laymen, who ſhould take an oath, like that of tutors, for the faithful diſcharge thereof; and be accountable to the ordinaries. This decree was executed, and confirmed by the council of Trent.

In England, hoſpitals, founded for the mere relief of the indigent and neceſſitous, are peculiarly called *alms-houſes;* the name hoſpital being reſerved to thoſe deſtined for the ſick, aged, young, &c. See Corporation.

Any perſon ſeiſed of an eſtate in fee ſimple, may, by deed inrolled in chancery, erect and found an hoſpital for the ſuſtenance and relief of the poor, to continue for ever; and place ſuch heads, &c. therein as he ſhall think fit; and ſuch hoſpital ſhall be incorporated, and ſubject to ſuch viſitors, &c. as the founder ſhall nominate. Alſo ſuch corporations ſhall have power to take and purchaſe lands not exceeding two hundred pounds per annum, ſo as the ſame be not holden of the king, &c. and to make leaſes for twenty-one years, reſerving the accuſtomed yearly rent ; but no hoſpital is to be erected, unleſs upon the foundation it be endowed with lands or hereditaments of the clear yearly value of ten pounds per annum. Stat. 39 Eliz. cap. 5.

This act was made perpetual by the 21 Jac. cap. 1. It is underſtood, in conſequence of this ſtatute, that if the lands given to an hoſpital be afterwards improved, they ſhall be enjoyed by the hoſpital, though they ſhould be above the yearly value of two hundred pounds. And goods and chattels, real or perſonal, may be taken of what value ſoever. (2 Inſt. 722.) But by 9 Geo. II. cap. 39. no lands nor money ſhall be conveyed or ſettled in truſt, for the benefit of any charitable foundations, unleſs the appointment of lands, money, or perſonal eſtate, ſtocks in the public funds excepted, be made by deed indented, ſealed, and delivered in the preſence of two witneſſes, at leaſt twelve calendar months before the death of the donor, and be inrolled in chancery within ſix calendar months next after the execution thereof; and unleſs ſuch ſtock in the public funds be transferred in the public books uſually kept for the transfer of ſtocks, at leaſt ſix calendar months before the death of the donor, and take effect immediately and without the power of revocation. By 43 Eliz. cap. 4. the lord chancellor may iſſue commiſſions to take account of miſapplication of lands and goods, given to hoſpitals, which have no ſpecial viſitors or governors. By 31 Eliz. cap. 6. the place of any perſon, taking reward for nominating to an hoſpital, ſhall be void. By the aforeſaid ſtat. of the 39 Eliz. cap. 5. it is provided, that all leaſes of eſtates for a term exceeding the number of twenty-one years, in poſſeſſion, and on which the accuſtomable yearly rent or more, by the greater part of twenty-one years next before the taking of ſuch leaſe ſhall not be reſerved and yearly payable, ſhall be void. By 43 Eliz. cap. 2. all lands within the pariſh are to be aſſeſſed to the poor's rate, and it has been determined by courts of law, particularly by Holt, in 1 Anne, that hoſpital lands are chargeable to the poor as well as others. (2 Salk. 527.) In the caſe of St. Luke's hoſpital, by 1 Geo. III. it was determined in general, that no hoſpital is chargeable to the pariſh rates, with reſpect to the ſcite thereof, except thoſe parts of it which are inhabited by the officers, whoſe apartments are to be rated as ſingle tenements, of which the ſaid officers are the occupiers. By the annual acts for the land-tax, it is provided, that the ſame ſhall not extend to charge any hoſpital, for or in reſpect to the ſcite of ſuch hoſpital, or any of the buildings within the walls or limits thereof; or to charge any of the houſes or lands, which on or before Mar. 25, 1693, did belong to Chriſt's hoſpital, St. Bartholomew, Bridewell, St. Thomas, and Bethlehem hoſpital; or to charge any other hoſpitals or alms-houſes for or in reſpect of any rents or revenues, which, on or before March 25, 1693, were payable to the ſaid hoſpitals or alms-houſes, for the immediate relief of the poor. But all ſuch lands &c. belonging to any hoſpital or alms-houſe, or ſettled to any charitable or pious uſe, as were aſſeſſed in the fourth year of W. and M ſhall be liable to be charged. The principal Engliſh hoſpitals are the following :

HOSPITAL, *Aſke's* or *Haberdaſhers*, is an hoſpital ſituated at Hoxton, and erected in 1692, by the company of Haberdaſhers, in purſuance of the will of Robert Aſke, eſq. who left for building and endowing it 30,000*l*. This hoſpital is eſtabliſhed for the maintenance of twenty poor haberdaſhers, and the ſupport and education of twenty boys. Each of the penſioners in this hoſpital has convenient apartments, is provided with proper diet and firing, three pounds yearly in money, and a gown every ſecond year. There are alſo eſtabliſhed ſalaries, &c. for chaplain, clerk, butler, porter, and other domeſtics.

HOSPITAL, *St. Bartholomew's*, is ſituated on the ſouth-eaſt ſide of Smithfield, and incorporated in the laſt year of the reign of Henry VIII. by the name of the hoſpital of the mayor, commonalty, and citizens of London, governors for the poor, called Little St. Bartholomew's, near Weſt-Smithfield. This hoſpital formerly belonged to the priory of St. Bartholomew, in Smithfield, founded by one Rahere, about the year 1102.

At the diſſolution of the monaſteries, Henry VIII. left five hundred marks a-year to it, on condition that the city ſhould add five hundred marks per annum for the relief of ſick and poor people ; but it was more largely endowed, for the uſe of ſick and lame perſons only, by Edward VI. by the munificence of the city and private benefactors. This hoſpital, having eſcaped the dreadful fire in 1666, was repaired and beautified by the governors in the year 1691. But the buildings became by length of time ſo ruinous and dangerous, that a ſubſcription was entered into in 1729, for defraying the expence of rebuilding it, on a plan comprehending four detached piles of building to be joined by ſtone gate-ways, about a court or area. Four piles have been erected and finiſhed ; one of theſe piles contains a large hall for the reſort of the governors at general courts, a compting-houſe for the committees, and other neceſſary offices ; the other three piles contain wards for the reception of the patients, &c.

It is governed by a preſident, treaſurer, &c. It is furniſhed with three phyſicians, and three maſter ſurgeons, beſides as many aſſiſtant ſurgeons, an apothecary, and vicar. The officers of this hoſpital, are a cook, ſteward, renter, matron, and porter. This hoſpital, ſince its enlargement, is capable of accommodating four hundred and twenty patients. It extends relief alſo to a great number of out-patients. By the report of 1811, it appears that this hoſpital adminiſtered relief to 9746 patients in the courſe of the preceding year.

HOSPITAL, *Bethlehem*, or *Bedlam*, was originally a priory, founded by Simon Fitzmary, ſheriff of London, in the year 1247, the 31ſt of Henry III. ; but in the year 1547, king Henry VIII. gave this hoſpital to the city, who employed it for the accommodation of lunatics. The preſent ſtately fabric was erected in the city of London in the year 1676, at a charge of about ſeventeen thouſand pounds. It was in length five hundred and forty feet, and forty feet broad, and contained a great number of cells, or rooms for the accommodation of the unfortunate, who are maintained without any expence to their friends ; except an allowance for bedding. At each end of this ſtately edifice were erected, in 1733, by the charitable contributions of the citizens, two wings, or ſpacious buildings, for the reception of poor incurable lunatics. But it became neceſſary very lately to take down the eaſt wing, on account of its decay. The report of the number of incurables was, a ſhort time ſince, 82, being 37 men, and 45 women ; who, by an order of court in July 1807, pay each 7*s*. per week if ſent by pariſhes, but if ſent by friends, 5*s*. The number of patients capable of relief amount upon an average to 170 ; and it has been found, at a mean computation, that nearly two out of three are reſtored to mental ſanity. Before this magnificent ſtructure there was a pleaſant garden, incloſed by a ſtately wall about ſeven hundred feet in length. This hoſpital, being united by the charter of Edward VI. to that of Bridewell, has the ſame preſident, governors, who conſiſt of members of the corporation, and of others, who are made governors by benefactions of 50*l.* each, treaſurer, clerk, auditor, phyſician, ſurgeon, and apothecary; but each hoſpital has a ſteward, and inferior officers peculiar to itſelf. The management is entruſted to a committee of 42 governors, ſeven of whom, with the treaſurer, phyſician, and other officers, attend every Saturday in monthly rotation for the admiſſion of patients, and other concerns of the hoſpital. The income of this hoſpital, appropriated to curables and incurables, and ariſing from rents, &c. and dividends on government ſecurities, amounts to 7412*l.* 16*s.* 10*d.* The number of patients in this hoſpital, on the 31ſt of December 1807, was 126, and of thoſe admitted during the year 1808, was 85, the total 211; the number of thoſe cured and diſcharged 52, of buried 12, and of patients in the hoſpital December 31ſt, 1808, 147. By the report of 1811, the number of cured and diſcharged in the preceding year was 81, of buried 7, and of patients remaining 147.

The decay of the buildings of this hoſpital has made it neceſſary to rebuild it; and the committee, upon mature deliberation, have determined to remove it to another ſituation. Accordingly, as the leaſes of the Bridge-houſe eſtates in St. George's fields and Lambeth-marſh fell in at Lady-day 1810, the corporation have agreed with the commiſſioners of thoſe eſtates for a ground plot of nearly twelve acres, fronting the road leading from Newington to Weſtminſter-bridge, part of which was formerly the ſcite of the houſe and gardens called the Dog and Duck; and on this ſpot it is propoſed to erect a new edifice, capable of accommodating a greater number of patients than the preſent building can contain, and ſuitable to the munificence of the city of London. The ſtatues of the two lunatics upon the pillars of the front gates of Old Bethlehem, which have been very much admired as monuments of art, were the work of Caius Gabriel Cibber, a native of Holſtein, who came into England at ſome period previous to the reſtoration of Charles II. to follow his profeſſion as a ſtatuary.

HOSPITAL, *Bridewell*, is ſituated in Bridge-ſtreet, Blackfriars, on a ſpot near the ancient river Fleet, where ſtood the palace in which king John held his court, and within the walls of which was a well dedicated to St. Bridged, or Bride, whence the palace, &c. derived its appellation. This palace had been variouſly occupied; it was the reſidence of cardinal Wolſey during his proſperity, and after his fall of Henry VIII. particularly in 1529. After this time it was ſuffered to decay, and biſhop Ridley begged it of Edward VI., to be converted to ſome charitable uſe. The citizens of London addreſſed the king's council in 1552; and Edward VI., in the ſame year, by a deed between himſelf and the mayor, commonalty, and citizens of London, granted to them all the manor-houſe and pariſh of Bridewell, with the appurtenances in the pariſh of St. Bridget, Fleet-ſtreet, with other lands, and licence to purchaſe four thouſand mark lands, beſides the lands given them by his majeſty in London and elſewhere, and to purchaſe ſo much land, and that the lands ſo given them ſhould be diſcharged of all tenths and firſt-fruits. And out of the ſuppreſſed hoſpital of the Savoy, he gave a great part (whoſe revenue was 700 mark land), beſides bedding and furniture for the maintenance and employment of vagrants and idle perſons, and of poor boys; uniting it with Bethlem hoſpital. The king was ſo deſirous that this grant ſhould be carried into effect, that he directed by his will that it ſhould be performed, and died ſoon after, on July 6, 1553. In 1557 the citizens of London preſcribed certain rules for the government of this hoſpital, and for the power of its governors and officers. (See BRIDEWELL.) By an act paſſed in 1782, the union of Bridewell and Bethlem was recognized, and the preſent method of appointing corporation governors was eſtabliſhed or confirmed. The revenues of Bridewell hoſpital, at that time, May 1792, amounted to 4505*l.* 13*s.* 1*d.* and of Bethlem hoſpital, to 7881*l.* 19*s.* 10*d.*, of which 2284*l.* 17*s.* belonged to the fund for incurables.

The front of this building, ſituated on the weſt ſide of Bridge-ſtreet, Blackfriars, has not for many years exhibited any part of the original palace. At preſent there is one vaſt quadrangle. The chapel is a plain edifice; the priſon's gloomy front occupies the ſouth-weſt corner; and the hall the greater part of the ſouth ſide. The cieling of this large room, thirty-nine paces in length and fifteen in breadth, is horizontal, without any other ornament beſides two flowers, where the luſtres are ſuſpended. At the weſt end, and over the chimney, is a large picture by Holbein, repreſenting Edward VI. in the act of delivering the charter for this hoſpital to the mayor and citizens of London. There are ſome other pictures which we have not room to particularize. It appears (ſee BRIDEWELL), that this inſtitution is of a mixed nature, partaking of the hoſpital, the ſchool of induſtry, the work-houſe, and the priſon for correction. The ſchool is conducted by ſix maſters of different arts, who are elected by the governors, *viz.* a printer, book-binder, ferrit, orris, and galloon weavers, and a ſilver-ſmith, to whom twenty-eight youths are bound from Chriſt's hoſpital, as apprentices, who are clothed at the charge of Bridewell hoſpital, but maintained by their maſters, who receive the whole profit of their work. They were formerly habited in a blue jacket and trowſers, with a white hat; but this ſingularity has been of late judiciouſly aboliſhed in favour of the common clothing of other perſons: when they have ſerved their apprenticeſhip of ſeven years, they receive their freedom, and a gift of ten pounds towards eſtabliſhing themſelves in buſineſs. The workhouſe, and the priſon for vagrants, idle and diſorderly perſons of both ſexes, are ſeparated into ſolitary rooms, where employments are provided, which it is a part of their puniſhment to execute, and which are exerciſed by their taſk-maſters, and ſometimes accompanied with coercion. Although Bethlem and Bridewell hoſpitals are united, and they are governed by the ſame members, diſtinct accounts of their reſpective revenues are kept. The accounts exhibited at Chriſtmas 1808, ſtated a net income of 6201*l.* 6*s.* 11*d.*, ariſing from net rents of the eſtates and the dividends on 3000*l.* 3 per cents., to which legacies and donations are to be ſubjoined. The expences attending the arts-maſters and apprentices amounted to 645*l.* 4*s.* 6*d.*; the charges attending the vagrants to 706*l.* 19*s.*, and the ſalaries and gratuities to the ſeveral officers and ſervants, &c. amounted to 1586*l.* 14*s.* 2*d.*, making a total of 2938*l.* 17*s.* 8*d.*, which exceeded the receipt by 3262*l.* 7*s.* 3*d.* The qualification of a governor is a donation of 50*l.* paid upon election, which is in the general court. This hoſpital is under the immediate management of a preſident, treaſurer, chaplain, phyſician, clerk, ſteward, and other inferior officers. The number of perſons received into this hoſpital, during the year 1809, amounted to 1261, including 279 vagrants or diſorderly perſons, committed by the lord mayor and aldermen, and ordered for hard labour or correction, 917 perſons to be forwarded to their reſpective pariſhes, and 35 apprentices.

HOSPITAL, *Charter-Houſe*, or *Sutton's*. See CHARTREUSE.

HOSPITAL, *Chriſt's*, popularly called the *Blue-coat Hoſpital*, was anciently a monaſtery of Grey friars, founded by Rahere, the firſt prior thereof in the time of Henry I., or, as others ſay, by John Ewin, citizen and mercer. It was diſſolved by Henry VIII. and granted by him to the city in 1547, and the grant to the citizens was confirmed in 1552, by charter of Edward VI., who converted it into an hoſpital for poor children; who are ſupplied with all neceſſaries and conveniences, cloathed, dieted, and taught.

Since its firſt endowment, it has received abundance of new donations. Beſides the numerous benefactions of private perſons, the city allows this houſe the benefit of ſuperintending and licenſing the carts of London; and a duty of about ¾ths upon every cloth brought to Blackwell-hall, where clerks are kept to receive it. The citizens, by king Edward's charter, are incorporated governors of his ſeveral foundations in the city and liberties of London by the name of the mayor, commonalty, and citizens of the city of London, governors of the poſſeſſions, revenues, and goods of the hoſpitals of Edward VI., &c. A great part of it was burnt down by the great fire in 1666; but is again rebuilt by the care of the governors; though not without incurring a great debt, and anticipating the revenues of the hoſpital; all which incumbrances have been long ſince diſcharged.

Formerly, a thouſand poor children, moſt of them orphans, were maintained on this foundation; eight or nine ſcore yearly put out apprentices, and the girls to ſervice; but the number has fluctuated from various cauſes.

Beſides the children that are maintained within the walls of this hoſpital, there is a conſiderable number of the leaſt and youngeſt provided for in the country, *viz.* at Hertford, in Hertfordſhire, where there are a ſchool-houſe, a maſter's houſe, and ſeveral houſes for nurſes employed in taking care of the children. The number of children under the care and charge of this hoſpital, in 1810-11, was one thouſand two hundred and thirty-two; one hundred and ſeventy-two were put out apprentices, and eight buried.

Here were two mathematical ſchools; the firſt founded by king Charles II. Aug. 19th, 1674, but they are now united. Youths are there taught ſeveral parts of practical mathematics, particularly navigation, to fit them for apprentices to maſters of ſhips; there is alſo a grammar-ſchool (whence the moſt improved boys are yearly ſent to the univerſity), a writing-ſchool, and a ſchool for the girls, where they learn to read, to ſew, and to mark.

In the mathematical ſchool, called the new royal foundation of king Charles II., forty boys are qualified for the ſea; who wear appropriate badges, and whoſe claſſes are examined by the elder brethren of the Trinity-houſe, ten of whom are yearly appointed to ſhip-maſters, and ten others received into their places, who have attained a competency in writing and Latin; and the governors appoint forty more. All the other ſcholars are bound apprentices at fourteen or fifteen years of age for ſeven years; or, if properly qualified, are ſent to either univerſity of Oxford or Cambridge, where they are maintained for a like term: one ſcholar is ſent every year, except on the return of every ſeventh year, when two ſcholars are ſent; the ſcholars have their choice of the college to which they are to go, but Pembroke-hall, in Cambridge, is generally preferred, as moſt advantageous to them; and one ſcholar is alſo ſent to Oxford in eight years. The allowance paid to each of them during the firſt ſeven years is 60*l.* per annum. On St. Matthew's day, 21ſt of September, yearly, the lord mayor in ſtate, with the preſident, aldermen, ſheriffs, treaſurer, and governors, and other company, aſſemble in the great hall after divine ſervice at Chriſt's church, to hear orations from the elder ſcholars; one of whom ſpeaks in Latin, and the other in Engliſh, the latter of theſe having ſpoken in Latin in the preceding year, is now elected off to college, and leaves the ſchool in about a month afterwards: on this occaſion a glove is handed about among the audience for their contribution.

The maſters of theſe ſchools are, a grammar maſter, who is aſſiſted by an under maſter, a mathematical maſter, and two writing maſters, who have 100*l.* per annum each, for their ſalaries, beſides houſes. There are alſo two ſchoolmiſtreſſes. The grammar maſter hath an addition of 20*l.* yearly for cathechiſing the boys, and his uſher is allowed 50*l.* a year. There are likewiſe a drawing maſter and muſic maſter.

The children are admitted by an order of committee and treaſurer, ſigned by the chief clerk. Their education conſiſts of arithmetic, writing, reading, navigation, Latin, and Greek. Their dreſs is the ſame as that uſed in the time of Edward VI., being a blue cloth coat or tunic, reaching to the feet, with yellow breeches and ſtockings, and a round bonnet or cap too ſmall to cover the head, and it is therefore generally taken in the hand. An examination of the children in the grammar ſchool takes place in the months of March and September by an experienced perſon, appointed by the governors. The upper maſter examines the under maſter's higheſt form twice in the year, and takes ſuch as he judges ready for his inſtruction. The holidays allowed are eleven days at Eaſter, including Sundays; one week at Whitſuntide; and at Bartholomew-tide three weeks; and at Chriſtmas 15 days, and the uſual Saint's days, &c. The catechiſer teaches the children the fundamental points of religion three times in each week, and at other times viſits the wards for the inſtruction of the inmates. The Engliſh reading-maſter is authorized to aſſemble all the children belonging to any two wards in the grammar ſchool, from 11 to 12, three times in a week, in order to obtain a knowledge of their progreſs. Thus every child in the 12 wards is examined once in 14 days. He may ſubſtitute for this purpoſe under his own obſervation any boy intended for the univerſity, and he appoints a marker in the ſeveral wards, who is to obſerve and correct miſtakes in the reading of prayers, &c. and he reads himſelf occaſionally for example. If the marker's diligence is approved, he receives a ſilver medal of the founder. The two writing maſters have two uſhers. An exhibition of drawing and ſpecimens of writing takes place in the hall the 31ſt of March and 30th of September; and the writing is ſaid to be of ſuch ſuperlative excellence, that the worſt would procure the writer a ſituation in the moſt faſtidious merchant's counting-houſe.

Among the peculiarities of Chriſt's hoſpital, a ſight is exhibited from Chriſtmas to Eaſter every year, which no other inſtitution, lay, civil, eccleſiaſtical, or eleemoſynary, has ever equalled in their grand ceremonies, or which is more calculated to impreſs the heart of a ſpectator with the livelieſt ſentiments of ſympathetic pleaſure; we mean the ſupper of all the children on Sunday evenings at ſix o'clock, to which ſtrangers are admitted by tickets.

The great hall, which was rebuilt after the fire of London, contains ſeveral tables, which are covered with table-cloths, wooden platters, and buckets of beer, with bread and cheeſe. The treaſurer and governors take their ſeats at the upper end, at a ſemi-circular table; the boys, attended by the nurſes of their ſeveral wards, enter in order, and arrange themſelves on each ſide of the hall; ſtrangers are then admitted, who go along the centre of the hall to the upper end; the maſters of the ſchool, the ſteward, and the matron, take their places there alſo; and the nurſes preſide at each table, on which a great number of candles are placed, and theſe, with many lamps and a large luſtre, illuminate the room. The ceremony then commences by the ſteward ſtriking upon one of the tables three ſtrokes with a mallet, which produces a profound ſilence ; one of the boys intended for the church, having aſcended a pulpit on one ſide of the hall, then reads the ſecond leſſon for the afternoon ſervice of the day,and an evening prayer compoſed for the occaſion, at the cloſe of which the reſponſe of "Amen," from about eight hundred youthful voices, has a very intereſting effect ; a pſalm or hymn is next ſung by the whole aſſembly, accompanied by the organ : the ſame youth then delivers the grace, after which the boys take their ſeats, and the ſupper proceeds. When the repaſt is concluded, the ſteward again ſtrikes the table as before, and the boys inſtantly arrange themſelves again on each ſide of the hall, and a grace is ſaid from the pulpit : an anthem is then ſung, after which the boys collect all the fragments into ſmall baſkets ; and each ward, preceded by its nurſe with lighted candles, marches in order paſt the upper table, where they bow to the governors, and file off to an adjoining ſchool-room, the doors of which are thrown open to receive them, and the ceremony is cloſed.

There is no perſon who has ever witneſſed this ceremony that does not feel the ſublimeſt and the tendereſt emotions : it is a combined offering of the gratitude of hundreds to the throne of Divine Mercy !

The officers of this hoſpital are, a preſident, treaſurer, phyſician, chief-clerk, under clerk and receiver, ſurgeon, apothecary, wardrobe-keeper, and aſſiſtant clerk, ſteward, matron, &c. The number of governors, ſome of whom ſuperintend this hoſpital, in their ſeveral appropriate departments, is very conſiderable ; and it muſt be allowed that no inſtitution of ſuch magnitude is, upon the whole, better conducted : though ſome have thought that the diet, which is plain and ſimple, might admit of uſeful alterations, particularly with regard to vegetables, &c., without any material addition of expence. The qualifications of governors are 200*l.* and a preſent of 200*l.* more, which is expected upon election. This inſtitution is ſupported by the revenues of its eſtabliſhments and funds, and alſo by legacies and benefactions.

HOSPITAL, *Emanuel*, is ſituated in Tothill-fields, in Weſtminſter, and was founded by lady Dacres in 1601, for 20 aged ſingle men and women, each of whom have an allowance of 10*l.* per annum, with the liberty of bringing up a poor child. The city of London has this charity in truſt, with 200*l.* a-year for its ſupport, iſſuing from a leaſe of 199 years, at the expiration of which, the whole manor of Brainſburton, in the county of York, amounting to above 600*l.* per annum, is deviſed for the augmentation of this foundation. In 1735 the court of lord mayor and aldermen erected a ſchool-houſe and dormitory adjoining to this hoſpital, for the reception of twenty poor boys and girls, to be elected out of the pariſhes of St. Margaret, Weſtminſter, and of Chelſea and Hayes in Middleſex, to which the pariſh of St. John, Weſtminſter, has ſince been added, by the court of aldermen, none of the children being admiſſible under ſeven years of age, nor to be maintained there after 14, who are ſupplied with all the neceſſaries of life ; the boys are taught to read, write, and accompt, and the girls to read, write, and do plain-work.

In conſequence of the increaſed value of the lands appropriated to the ſupport of this inſtitution, the governors obtained an act of parliament in 1795 for augmenting the number of objects of this charity : and after obtaining this act, five men and five women were admitted as out-penſioners, with ſuch allowance as the court ſhould think fit. And alſo beſides the 20 children in the hoſpital, eight other poor boys are clothed and educated at the hoſpital's expence, their ages being at the time of election from ſeven to ten. The number of girls in the hoſpital has been increaſed from 10 to 12. In conſequence of this act the 10 out-penſioners are allowed 10*l.* per annum, till houſes in the hoſpital become vacant, when they are admitted, and other out-penſioners appointed in their room.

A ſchool was opened at Brainſburton, to which eight poor boys were ſent, and there clothed, maintained, and educated at an eaſy expence, compared with that of the hoſpital in town. In the year 1802 the court of aldermen iſſued new ordinances and regulations, ſimilar to thoſe of the year 1795. The ſalaries and allowances to the maſter and miſtreſſes, and to the warden and ſteward, matron, and poor men and women in the hoſpital, and alſo to the out-penſioners, were ſettled during the pleaſure of the court, and have ſince been increaſed ; and the court undertook to pay all the bills of expenditure. The charges are as follows :

	£
The maſter, with the houſe and garden free of taxes, The miſtreſs, do.	110
The poor men and women, in-penſioners with a chaldron of coals,	18
The poor men and women, out-penſioners,	10
The warden and ſteward, in addition to the 18*l.* as in-penſioners,	10
The matron, do.	20

All theſe allowances are payable quarterly, and the coals delivered at Michaelmas. A diet table is alſo preſcribed. The whole charity now conſiſts of a maſter and miſtreſs, and 20 in-penſioners, *viz.* 10 men, of whom one is the warden, and 10 women, of whom one is the matron, whoſe allowances have been lately increaſed ; five men and five women, as out-penſioners : alſo ten boys and ten girls, who are in-penſioners, and have a ſchool-room, who are all apprenticed to trades, with a premium of 10*l.* half paid at the time of binding, and the other moiety when they have ſerved half their apprenticeſhip.

HOSPITAL, *Fever*. See HOUSE *of Recovery*.

HOSPITAL, *Foundling*, was eſtabliſhed, at the ſolicitation of Thomas Coram, eſq. by royal charter, in the 13th year of George II. and incorporated by the name of "The governors and guardians of the hoſpital for the maintenance and education of expoſed and deſerted young children :" and the powers granted by charter were enlarged and confirmed by a ſtatute of the ſame year. The corporation of this hoſpital is allowed to purchaſe lands or tenements to the yearly value of 4000*l.* This charity is under the management of a preſident, the king being patron; ſix vice-preſidents, treaſurer, and governors. The ſubordinate officers are a chaplain, morning preacher, evening preacher, ſecretary, ſolicitor, matron, ſchool-maſter, treaſurer's clerk, and organiſt. This hoſpital has two phyſicians, a ſurgeon, and apothecary. In 1742 the noble building in Lambs-conduit fields for the uſe of this hoſpital was begun to be erected ; one wing was finiſhed in 1745 ; the chapel was begun in 1747 ; and in 1749 orders were given for building the other wing of the hoſpital, which, together with the treaſurer's houſe, was ready for habitation in 1752. The whole building was originally calculated to hold 400 children ; and the talents of ſeveral eminent artiſts were employed in contributing to its embelliſhments ; among whom were Mr. Hogarth, Mr. Hayman, Mr. Highmore, Ryſbrack, &c. Mr. Handel, upon the building of the chapel, gave an organ, and the benefit of his oratorio of the Meſſiah, the performance of which was conducted by himſelf : this he repeated ſeveral years, which produced to the charity 6700*l.* and by his will he bequeathed to it his property in the muſic. Before the end of the year 1752 the hoſpital had received 1040 children, of whom 559 were then under its protection; but the expence far exceeding the income, application was made to parliament for aſſiſtance; and in 1756 the houſe of commons, after paſſing three introductory reſolutions, voted 10,000*l.* in conſequence of which, before the 31ſt of December 1757, during an interval of little more than a year and a half, the number of children that were received amounted to 5510. Large ſums were afterwards granted, and the number of infants, in 1760, increaſed to 6000, which they had no adequate income to maintain. The corporation received continual parliamentary aſſiſtance, during 15 years, till 1771, when it ceaſed, at an average of not leſs than 33,000*l.* per annum; and the number of children in 1769 was reduced to 1000, by apprenticing all who could be placed out. The country hoſpitals were diſcontinued, and the eſtabliſhment reduced to its permanent income. The improvement of the revenue by granting building leaſes of the lands, belonging to the hoſpital, was the next method adopted. Ten acres of the 56 purchaſed of lord Saliſbury had been occupied by the hoſpital and its conveniences; and after ſeveral delays and demurs, it was agreed, in 1788, that the ground which lay ſouth of and adjoining to the road leading from the gates of the hoſpital to Gray's Inn-lane ſhould be let on building leaſes. In the years 1783, 1793, and 1794 the plan of building leaſes was fully adopted, and in ſubſequent years carried on very much to the embelliſhment of the vicinity of the hoſpital, and to the improvement of its revenues. The emoluments ariſing from theſe improvements, and from the increaſe of governors and benefactions, have enabled this corporation to replace the ſtock which they had been under a neceſſity of parting with for the ſupport of the charity, to repair the hoſpital, to liquidate its outſtanding debts, and at the ſame time gradually to enlarge the eſtabliſhment of its children; and it affords the moſt encouraging proſpect of farther augmentation. The ordinary age of reception of children is under two months, and upon the hearing of the petitions, the character and exigency of the mother, and deſertion of the father, are inveſtigated. The age, after which children cannot be received, is 12 months, unleſs they are the children of ſoldiers and ſailors, the time of whoſe reception is extended to five years of age. The children, after admiſſion, are numbered and regiſtered, and their billets made up; for this purpoſe the ſecretary writes a number on a ſlip of parchment, and affixes it to their clothes; and great care is taken that theſe numbers remain fixed to the children whilſt they continue at nurſe: he then makes up the billet, which contains the number, ſex, and ſuppoſed age, the date of reception, and any particular writing or token brought with the child, which is alſo marked with its number. The billet is marked on the outſide with the number, date, and letter M or F to diſtinguiſh the ſex. Theſe billets, being the only means which can enable the governors to know the children, in caſe they ſhould be enquired for, are kept with great ſecrecy and care, and are never opened but by order of the general committee. After regiſtry and baptiſm, the children are committed to the care of inſpectors, who find out proper nurſes, and ſuperintend their conduct: when the children attain the age of four or five years, and not before, they are remanded to the hoſpital, when the ſecretary returns receipts for them to the inſpectors; and they are then inoculated or vaccinated. The mortality of children, committed to the care of nurſes, is very ſmall; the average of thoſe who died under 12 months in 10 years, being only one in ſix, and for the laſt four or five years even leſs than that proportion.

The children admitted to this hoſpital are not only nurſed, but educated and employed under proper regulations, and provided with all neceſſaries, till they attain the age appointed by parliament for their diſcharge, *viz.* twenty-four for males, and twenty-one for females, unleſs they be previouſly married with the conſent of the committee: at ſuch time, the general committee, at their diſcretion, may give them cloaths, money, or neceſſaries, not exceeding the value of ten pounds. In the mean while, the corporation of the hoſpital may employ the children educated and maintained here in any ſort of labour, or manufacture, or in the ſea ſervice; and bind ſuch children apprentices, or place them out as ſervants, or mariners, to any huſbandman, maſter or captain of a ſhip, or other perſon, until the aforeſaid reſpective ages. The girls are diſtributed into three claſſes, under the care of three different miſtreſſes, by whom they are taught needle-work, and reading, to aſſiſt in the houſe-work, kitchen, and laundry, &c. The boys are put out apprentices at twelve or thirteen years of age, and the girls at fourteen; and they are diſpoſed of with great attention on the part of the committee. The reports as to their ſubſequent conduct, which is particularly inquired into, have been very favourable. By a report of ſir T. Bernard in 1798 it appears, that out of 252 apprentices, 166 were doing well; and of the remaining 86, 15 had turned out ill, partly through their own fault and partly through that of their maſters. The proportion of good ſervants in place and good apprentices far exceeds the number of the others; and there are many reſpectable perſons at preſent in London, married and ſettled in buſineſs, who have been nurſed, educated and apprenticed by this charity. By an attention to cleanlineſs and diet the children have of late been more healthy than formerly.

Hospital, *French*, in the pariſh of St. Luke, was erected in the year 1716; and the governors of it, by letters patent of Geo. I. anno 1718, were conſtituted a body politic and corporate, by the appellation of "The governor and directors of the hoſpital, for poor French Proteſtants and their deſcendants, reſiding in Great Britain."

This inſtitution owes its riſe to the charity of M. de Caſtigny, maſter of the buckhounds to king William III., as prince of Orange, who bequeathed 1000*l.* for a building and its maintenance. The intereſt of this ſum was permitted to accumulate, and aided by voluntary contribution; ſo that a fund was raiſed ſufficient to erect a building for the accommodation of about 80 poor perſons. The corporation, by the ſubſequent contributions of benevolent refugees and others, has been enabled, at different times, to enlarge the buildings, ſo as to admit 200 poor, who are either very aged, or diſordered in mind or body. They are ſupplied with every neceſſary for their ſubſiſtence and relief. The government of this hoſpital is veſted in a governor, deputy-governor, and 37 directors. The governor remains in office three years; the deputy-governor is choſen for one year; alſo a treaſurer, ſecretary, and miniſter. Eight directors are choſen at the four quarterly courts to conſtitute a committee, who meet at the hoſpital every Saturday. Five viſitors are choſen annually from among the directors, who, with the phyſician and ſurgeon, make a general viſit in June, and report the ſtate of the whole inſtitution to the next court. The treaſurer and ſecretary are choſen annually: the miniſter performs divine ſervice in the chapel of the hoſpital, and viſits the ſick at leaſt once a week. The phyſician attends regularly once a week, and at any other time when required. The ſurgeon and apothecary attend at leaſt three times in the week. The ſteward has the ſuperintendance of the houſe and family. The chapel is commodious, in which an annual ſermon is preached upon Wedneſday next before Eaſter for the benefit of the hoſpital. The number of beds is 200, but that of patients is much leſs conſiderable.

Hospital, *St. George's*, near Hyde-park Corner, was inſtituted in 1733 for the relief of the poor ſick and lame, who are ſupplied with advice, medicine, diet, waſhing, lodging, and ſome of them alſo with cloaths. This hoſpital is under the direction of a general board of the governors, now amounting to about 350, who meet regularly five times a year, and a committee of which meets every Wedneſday to admit and diſcharge patients, and tranſact the buſineſs of the hoſpital. The qualification for a governor is 5*l.* 5*s.* as an annual ſubſcription, or 50*l.* as a ſingle benefaction. The king is preſident, there are ſix vice-preſidents, two treaſurers, four phyſicians, four ſurgeons, and two aſſiſtant ſurgeons, ſix viſiting apothecaries: the domeſtic officers are a chaplain, apothecary, ſecretary, matron, and meſſenger. Beſides the patients that are admitted into the houſe, relief is afforded to a conſiderable number of out-patients. By the account of the year 1808, it appears that from the firſt inſtitution the patients diſcharged amounted to 209,430, and the number of patients relieved in that year was 2717; 1596 being in-patients, and 1121 out-patients. The whole expence during the ſame year amounted to 5880*l.* 0*s.* 8*d.* The annual ſubſcriptions are ſtated at 2378*l.* 9*s.* To this hoſpital is annexed another inſtitution denominated "The Charity for Convaleſcents of St. George's Hoſpital," and eſtabliſhed in the year 1809.

Hospital, *Greenwich*, is a retreat for ſeamen, who, by age, wounds, or other accidents, are diſabled from ſervice; and for the widows and children of ſuch as are ſlain in the ſervice.

This, in point of magnificence and ſpaciouſneſs, greatly excels even Chelſea hoſpital. King William and queen Mary had the benevolent deſign of eſtabliſhing this hoſpital much at heart; and they accordingly made a grant of the royal palace at Greenwich, a part of which, on the weſt ſide, had been begun to be rebuilt for a royal palace by king Charles II., and alſo of a large adjoining ſpace of ground, for this purpoſe. King William, after queen Mary's death, on the 25th of October 1695, appointed by patent a number of commiſſioners for directing the building and endowing of this intended hoſpital, and granted a large ſum out of his civil liſt for that end, and his royal ſucceſſors were alſo conſiderable benefactors to it. At length annual ſums were granted by parliament for finiſhing this truly magnificent ornament and glory of Great Britain: and it was fully completed in the reign of George II. By an act of the 7th and 8th of king William, cap. 21. the privilege of admiſſion into this hoſpital was granted to regiſtered ſeamen, when maimed or ſuperannuated, and to the widows and children of thoſe who were killed in the ſervice. This act for regiſtering ſeamen was enforced by 8 and 9 W. III. cap. 22. but repealed by 9 Anne. Every ſeaman is required to allow out of his wages ſixpence a month, for the better ſupport of the ſaid hoſpital; for which duty receivers are appointed, &c. The money is paid into a receiver's office on Tower-hill, which is under the management of three commiſſioners and their clerks. (8 and 9 W. III. cap 23. 10 Anne. 2 Geo. II. cap. 7.) By the laſt act a ſeaman, abſenting himſelf from his ſhip without leave, ſhall forfeit for every day's abſence two days' pay to Greenwich hoſpital to be deducted out of his wages: and a ſeaman, not entering into the king's ſervice, who ſhall leave his ſhip before he hath a diſcharge in writing, ſhall forfeit one month's pay in like manner.

By 8 Geo II. cap. 29, the net rents and profits of the eſtates forfeited by the attainder of James late earl of Derwentwater, and of Charles Radcliff, were applied in the firſt place to the completing of the building of Greenwich hoſpital; and it is hereby enacted, that all ſeamen in the merchant's ſervice who ſhall happen to be maimed in fighting, not only againſt pirates, but againſt an enemy of his majeſty, &c. ſhall be admitted into and provided for in the ſaid hoſpital, as well as ſeamen maimed or diſabled in the king's actual ſervice: and in the next place, the whole net rents of thoſe forfeited eſtates ſhall be for ever applicable for the ſupport of the ſaid royal hoſpital, for the better maintenance of the ſeamen therein, worn out and become decrepit in the ſervice of their country. This law was farther explained and amended by 11 Geo. II. cap. 30.

Proviſion is made for ſecuring the payment of the ſixpence per month from privateers by 18 Geo. II. cap. 21. and for ſecuring prize money belonging to the hoſpital by 20 Geo. II. cap. 24. The governors are empowered to grant out-penſions to decrepit ſeamen, by 3 Geo. III. cap. 16.; and perſons perſonating or falſely aſſuming the name and character of out-penſioners, ſhall be guilty of felony without benefit of clergy: and thoſe who receive half-yearly penſions ſhall, together with the printed bill delivered to them by the commiſſioners, produce a certificate under the hand of the miniſter and church-wardens, where they reſide, teſtifying that they are the perſons named in ſuch bill.

The penſioners belonging to this hoſpital are cloathed in blue, and allowed ſtockings, ſhoes, linen, and a ſhilling a week for other neceſſaries. The victualling is according to the allowance of Chelſea hoſpital, *viz.* four men to a meſs, each meſs to contain four pounds of fleſh, a gallon of beer, &c.

The governors of this hoſpital are the great officers of ſtate, and perſons in high poſts under the king; and it is under the more particular inſpection and government of twenty-four commiſſioners, a governor with an annual ſalary of 1000*l.* and clerk; a lieutenant-governor, whoſe ſalary is 400*l.* a-year; four captains, allowed 230*l.* a-year each; and ſeven lieutenants, with 115*l.* a-year each; a treaſurer, whoſe ſalary is 200*l.* with two clerks; ſecretary with 160*l.* a-year and clerk, auditor, whoſe annual ſalary is 100*l.* and clerk, ſurveyor with 200*l.* ſalary, clerk of works at five ſhillings a day, a phyſician at ten ſhillings a day, a ſurgeon with an annual ſalary of 150*l.* a ſervant and two aſſiſtants, diſpenſer with 50*l.* a-year and his aſſiſtants, two chaplains with a ſalary of 130*l.* each, ſteward with a ſalary of 160*l.* and three clerks; clerk of cheque with 100*l.* ſalary and three clerks; brewer, three matrons, organiſt, meſſenger, two chief cooks and four mates, ſcullery man and two mates, butler and two mates, porter and barber. For a particular account of the building and its eſtabliſhment, ſee Greenwich. The cheſt at Chatham is now under the management of the governors of this hoſpital. See Chest.

Hospital, *Guy's*, ſituated in the pariſh of St. Thomas, Southwark, was founded in his life-time, by Thomas Guy, eſq. a very wealthy citizen and bookſeller of London. For this purpoſe he took a leaſe of a piece of ground belonging to St. Thomas's hoſpital, for the term of 999 years, at a ground-rent of 30*l.* per annum; the foundation of the intended hoſpital was laid in 1722, and the fabric was roofed before the death of the founder, which happened in the year 1724. The charge of erecting and furniſhing this hoſpital amounted

amounted to the ſum of 18,793*l.* 16*s.* 1*d.* and the ſum left to endow it was 219,499*l.* 6*s.* 4*d.* and upwards. The governors of this hoſpital were incorporated by act of parliament, made in the 11th year of Geo. I. anno 1725, under the title of "The Preſident and Governors of the Hoſpital founded at the ſole coſt and charges of Thomas Guy, eſq." and under this title they are empowered to purchaſe, either in perpetuity or for a term of years, any eſtate not exceeding 12,000*l.* per annum. The number of governors appointed to be choſen from thoſe of St. Thomas's hoſpital, by the founder, is 60; and it is enacted that if the number does not exceed 40, the vacancies ſhall be ſupplied by the lord chancellor, lord keeper, or commiſſioners of the great ſeal, lords chief juſtices of the king's bench and common pleas, and lord chief baron of the exchequer, ſo as to make up the number of 50. It is alſo enacted, that the management of the hoſpital be referred to a preſident, treaſurer and 21 governors; forming a committee appointed by a general court, ſeven of whom are annually changed; this committee is impowered to chuſe, and at pleaſure to remove, all officers and ſervants employed in the hoſpital, except the phyſicians, ſurgeons, clerk, and chaplain, who are elected by the general court, to appoint their ſalaries, to admit objects of charity, and in general to tranſact the affairs of the hoſpital ſubject to the inſpection and controul of a general court; and this general court has power to make any by-laws for the better government of the corporation. This hoſpital, ſo liberally endowed by its founder, was eſtabliſhed for the reception and relief of upwards of 400 ſick and diſeaſed poor objects; beſides twenty incurable lunatics, who are provided for in a ſeparate building. Since the deceaſe of Mr. Guy, the governors have taken a leaſe of an additional ſpot of ground, for which, with the former, they annually pay to St. Thomas's hoſpital the ſum of 100*l.* On this ground they have erected two handſome wings; in the centre of one wing there is a ſpacious hall and rooms for public buſineſs, and oppoſite to it in the other a neat and elegant chapel, in which there is a finely executed ſtatue of the founder by Mr. Bacon. The corner houſe in one wing is for the reſidence of the treaſurer, and the other houſes are for the chaplain, ſteward, and apothecary. This hoſpital is under the medical inſpection of three phyſicians and three ſurgeons, who are allowed 40*l.* a-year each, an apothecary, who has 90*l.* a-year for himſelf and aſſiſtant, and a houſe. The officers are a clerk, chaplain, ſteward, accomptant, matron, butler, and aſſiſtant; ſurgery man, porter, beadle, keeper of the lunatic men, and a keeper of the lunatic women. It contains 13 wards and 411 beds; and the number of patients admitted into this hoſpital, at an average of ten years, has been 2244 yearly; of whom 2014 have been diſcharged, and 230 have died: under the prudent conduct of the treaſurer and governors, it does great honour to the liberality of its founder. The day of admiſſion to this hoſpital is Wedneſday. To this hoſpital belongs a theatre for chemical, medical, and anatomical lectures. On one evening in the week medical ſubjects are debated for the improvement of the ſcience and practice. A library is alſo a part of this eſtabliſhment, well furniſhed with profeſſional works, and a collection of anatomical preparations. We ſhall add under this article, that Mr. Guy (ſee Guy) has bequeathed to the preſident and governors of Chriſt's hoſpital, a perpetual annuity of 400*l.* for taking into the ſaid hoſpital four children yearly, at the nomination of the governors of his hoſpital: preference being always given to his own relations, who have never failed to offer themſelves. To his poor aged relations he gave annuities during life to the amount of 870*l.* and among his younger relations and executors the ſum of 75,589*l.* together with the ſum of 1000*l.* for diſcharging poor priſoners, within the city of London, and counties of Middleſex and Surry, who could be releaſed for the ſum of five pounds.

He likewiſe erected an alms-houſe, with a library at Tamworth, where his mother reſided, and which he repreſented in ſeveral parliaments, for the uſe of 14 poor men and women; to whom he allowed certain penſions during life, and at his death, for their future ſupport and putting out children apprentices, &c. he bequeathed a perpetual annual ſum of 115*l.* Mr. Guy alſo built and furniſhed, at his own expence, in the year 1707, three wards on the north ſide of the outer court of St. Thomas's hoſpital; and gave to the ſame 100*l.* per annum, for eleven years immediately preceding the foundation of his hoſpital. Some time before his death, he removed the frontiſpiece of the ſaid hoſpital of St. Thomas, which ſtood over the gate-way in the borough, and erected the ſame in the place where it now ſtands, fronting the ſtreet; and having enlarged the gate-way, rebuilt the two large houſes on the ſides thereof, and erected the ſtately iron-gate between them, at an expence of between 2 and 3000*l.* To many of his relations he gave ſtated allowances of 10 or 20*l.* per annum, and to others, money for advancing them in the world.

Hospital *of Jeruſalem.* See Hospitaler.

Hospital, *Jews*, called בת חולים, *Beth-holem*, or houſe for relief of the ſick, was founded by ſubſcription in 1748. It was firſt eſtabliſhed in Leman-ſtreet, Goodman's-fields. This charity, which adminiſters medicines and advice gratis, was maintained by a certain ſum allowed by the ſynagogue, and private contributions, amounting, ſoon after its firſt eſtabliſhment, to about 500*l.* a-year. An enlargement becoming neceſſary, a more commodious building was erected in 1792 at Mile-end, Old-town, which contains accommodation for 14 ſick men, and as many ſick women, and for eight lying-in women; beſides 21 beds for the old and indigent. The beds for the ſick are in four wards, thoſe for lying-in women in a ſeparate apartment, and thoſe for the old and indigent in ten rooms, with a long-ſitting room, which has two fire-places. The contributions for the ſupport of this charitable inſtitution are general throughout the Portugueſe congregations by offerings made at the ſynagogue, and their elders grant from their general charity fund from 270 to 300*l.* annually towards its ſupport; they have alſo a ſmall capital in the funds. This hoſpital diſpenſes medicines to all perſons who hold any employment under their ſynagogue, and to all the poor of their congregation.

Hospital, *German and Dutch Jews*, נוה צדק, *Navay Tzadek, i. e.* dwelling-place of juſtice or of charity, an eſtabliſhment ſituated in Mile-end, Old-town, of wider extent than that of Beth-holem, which aroſe from the philanthropic exertions of Benjamin and Abraham Goldſmid, eſqrs. who, in 1795, commenced a collection among their friends for the purpoſe of relieving the poor of the claſs denominated German Jews. The ſums contributed by Jewiſh and Chriſtian benevolence enabled them, in 1797, to purchaſe 20,000*l.* imperial annuities of three per cent. and by accumulation of intereſt and increaſe of donations, the aggregate ſum, in 1806, amounted to the value of 22,000*l.* ſtock, at the current price of that period. After previous deliberation it was agreed to erect an hoſpital for the reception and ſupport of the aged poor, as well as for the education and induſtrious employment of both ſexes. Ten thouſand pounds of three per cent. conſols bank-annuities were purchaſed, and this ſum, together with the former ſtock, was transferred to truſtees as an inviolable fund for its endowment, yielding 900*l.* per annum. In February, A.D. 1806, the freehold on which the hoſpital was afterwards erected, was purchaſed for 2300*l.* ; the houſe was completed and opened in June, 1807, for the reception of five aged men, five aged women, 10 boys, and eight girls. The adjoining freehold was alſo purchaſed for 2000*l.* in which it is further propoſed to erect an enlargement of the hoſpital for the admiſſion of an additional number of patients. Two gentlemen, *viz.* Dr. Myers, and Mr. Van Oven, offered to fulfil the duties of phyſician and ſurgeon gratis : 25 guineas conſtitute a governor for life : 10 governors are competent for buſineſs ; and at general meetings held in March, officers are elected, and alſo a houſe-committee of 24, and two auditors. This inſtitution is under the management of a general committee of 12 governors, which attends at the hoſpital on Sunday, weekly. None are conſidered as proper objects of this charity who do not belong to one of the three eſtabliſhed ſynagogues of German Jews in London ; nor can any be admitted under 55 years of age. The boys are admitted from 10 to 13 years of age, and maintained till the expiration of their apprenticeſhip. The girls are admitted from 7 to 10 years of age. The preſent officers are, a patron, preſident, two vice-preſidents, two treaſurers, a phyſician, ſurgeon, ſolicitor, and ſecretary.

Hospital, *Lock,* (*lock* being derived from *loke*, a houſe for lepers,) near Hyde-park corner, was inſtituted in the year 1746, for the relief of venereal patients only. Every gentleman ſubſcribing five guineas a year, or upwards, ſhall be a governor of this hoſpital, and whoever gives a benefaction of fifty-pounds at one time becomes a governor for life. This hoſpital is under the direction of a preſident, ſeven vice-preſidents, two treaſurers, and a committee of the governors, who meet every Thurſday for the buſineſs of the inſtitution. It is attended by a phyſician, two ſurgeons, and two viſiting apothecaries. The officers are a chaplain, houſe-ſurgeon, ſecretary, collector, and matron. By a report circulated in November 1809, it appears that the number of patients perfectly cured to that time amounted to 30,577 ; many perſons of both ſexes were thus reſtored to their families, who might otherwiſe have lingered out a loathſome and miſerable exiſtence ; many abandoned characters were reclaimed by the religious inſtructions afforded them ; and the progreſs of the contagious diſeaſe, dreadful to the ſufferer and deſtructive to poſterity, was materially arreſted. The *Lock Aſylum* is an appendage to the hoſpital, which provides for females after cure, who have no means of accommodation and ſupport when they leave the hoſpital, and who might otherwiſe be urged by neceſſity to return to that courſe of vice and infamy which they have abandoned. This inſtitution has been found of ſingular utility. The number of women admitted to this aſylum from July 1787 to Lady-day 1809, has been five hundred, many of whom have been preſerved from ruin, and rendered uſeful members of the community. The aſylum is under the ſuperintendance of a patron, preſident, three vice-preſidents, a chaplain, and ſecretary.

Hospital, *London,* in Mile-end road, was inſtituted in 1740, principally by the inſtrumentality of John Harriſon, eſq., its firſt ſurgeon, and incorporated in 1759, 32 Geo. II. This hoſpital, which was firſt founded in Preſcott-ſtreet, Goodman's fields, is now ſupported, in a very large and commodious building, by voluntary contributions, for the relief of all ſick and wounded perſons.

The in-patients are ſupplied with advice, medicine, diet, lodging, waſhing, and every other kind of comfortable aſſiſtance : the out-patients receive medicines and advice daily. None are admitted into the hoſpital with infectious diſtempers, or the venereal diſeaſe, or who are aſthmatic or conſumptive, or deemed incurable or improper for admiſſion by the phyſicians or ſurgeons ; but ſuch perſons may be relieved as out-patients. The average number of patients in this hoſpital at any one time is about 180, but its wards are 18 in number, and would contain nearly 400. This hoſpital has ſubſiſted during a period of 68 years, and in that time has relieved 507,802 to Jan. 1, 1809, which is an average of 7466 perſons in each year. During the year 1809, the in-patients amounted to 1406, and the out-patients to 877. The governors, in 1807, made an intereſting appeal to the benevolence of the public, and with ſuch ſucceſs, that the committee were enabled immediately to diſcharge the hoſpital debts, amounting to 3824*l.* 10*s.* 11*d.* In conſequence of farther liberal contributions, they began with the admiſſion of 37 in-patients, and they have ſince been progreſſively augmenting the eſtabliſhment, according to the extent of their power. The funds of the hoſpital, at the cloſe of the year 1808, conſiſted of 3000*l.* bank-ſtock, 225*l.* 5 per cent. navy ſubſcription of bank on bank-ſtock, 1804 ; 200*l.* 4 per cent., 65,292*l.* 12*s.* 2*d.* 3 per cent. conſols ; 9779*l.* 9*s.* 8*d.* 3 per cent. reduced ; 400*l.* 3 per cent. O.S.S. ann. ; 450*l.* 3 per cent. New ditto. ; 310*l.* India ſtock ; 571*l.* 16*s.* South Sea ſtock ; 500*l.* 3 per cent. 1726 ; 50*l.* bond ; 338*l.* 8*s.* 8*d.* caſh ; land and houſes near the hoſpital *ad valorem.*

The charity is under the government and direction of a preſident, five vice-preſidents, a treaſurer, and of ſuch perſons, who, by giving a benefaction of thirty guineas or more at one time become governors for life ; or who ſubſcribe five guineas or more per annum. A houſe-committee of thirty governors is annually appointed at the quarterly court, in December, one of whom is choſen chairman ; and they meet every week at the hoſpital to tranſact the neceſſary buſineſs.

There is alſo a committee of accounts, conſiſting of twelve governors, appointed at the quarterly court in June for one year, who meet there quarterly to examine and audit the bills and accounts, and a medical committee alſo conſiſting of twelve governors, elected annually at the court in December, who examine all the medicines and drugs. The management of the houſe is inſpected by two governors, appointed viſitors by the houſe-committee. Three phyſicians and three ſurgeons attend this hoſpital : the officers are a chaplain, apothecary, ſecretary and receiver, ſteward and matron. Every governor is entitled to ſend one in-patient at a time, and four out-patients. Subſcribers, that are not governors, may ſend out-patients ; the day of admiſſion is Tueſday.

The "Samaritan Society" is an appendage to the London Hoſpital, inſtituted A.D. 1791, for the relief and prevention of various circumſtances of diſtreſs, not within the proviſion of public hoſpitals, and depending upon donations and bequeſts. Annual members contribute one guinea, and benefactions of five guineas conſtitute members for life. The affairs of this ſociety are conducted in the conſulting-room of the hoſpital, allotted in 1792 for its meetings and buſineſs, by a committee of nineteen for general purpoſes ; a committee of ſeven for public communications and correſpondence ; ſeven auditors, a treaſurer, an almoner, a ſecretary, and collector.

Hospital, *St. Luke's, for Lunatics*, in Old-ſtreet Road, was inſtituted in 1751. The new extenſive building for this hoſpital was erected at an expence of 5000*l.* raiſed by voluntary contributions, upon leaſehold ground belonging to St. Bartholomew's hoſpital : the leaſe is held for a term of 40 years, renewable every fourteen years, on payment of a fine of 200*l.* and at the yearly rent of 200*l.* It was completely finiſhed at the cloſe of the year 1786 ; and on the 1ſt of January, 1787, the patients were removed into it. The houſe accommodates 300 patients, who are diſtinguiſhed by two liſts or claſſes, 200 on the curable liſt, and 100 on the incurable liſt.

It appears, from the printed ſtate of this hoſpital, that the number of patients received into it from the opening on the 30th of July, 1751, to the 21ſt of April, 1809, incluſive, amounted to 9042, of whom thoſe diſcharged uncured and received again at 7*s.* a week, are 323. Of theſe 3915 have been diſcharged cured, and 3101 diſcharged uncured, 783 diſcharged as idiots, 748 died, and 251 taken away at the deſire of friends. Of the incurable, 56 were taken away at the deſire of friends, 145 died, and 18 were cured.

The property of the hoſpital conſiſts of the building and premiſes in Old-ſtreet; 64,000*l.* conſol. 3 per cent. annuities; 38,100*l.* reduced annuities; 22,500*l.* Old South Sea annuities; 5000*l.* 4 per cent. annuities; 220*l.* New South Sea annuities; 1000*l.* reduced annuities; divers legacies unreceived, beſides contingent and reverſionary legacies; an annuity of 5*l.* 5*s.* and another of 100 guineas by the late Samuel Whitbread, eſq. The income of this property is conſiderably increaſed by caſual benefactions and legacies, and by caſh received from the board of incurables, all which, with a balance in hand, amounted, in 1808, to 9053*l.* 16*s.* 3*d.*, and the expenditure amounted in the whole to 7934*l.* 17*s.* 3*d.*

Perſons paying the entire ſum of twenty-guineas or upwards, or paying ſeven guineas at leaſt, and ſigning an agreement to pay 3*l.* 18*s.* yearly, for the four next ſucceeding years, are admitted governors of this hoſpital; nine of whom conſtitute a general court, held on the third Wedneſday in February, every year. At this court one preſident, four vice-preſidents, a treaſurer, a general committee, phyſician, ſurgeon, reſident, apothecary, ſecretary, maſter, matron, and accountant, ſhall be elected for the enſuing year. The general committee conſiſts of the preſident, vice-preſidents, and treaſurer, and of five governors, named as leſſees in the leaſe of the ground on which the hoſpital is built, and of all perſons who pay in their own right 100*l.* or upwards, who are ſtanding members of it, and of ſuch other thirty governors reſident in the bills of mortality as are elected at the court in February.

The general committee meets monthly or oftener, if neceſſary, and is empowered to tranſact all the neceſſary buſineſs of this hoſpital, and to appoint a houſe-committee and ſub-committees. The phyſician and ſurgeon attend on every committee day, and one other day in the week, and as often as occaſion requires. The reſident apothecary is precluded from any other practice. No fees are taken by any officer. Patients are admitted into this hoſpital according to the order of time in which their petitions, previouſly ſigned by a governor, have been delivered to the ſecretary, and without any expence, except that the pariſh poor ſhall provide their bedding, which they may take away at their diſcharge. But no perſon can be admitted into this hoſpital who is not poor and mad; or who hath been a lunatic more than twelve calendar months; or who hath been diſcharged uncured from any other hoſpital for the reception of lunatics, or who is troubled with epileptic or convulſive fits; or who is deemed an idiot; or who is infected with the venereal diſeaſe; nor any woman with child; nor any child under the age of twelve, nor any perſon above the age of ſeventy years. Beſides a petition, the governors require two printed certificates; one teſtifying the above particulars, ſigned by the miniſter and churchwardens, or overſeers of the poor of the pariſh or place where the propoſed patient reſides; and the other to the ſame purpoſe, ſigned by ſome phyſician, ſurgeon, or apothecary, who hath viſited ſuch patient; which ſignatures muſt be atteſted upon oath.

Upon notice being ſent from the committee for the patient to be brought for examination, there muſt be left in writing with the ſecretary, within three days afterwards, the names, buſineſs, and place of abode of two ſubſtantial houſekeepers, reſiding within the bills of mortality, who muſt be preſent preciſely at the hour when the patient (not being pariſh-poor, or receiving alms or ſupport from any public body or community) is to be admitted upon the payment of three pounds; and if ſuch patient be pariſh-poor, or has received alms or ſupport from any public body or community, then upon the payment of ſix pounds, and to enter into a bond of one hundred pounds to take away the patient when diſcharged by the committee; which ſums of three pounds and ſix pounds are not returnable unleſs the patient dies or is diſcharged within one month after admiſſion.

It is alſo provided, that the general committee may receive immediately into this hoſpital any patient who ſhall have been diſcharged cured, in caſe ſuch patient relapſe within two months; and that ſuch patients who have been diſcharged uncured, not exceeding 100, ſhall be admitted by rotation; on condition of the payment of ſeven ſhillings per week for each, till the charity ſhall be enabled to leſſen that expence. The patients are not expoſed to view; but their friends are allowed to viſit them every Wedneſday morning.

Hospital, *Lying-in.* There are ſeveral hoſpitals of this kind in the cities or ſuburbs of London and Weſtminſter.

The *Queen's* lying-in hoſpital was founded in 1752 for the purpoſe of receiving poor pregnant women, as well married as unmarried, in ſeparate wards, and alſo of attending them at their own habitations, within a limited circuit. It is now fixed at a houſe in Bayſwater; and the government of the charity has been veſted in a preſident, four vice-preſidents, a treaſurer, and a committee of eighteen governors. An annual ſubſcription of three guineas conſtitutes a governor, entitled to recommend one in-patient, two to be delivered at their own habitations, and ſix for advice; and a ſubſcription of 31 guineas at one payment, entitles to the recommendation of one in-patient, ſix at their own habitations, and twelve for advice, yearly. It is computed that upwards of 45,000 women have received the benefit of this hoſpital in its reſpective branches.

Quarterly meetings are held at the hoſpital; and the committee meet every Tueſday. This hoſpital was renovated in October 1809, and under the active exertions of its preſident the duke of Suſſex, has now a fair proſpect of permanent utility. Her majeſty is patroneſs, and it is under the care of a conſulting phyſician, and phyſician in ordinary, a ſurgeon and man-midwife, an apothecary and ſecretary, a matron, nurſes, and collector.

The *Middleſex* hoſpital for ſick and lame, and lying-in married women, in Mary-le-bone Fields, was inſtituted for the firſt deſcription of patients in 1745, and for the ſecond in 1747; and for patients afflicted with cancer in 1792. It is under the direction of a patron, a preſident, 12 vice-preſidents, two treaſurers, and a committee of the governors; the qualification for a governor is an annual ſubſcription of three guineas, and of a governor for life 30 guineas at one payment. A quarterly general court is held four times in the year. All general courts and weekly boards may appoint committees for carrying on the buſineſs: 24 governors are appointed for a weekly board to meet every Tueſday; and 12 for a medical committee, including the phyſicians, man-midwife, and ſurgeons, to meet every Saturday. The preſident, vice-preſidents, treaſurers, chaplain, phyſicians, man-midwife, ſurgeons, apothecary, ſecretary, collector, and matron, are elected at a quarterly or ſpecial general court. The lying-in ward in this hoſpital has no communication with thoſe of the ſick and lame. The patients are viſited by three phyſicians, an accoucheur, and three ſurgeons, beſides the phyſician and ſurgeon of the cancer-ward. The domeſtic officers are a chaplain, ſecretary, apothecary, and matron, who reſide in the houſe, have ſalaries, and are provided with lodging, waſhing, and board. The houſe-ſurgeon alſo reſides in the hoſpital, under certain ſtipulated regulations. A ſufficient number of midwives to attend women at their own habitations is provided. The day for admiſſion of patients is Tueſday.

The *Britiſh* lying-in hoſpital for married women, in Brownlow-ſtreet, Long-acre, was inſtituted in 1749. This hoſpital is governed by a preſident, four vice-preſidents, a treaſurer, and a committee of 15 governors, who meet every Friday to receive the women recommended, and to direct the ordinary affairs of the houſe. The qualification of an annual governor is a ſubſcription of five guineas or upwards per annum, and of a perpetual governor a ſingle payment of 40 guineas, each of whom may preſent two women in the year. This hoſpital is occaſionally viſited by three phyſicians, and one ſurgeon; and it is provided with an apothecary, chaplain, ſecretary, matron, and midwife, ſix nurſes, and 62 beds. Female pupils, being widows or married women, not leſs than 25 years of age, and of approved character, are permitted to attend this hoſpital, for inſtruction in midwifery, and have a right to ſtay in the hoſpital ſix months. They are to board in the hoſpital, and dine at the ſteward and matron's table; and on leaving the hoſpital to receive certificates of their qualification. The expences of inſtruction and board are ſettled by a general court. The ſtock of this charity in the public funds amounts to 2092*l.* 10*s.* and its expenditure is about 1100*l.* a-year, for which they have the dividends of the above-mentioned ſtock, and annual ſubſcriptions of about 900*l.* per annum, beſides benefactions and legacies, and board of women, who reſide in the hoſpital before and after the period of three weeks, allowed for their lying in and recovery, and pupils. The committee of this hoſpital have preſerved an account of thoſe who have died, from which it appears that in the firſt 10 years of the inſtitution one woman died in 42; in the fifth 10 years, one died in 288; in the ſixth and laſt 10 years, one in 216; and from the 20th of September, 1806, to the 25th of March, 1808, not one woman died out of 501. In the firſt 10 years one child died in 15; in the fifth 10 years one died in 77; and in the laſt nine years and a quarter, one died in 92. The proportion of boys to girls born is about 18 to 17; of ſtill-born, about one to 25; of women bearing twins, one to 84, the whole number being 342. If ſimilar tables were preſerved by other inſtitutions of a like kind, they would furniſh uſeful data in calculations relating to population and political economy.

The city of London lying-in hoſpital for married women, in the City road, was inſtituted in 1750. The government of this hoſpital is referred to a preſident, 12 vice-preſidents, and a treaſurer, choſen annually from among the governors and ſelect committees. The ſubſcription of 30 guineas conſtitutes a governor for life; thoſe who ſubſcribe five guineas, or three guineas per annum, are governors ſo long as they continue their ſubſcription. Each governor for life has the privilege of relieving eight patients in a year, and of having two of them on the books at a time. Subſcribers of five guineas may relieve five patients, and thoſe who ſubſcribe three guineas may relieve two patients. A double ſubſcription acquires a double privilege. The affairs of the hoſpital are conducted by a committee of 24, of whom the treaſurer is one, who meet at the hoſpital every Wedneſday. Four of them preſide, by rotation, for two ſucceſſive months, at the public baptiſms; and at the Midſummer court ſix retire, and ſix are elected to ſupply their places. The officers, beſides the preſident, vice-preſidents, and treaſurer, are a preacher and a chaplain, four phyſicians, two of whom practiſe more particularly in midwifery, a ſurgeon, an apothecary, a ſecretary, and a matron, who is a ſkilful midwife, and reſides in the houſe, ſuperintending the nurſes and ſervants, and the whole domeſtic economy. The property of this hoſpital conſiſts, beſides its leaſehold premiſes, of 11,000*l.* three per cent. conſol. bank annuities, and 10,000*l.* reduced annuities, and two annuities of 5*l.* and another, during the life of the duke of York, of 25*l.* The whole annual expenditure amounts in general to about 1500*l.* ſupplied by the dividends on its capital, legacies, ſubſcriptions, and collections at the chapel, and at the anniverſary meeting. Pupils are allowed to be received who pay to the charity for their lodging and board during their ſtay in the hoſpital, beſides ſome fees to the matron and medical officers. The preſent building, at the entrance of the City-road, was begun in October, 1770, and completed at an eſtimated charge of 3500*l.* ſo as to be open for the reception of patients in April, 1773. It was licenſed for the public reception of pregnant women, purſuant to an act of parliament, paſſed in the 13th year of the reign of George III. (13 Geo. III. c. 82.) This hoſpital, which in 1809 had ſubſiſted 59 years, has relieved, in that time, 24,902 poor married women, of whom 25,196 children have been born. During the year, ending Lady-day, 1809, their number was 413, and the male children born were 227, and the females 186. Out of the whole number, 292 women have been delivered of twins, and two women had three children at the birth.

The Weſtminſter new lying-in hoſpital, on the Surrey ſide of Weſtminſter-bridge, was inſtituted by ſubſcription in the year 1765. It is governed by a preſident, four vice-preſidents, a treaſurer, and a committee of governors. The qualifications of governors are various. An annual ſubſcription of three guineas entitles to recommend three in-patients, three out-patients at their own habitations, and any number for advice, and to vote at elections. An annual ſubſcription of five guineas entitles to recommend five in-patients, five at their own habitations, and any number for advice, with a vote at elections, &c. A ſubſcription of 30 guineas conſtitutes a governor for life, entitled to recommend yearly three in-patients, three at their own habitations, and any number for advice, and to vote at elections, &c. The privilege of recommending patients is extended in proportion to the ſubſcription. There are four quarterly meetings at the hoſpital in the year; and a weekly board, conſiſting of any number of the committee annually appointed in January, is held at the hoſpital every Tueſday, for the general affairs of the inſtitution. The phyſicians practiſing midwifery are allowed to take pupils, two of whom may reſide in the houſe for three months, and board for a ſtipulated price, at the matron's table: female pupils are alſo allowed upon the ſame terms. One of the phyſicians attends at the hoſpital every Tueſday and Friday, from 11 till 12 o'clock, to give advice in the ſeveral diſorders incident to child-bearing and infancy. It is attended by two phyſicians and accoucheurs, a phyſician extraordinary, an apothecary, and a ſurgeon. The officers are a ſecretary, chaplain, and matron or midwife, conſtantly reſident in the hoſpital, ſuperintending the nurſes and ſervants, &c.

In connection with lying-in hoſpitals, we may mention two or three inſtitutions for the purpoſe of delivering poor married women at their own habitations. An uſeful inſtitution of this kind dates its riſe in the year 1757, and is under the direction of a preſident, ſix vice-preſidents, a treaſurer, ſecretary, and governors. An annual ſubſcription of one guinea, or more, or a benefaction of 10 guineas or upwards, conſtitutes a governor. An annual governor for one guinea may recommend eight objects within the year, and in proportion for a larger ſum, and the governor for life recommends the ſame number annually. This inſtitution is under the direction of a preſident, ſix vice-preſidents, a treaſurer, a conſulting phyſician, three phyſicians and accoucheurs. The ſubordinate officers are a ſecretary and collector. The midwives are 27 in number, who reſide in all parts of the town. During the firſt 50 years of this ſociety the deliveries amounted to 178,983; and in the year 1808 to 4100. Another inſtitution of the ſame kind, called the "Benevolent inſtitution, for the ſole purpoſe of delivering poor married women at their own habitations," was eſtabliſhed in January, 1780. It is ſupported and conducted on a plan ſimilar to that of the inſtitution laſt mentioned. The officers are a preſident, ſeven vice-preſidents, a treaſurer, a phyſician, ſecretary, and 40 midwives. Another ſociety of a like kind was formed at Tottenham, near London, in Auguſt, 1791.

Hospital, *Magdalen*, in St. George's Fields, was inſtituted in the year 1758, for the relief and reformation of proſtitutes. The queen is patroneſs of this charity; it is under the direction of a preſident, ſix vice-preſidents, treaſurer, and committee of 32 governors. It is attended by a phyſician, two ſurgeons, and two apothecaries. The domeſtic officers are a chaplain, ſteward, ſecretary, matron and aſſiſtant, and meſſenger and aſſiſtant. Twenty guineas conſtitute a governor for life, and an annual ſubſcription of five guineas is a qualification for a governor for one year, which ſubſcription, when it amounts to 25 guineas, qualifies a governor for life. Four general courts are held in every year; and at the general court in April, the committee, and all officers, except the preſident, are elected. The committee, conſiſting of 32 governors, meet at the hoſpital every Thurſday; and two of them, in rotation, attend at the chapel every Sunday at morning and evening ſervice, when a collection is made previouſly to admiſſion. This hoſpital was firſt eſtabliſhed in Preſcott-ſtreet, Goodman's-fields; and the new building in Blackfriars' road, St. George's-fields, was opened in the year 1758. An act of incorporation was granted by parliament in 1769. The new hoſpital is calculated to receive about 80 penitents every year; and during the period of its ſubſiſtence more than two-thirds of the women who have been admitted have been reconciled to their friends, or placed in honeſt employments or reputable ſervices. A very conſiderable number have been married, and have become reſpectable members of ſociety; but ſome, as might naturally be expected, have relapſed into their former errors. A probationary ward has been inſtituted for the young women on their firſt admiſſion; a ſeparation of thoſe of different deſcriptions and qualifications has been eſtabliſhed; and apartments have been fitted up in the lodge for the reſidence of the chaplain and his family, that he may with the greater facility continue to devote his time and attention to the inſtruction of the women. Each claſs is entruſted to its particular aſſiſtant, and the whole is under the inſpection of the matron. It appears by a ſtatement, extracted from the books of the hoſpital, that from the 10th of Auguſt, 1758, to the 7th of January, 1808, 3865 women have been admitted, and that of theſe 2532 have been reconciled to their friends, or placed in ſtations of reputable ſervice or employment; 102 have been lunatic, or troubled with fits or incurable diſorders; 72 have died; 573 have been diſcharged at their own requeſt; and 506 diſcharged for improper behaviour.

An inſtitution, in aid of the Magdalen hoſpital, was founded in the year 1807, under the appellation of the "Female Penitentiary," the external management of which was confided to a committee of 24 gentlemen, together with a treaſurer, a ſecretary, and aſſiſtant; and the interior to a committee of 24 married ladies. The eſtabliſhment was fixed at Cumming-houſe, Pentonville, Iſlington, by the purchaſe of a long leaſe of the houſe and adjoining ground, to which has been ſince added a contiguous building for a temporary infirmary. The penitentiary-houſe is divided into ſix apartments; a temporary ward for caſes of emergency, two probationary wards, wards for perſons fully admitted after probation, a ward for diſeaſed ſubjects, a ſick ward, and a refractory ward: a part of the houſe is appropriated to divine ſervice. This inſtitution is attended gratis by a phyſician, ſurgeon, and apothecary. The matron reſides in the houſe.

Hospital, *St. Peter's*, at *Newington Butts*, was erected by the company of Fiſhmongers, by virtue of letters patent of king James I. in 1618, for the reception of divers of their poor members, who had penſions bequeathed them by the wills of ſome of their company.

Hospital, *Royal*, for diſabled ſoldiers, commonly called *Chelſea-College.*

The building was originally begun by king James I., in the 5th year of his reign, for a college to conſiſt of a number of learned divines, who, being furniſhed with books and all means of ſubſiſtence, might devote their time to the ſtudy and teaching of controverſial divinity, eſpecially thoſe points in diſpute between the churches of England and Rome. Accordingly he incorporated a provoſt and fellows, by the title of king James's college, in Chelſea. The corporation was endowed by his letters patent, with the reverſion of certain lands in Chelſea, and authorized alſo to receive of his loving ſubjects lands not exceeding, in the whole, the yearly value of 3000*l.* Every thing being previouſly ſettled, king James laid the firſt ſtone of the intended college; but for want of money the building went on ſlowly; and, at length, before an eighth part of the model was executed, it ſtood ſtill. In this ſtate it remained for ſeveral years: but in the year 1616 the king ſent letters to the archbiſhop of Canterbury, requiring him to ſtir up the clergy in his province to contribute towards it; in conſequence of which collections were made in ſeveral pariſhes of England, but their produce was ſmall, and was ſwallowed by the fees and collectors. The corporation, however, though the building was ſtopped, was nominally kept up during the life of king James I. The troubles under king Charles I. occaſioned all thoughts of completing the work to be laid aſide. After the reſtoration, king Charles II. erecting a convenient hoſpital for the reception of ſick, maimed, and ſuperannuated ſoldiers, converted the unfiniſhed buildings of this college to that uſe; whence the hoſpital has retained the title of the "College." It was founded by king Charles II., carried on by king James II., and finiſhed in the reign of king William and queen Mary, by ſir Chriſtopher Wren. The whole expence of this ſtructure amounted, as it is ſaid, to 150,000*l.*, and the extent of the ground is above forty acres.

The building is very ſpacious and magnificent: its figure is a Π; the middle or front part whereof conſiſts of a chapel and hall; the other two lines, being four ſtories high, are divided into wards or galleries, two in each ſtory; containing each twenty-ſix diſtinct apartments for the foot ſoldiers. At each of the four corners of the main building, there is a pavilion, in one whereof is the governor's lodging, and the council-chamber; the other being lodgings for ſeveral of the officers of the houſe. Beſide the main building, there are four wings or out-buildings; one for the infirmary, another for ſeveral officers of the houſe, another for old maimed officers of horſe and foot; and the fourth for the baker, laundreſs, &c. The number of penſioners in the houſe is, in general, eſtimated at about 400, beſides the officers and ſervants in the houſe: the out, or extraordinary penſioners, are alſo very numerous; and theſe, upon occaſion, do duty in the ſeveral garriſons, from whence draughts are made for the army, &c. Their allowance is 7*l.* 12*s.* 6*d.* a year each.

The penſioners are all provided with cloaths, diet, waſhing, lodging, and firing; and have a weekly allowance of 8*d.* for their pocket-money.

The qualifications required to be admitted of this body, are, that the candidate bring a certificate from his ſuperior officer that he has been maimed or diſabled in the ſervice of the crown; or that he has ſerved the crown twenty years, which muſt be made appear by muſter-rolls.

To defray the charges of this hoſpital, there is a conſiderable ſum paid yearly out of the poundage of the army; beſide one day's pay of each officer, and each common ſoldier, every year, which, in time of war, amounts to a very conſiderable ſum. In caſe of a deficiency, it is ſupplied by parliament.

For the adminiſtration of this hoſpital there are commiſſioners, a governor, whoſe ſalary is 500*l.* *per annum*, a lieutenant-governor with 400*l.*, a major with 270*l.*, an adjutant with 100*l.*, two chaplains with 100*l.* a-year each, a phyſician and ſurgeon, whoſe ſalaries are 100*l.* a-year each, beſides ſurgeon's mates and apothecary, a treaſurer, who is the paymaſter-general of the land-forces for the time being; and his deputy and clerk, ſecretary and regiſter and clerks, agent and pay-maſter to the out-penſioners and his clerks, comptroller, ſteward, houſe-keeper, organiſt, clerk of the works, &c. &c.

Hospital, or *Corporation*, *Scots*, a charitable inſtitution which commenced in 1665 by the voluntary aſſociation of reſpectable merchants, tradeſmen and others, and which obtained a charter of incorporation by letters patent under the great ſeal of England, bearing date the 30th of June 1665. By theſe, the perſons deſcribed in the charter were empowered to erect an hoſpital in the city and liberty of Weſtminſter, for the maintenance of old or decayed artificers of the Scottiſh nation, and for training up their children to handicraft employments. In 1673 this corporation was enabled to erect a hall, with ſix adjoining tenements, for fulfilling the purpoſe of the charity, in Blackfriars. Afterwards it became neceſſary to apply to the crown for an enlargement of the numbers, powers, and privileges of the corporation. Accordingly new letters patent were iſſued, bearing date the 16th of November, 1676, by which 33 aſſiſtants were added to the former eight governors; liberty was granted to eſtabliſh their hoſpital either in London or Weſtminſter; and they were empowered to purchaſe and to hold lands to the yearly value of 500*l.*, by the name and ſtyle of "The Maſter, Governors, and Aſſiſtants of the Scottiſh Hoſpital, of the Foundation of king Charles II." The deſign of an hoſpital, however, was afterwards abandoned; and in its place was ſubſtituted the wiſer mode of aſſiſting and relieving the poor objects at their own habitations. The charter of 1676 having been found inſufficient by its proviſions to render the inſtitution ſufficiently extenſive in its beneficial effect, application was made to his preſent majeſty for a new charter of incorporation, which was obtained, bearing date the 28th of November, 1775; by which the corporation is re-eſtabliſhed under the ancient name and ſtyle of "The Scottiſh Hoſpital of the Foundation of Charles II.;" and the government veſted in a preſident, ſix vice-preſidents and a treaſurer, to be elected annually on St. Andrew's day, or the day after, and the number of governors left unlimited. A committee is alſo choſen on the ſame day, conſiſting of 20 governors, beſide the preſident, vice-preſidents, and treaſurer, who are of the committee, for conducting the affairs of the corporation. The officers of the ſociety are a chaplain and ſecretary. By the charter there muſt be five general courts held every year; and the committee meet on the ſecond Wedneſday in every month, at the hall of the corporation in Crane-court, Fleet-ſtreet, to receive the petitions of the patients recommended by the governors, and in order to diſtribute the charity. A donation of 10 guineas conſtitutes a governor for life; and a ſubſcription of one guinea or upwards, annually, qualifies to be an annual governor. In conformity to a bye-law, it is the practice, in order to form a capital, to inveſt, in ſome one of the public funds, one-half of every donation of 1 guineas and upwards to 20, and the whole of every donation of this laſt amount, or beyond it. The annual ſubſcriptions, and a moiety of the lower donations, are applied towards the regular monthly expenditure. Every governor, whether annual or for life, has the privilege of recommending one, and only one, diſtreſſed object for relief. This inſtitution may be juſtly denominated an "Hoſpital of Out-Patients;" the objects of it being ſupported and relieved by weekly, monthly, or quarterly allowances in money, and with medical aſſiſtance and advice at their own habitations; and ſuch of them as are deſirous of returning to their native country for the benefit of their health, or to ſpend the remainder of their days with their relations and friends, have their paſſages by ſea paid, and money advanced to ſupply their immediate wants, by which they have not only the benefit of an hoſpital and work-houſe, without the diſagreeable circumſtances attending them, but all the comforts of their families and friends reſerved for them.

The number of poor, lame, and ſickly perſons relieved, and paſſages to Scotland paid for, by the hoſpital, annually for five years, have been as follows:

For the year	1803	to St. Andrew's day	1418
For ———	1804	to do.	1598
For ———	1805	to do.	1258
For ———	1806	to do.	1610
For ———	1807	to do.	1602

Hospital, *Small-Pox*, or hoſpital for relieving poor people afflicted with the ſmall-pox and for inoculation, was inſtituted by voluntary ſubſcription in the year 1746. The object met with very general encouragement, and ſeveral houſes remotely ſituated from one another, were engaged in ſubſerviency to the deſign. This hoſpital afterwards conſiſted of two houſes, at a due diſtance from each other, in airy ſituations. A houſe for preparing patients for inoculation was erected at Pancras, and that for receiving them when the diſeaſe appears, and for accommodating patients who have it in the natural way, was then in Cold-bath fields. The new building at Battle-bridge St. Pancras, was finiſhed and opened at Michaelmas 1767, for the reception of patients before inoculation. The whole expence of the building, and its accidental charges, amounted to 8955*l.* 19*s.* 1*d.* In December 1767 there were 300 patients for inoculation in the hoſpital. The hoſpital in Cold-bath fields requiring a general repair, and the governors being poſſeſſed of freehold ground at Pancras, on which the inoculation hoſpital ſtood, and where they had ſufficient room for a new building, determined to erect a new edifice in the room of the other, which needed repair. Accordingly in

1792 a plan was obtained, and a ſpecial committee was appointed to conduct the buſineſs. It was actually begun in May 1793, and completely finiſhed in June 1794, and the patients were removed into it in under the direction of the medical officers. The whole ſubſcription for this purpoſe amounted to 3971*l.* 18*s.* 8*d.*; and the building charges amounted to 761*l.* 3*s.* 2*d.* beyond that ſum. A new ſet of rules was framed, and one apothecary and one matron were conſtituted to take the direction of both houſes, under the ſuperintendance of the phyſician. Soon after the practice of vaccination became prevalent, Dr. Woodville, phyſician of the hoſpital, firſt introduced it Jan. 21ſt, 1799, and adopted it very generally during the following year, thus greatly aſſiſting Dr. Jenner in his reſearches and experiments; and in the ſpace of three years from that time, 9000 were vaccinated, without any complaint of unſucceſsful practice. In 1801, their number increaſed to 11,800, of whom 2500 were afterwards teſted by variolous inoculation; and the progreſs was ſo rapid that 4290 were vaccinated in 11 months. In 1802 the number of vaccinated patients had increaſed to 13,715; and no failure of ſucceſs appeared. After this time the new practice ſeems to have declined in reputation, for in the following year only 2802 were vaccinated at the hoſpital. In 1806, Dr. Adams having ſucceeded the deceaſed Dr. Woodville in the office of phyſician, vaccination was ſlowly recovering from its depreſſion, and from the monthly tables of the hoſpital in 1805 it appeared, that the in and out-patients vaccinated amounted to 2096, and thoſe of variolous inoculation to 2638. In 1807 vaccination further declined; but there was no fatality in the hoſpital in the natural diſeaſe during five months. From the report communicated by Dr. Adams to the college of phyſicians, it appears, that 20,324 had been vaccinated by the inſtitution ſince its commencement in 1799, of whom only 18 had afterwards taken the ſmall-pox caſually; and that three years were the critical period at which the greater part of them had taken it. The prejudice, however, againſt vaccination prevailed. During the year 1808, the patients relieved in the caſual ſmall-pox amounted to 132, thoſe for inoculation to 1296, and thoſe of vaccination to 1252; and the total number of theſe, ſince 1799, amounted to 23,197; of caſual patients, ſince the firſt eſtabliſhment, 21,868, and of variolated patients to 47,471; making together 92,536. Dr. Lettſom ſtates, in favour of vaccination, that not more than four have died in 60 thouſand vaccinated patients. (See Cow-*pox*.)

This ſociety is ſupported without charter by voluntary contribution; their property conſiſts of the freehold eſtate at Pancras, containing four acres of land; 8000*l.* in reduced bank annuities, and 9000*l.* conſols, and 38*l.* 7*s.* 2*d.* imperial annuities. The receipts generally amount to about 1400*l.* per annum, and the expences generally exceed that ſum. The king is the patron of this hoſpital; and the eſtabliſhment is governed and conducted by a preſident, ſix vice-preſidents, a treaſurer, phyſician, ſecretary, reſident ſurgeon and apothecary, and matron, a houſe committee of 13 governors, and a committee of ſeven auditors, choſen annually. Thirty guineas conſtitute a governor, and five guineas an annual ſubſcriber; and any double ſubſcription gives a double privilege. Smaller ſums are gratefully received, but give no privilege. Every governor may recommend one patient into each houſe at a time. Two half-yearly courts are held before Midſummer and Chriſtmas. The houſe-committee of 13 meet on the firſt Thurſday in every month to manage the whole concerns of the inſtitution. The phyſician preſcribes, inoculates, and takes the general overſight and direction of the family; the ſecretary receives legacies, donations, ſubſcriptions, &c. and keeps all the accounts and minutes, &c.; the apothecary, who is alſo a ſteward, is reſident at the hoſpital, and keeps an accurate regiſter of the medical tranſactions, aſſiſts the matron reſpecting the proviſions and houſhold direction, and attends all the committees; the matron's office comprehends every thing which is commonly included in that of miſtreſs of a family. No officer can receive any fee on pain of diſmiſſion. Both hoſpitals are plain brick buildings, that for inoculation and the other for the natural ſmall-pox, being contiguous, but entirely diſtinct from one another, and communicating only by a covered paſſage. The airineſs of the ſituation, and the cleanlineſs which is preſerved through both hoſpitals, and the good order maintained by the vigilance of the reſident ſurgeon and the aſſiduous attention of the matron, render theſe hoſpitals well deſerving the notice of every friend to humanity.

Hospital, *Sutton's*. See Chartreuse.

Hospital, *St. Thomas's*, in Southwark, is eſtabliſhed for the ſame purpoſes as that of St. Bartholomew.

It was originally founded an hoſpital by Richard, prior of Bermondſey in 1213, and ſurrendered to king Henry VIII. in 1538; in the year 1551, the mayor and citizens of London, having purchaſed of king Edward VI. the manor of Southwark, including this hoſpital, repaired and enlarged it, and admitted into it 260 poor, ſick and helpleſs objects; upon which the king, in 1553, incorporated it together with thoſe of Chriſt, Bridewell, Bethlem, and St. Bartholomew. This ancient ſtructure, much damaged by time and by fire, was rebuilt by voluntary ſubſcription in the year 1693; and by additional buildings greatly enlarged; in conſequence of which it conſiſted of three beautiful ſquares; to which the governors, in 1732, added a magnificent new building, conſiſting of ſeveral wards, a brew-houſe, and other neceſſary offices, at their own expence. It now conſiſts of four quadrangular courts; in the firſt are wards for women; in the ſecond two chapels, the leſſer for the private uſe of the hoſpital, and the larger parochial; in the ſame court and adjoining to it, are the houſes of the treaſurer, and other officers; in the third court are ſeveral wards for men; the fourth hath alſo wards, hot and cold baths, a ſurgery, theatre, apothecary's ſhop, &c. The number of in and out patients relieved by this hoſpital, at an average of ſix or ſeven years, may be ſtated at 9000, at an expenditure of about 10,000*l.* Thoſe of the laſt year appear by the report of 1811 to have been 8318. The governors of this hoſpital are the lord mayor and court of aldermen, and the number of others, who, on receiving a governor's ſtaff, give a benefaction of 50*l.* or upwards, is unlimited; but it is commonly between four and five hundred. They chooſe their officers and ſervants, who are, a preſident, treaſurer, hoſpitaller or chaplain, beſides the miniſter of the pariſh, who is paid by the hoſpital, three phyſicians, three ſurgeons, apothecary, clerk, receiver, ſteward, matron, butler, and brewer, baker, cook, aſſiſtant and ſervant, an aſſiſtant clerk in the compting-houſe, two porters, four beadles, nineteen ſiſters, nineteen nurſes, nineteen watch-women, a chapel-clerk and ſexton, and one watchman. The houſe contains eighteen wards, and about 485 beds.

Hospital, *Weſtminſter*, or *Public Infirmary*, was inſtituted in the year 1719, at the expence, and by the contribution of ſeveral benevolent individuals, "for the relief of the ſick and needy from all parts." The patient is admitted by a recommendation ſigned by any governor, caſes of accident excepted, which are admitted without recommendation at all hours of the day or night; and ſeveral beds are reſerved for them. A benefaction of 30*l.* or upwards, or of three guineas or more per annum, qualifies the donor to become a truſtee. A board of truſtees meets every Wedneſday morning to tranſact the affairs of the charity; and four quarterly general boards are held for the ſuperviſion of its concerns. The capital of this hoſpital conſiſts in ſeveral funds of 11,500*l.* 15*s.* 4*d.* three per cents. The inalienable capital for the incurables amounts to 21,368*l.* 18*s.* 1*d.* in ſeveral funds of three per cent., and the maintenance, cloathing, and medicines are charged at 20*s.* per week, which does not exhauſt more than one-third of the income appropriated for them. The queen is the patroneſs of this hoſpital; and it is under the direction of a preſident, nine vice-preſidents, a treaſurer, a ſecretary and receiver, three phyſicians, three ſurgeons, and an aſſiſtant ſurgeon.

Beſides the hoſpitals already enumerated, there are royal hoſpitals, ſuch as that at Haſlar, near Portſmouth, for ſick and hurt ſeamen and marines, and the royal hoſpital at Plymouth, and many others, ſupported by the benefactions of private and voluntary contributors, which provide relief for almoſt every ſpecies of diſeaſe or injury. For a particular account of all hoſpitals in London, and all public charities and benevolent eſtabliſhments, for the relief and inſtruction of the poor; ſee a work, the reſult of much inveſtigation and labour, and written with the moſt laudable deſign by A. Highmore, eſq. 1809; entitled, "Pietas Londinenſis; or the Hiſtory, Deſign, and Preſent State of the various Public Charities in and near London."

Hospitals, *Camp*, are either general or regimental.

The general hoſpitals are of two kinds, *viz.* the *flying* hoſpital, attending the camp at ſome convenient diſtance, and the *ſtationary* hoſpital, which is fixed to one place. In the choice of both, it will be better to have them in towns than villages, as the former will afford larger wards, beſides more of other conveniences; theſe wards ſhould be as airy as poſſible.

As to the diſpoſition of hoſpitals, in regard to preſerving the purity of the air, the beſt rule is to admit but few patients into each ward. It will alſo be found a good expedient, when the cielings are low, to remove ſome part of them, and to open the garret-ſtory. The doors and windows may likewiſe be opened, and ventilators uſed to purify the air of every ward. In winter-hoſpitals, the wards are to be warmed with chimnies, and never by ſtoves; for though the latter may warm a large ward better, and at a leſs expence, yet by ſcarce making any draught of air, they will be apt to increaſe its putrid quality; whereas a fire, kept up in a chimney, acts like a conſtant ventilator.

The *general* hoſpital ſhould receive only ſuch ſick as the regimental ones cannot conveniently contain, together with thoſe who cannot be removed with the army. Without this diſperſion of the ſick, the general hoſpital, in bad ſeaſons, would have a greater number than could be well attended; and what is equally, if not more pernicious, it would be too much crowded, by which means the contagion would ſpread, and the mortality be rendered more general.

Regimental hoſpitals are of the greateſt importance, and therefore ſhould be ſupplied with blankets and medicines from the public ſtores, with an allowance alſo for nurſes and other neceſſaries. Nor are they to be maintained in the field only, but alſo in winter-quarters, as there will always be a great many more ſick than can be taken care of in the general hoſpital.

Barns, ſtables, granaries, and other out-houſes, but above all, churches, make the beſt hoſpitals, from the beginning of June to October; for as the greateſt danger ariſes from foul air, which cannot be compenſated by diet or medicine, we may lay it down as a rule, that the more airy and large the hoſpitals are, the leſs danger there is of the ſickneſs ſpreading. Pringle Obſerv. on the Diſeaſes of the Army, p. 104, ſeq.

Hospital, *Fever*, in *Medicine.* See Fever and Typhus.

Hospital *Ship.* See Ship.

Hospital, in *Geography*, an iſland in the river St. Lawrence, Upper Canada, in front of the townſhip of Edwardſburgh, containing about 100 acres.

HOSPITALER, one that entertains and provides for poor people, travellers, &c.

The appellation is chiefly given to certain communities of religious; as, the hoſpitalers of Elſefort in Eſſex, inſtituted to take care of lepers; hoſpitalers of St. John Baptiſt, of Coventry; hoſpitalers of St. Julian; hoſpitalers of St. Leonard, at York, &c.

The religious hoſpitalers generally follow the rule of St. Auguſtine. Moſt of them pretend, that St. Martha was their firſt foundreſs, and choſe her for their patron, becauſe ſhe entertained Jeſus Chriſt at her houſe. Some of them go back to the patriarch Abraham for their founder.

There are alſo hoſpitalers among the military orders; ſuch as the knights of St. Lazarus, and St. John of Jeruſalem.

Hospitalers, *Hoſpitalarii*, more particularly denote an order of religious knights, who built an hoſpital at Jeruſalem, wherein pilgrims were received. To theſe pope Clement V. transferred the effects and revenues of the Templars; whom, by a council held at Vienne, he ſuppreſſed, for their many and great miſdemeanors.

Theſe hoſpitalers were otherwiſe called *Knights of St. John of Jeruſalem*; and are the ſame with thoſe whom we now call the *Knights of Malta.*

Hospitaler, in *Mythology*, is a name which the ancient Romans gave to Jupiter, calling him Jupiter Hoſpes, becauſe they conſidered him as the guardian of hoſpitality.

HOSPITIUM, Inn; a term peculiarly uſed, in our law-books, for an inn of court.

Hospitium is alſo uſed for a little convent, which the religious built for the reception of ſtrangers and travellers of the ſame order, who had occaſion to ſtay with them ſome time.

Moſt of theſe hoſpitia, or inns, in time became fixed convents.

In the middle ages there ſeem to have been no inns or houſes of entertainment for the reception of travellers; and this circumſtance affords a proof that little intercourſe ſubſiſted between different nations. And as hoſpitality is a virtue of the firſt rank among people whoſe manners are ſimple, and who are ſeldom viſited by ſtrangers, it was conſidered at the period to which we now refer as a very important and indiſpenſible virtue; and not as one of thoſe virtues which men may practiſe or not, according to the temper of their minds, and the generoſity of their hearts. Hoſpitality was enforced by ſtatutes, and thoſe who neglected this duty were liable to puniſhment. "Quicumque hoſpiti venienti lectum, aut focum negaverit, trium ſolidorum in latione mulctetur, Leg. Burgund. tit. 38. § 1. Si quis homini aliquo pergenti in itinere manſionem vetaverit ſexaginta ſolidos componet in publico." Capitul. l. vi. § 82. The laws of the Slavi were ſtill more rigorous; they ordained "that the moveables of an inhoſpitable perſon ſhould be confiſcated, and his houſe burnt." They were even ſo ſolicitous for the entertainment of ſtrangers, that they permitted the landlord to ſteal for the ſupport of his gueſt. "Quod noctu furatus fueris, cras appone, hoſpitibus." Rerum Mecleburg, l. viii. a Mat. Jo. Beehr. Lipſ. 1751, p. 50. In conſequence of theſe laws, or of that ſtate of ſociety which made it proper to enact them, hoſpitality abounded while the intercourſe among men was inconſiderable, and ſecured the ſtranger a kind reception under every roof where he choſe to take ſhelter. As the intercourſe among men increaſed, that which was a pleaſure became a burden, and the entertaining of travellers was converted into a branch of commerce.

Hospitium was likewiſe formerly uſed for procuration, or viſitation money. See Procuration.

HOSPODAR, the title borne by the prince of Walachia and Moldavia.

The Hoſpodars of Walachia and Moldavia receive the inveſtiture of thoſe principalities from the grand ſeignior, by a veſt, and a ſtandard which he gives them.

They are ſometimes depoſed by him; though in other reſpects they have ſovereign power within their ſtates.

HOSSAINPORUM, in *Geography*, a principal town of Cotwally, in Bengal; 50 miles N. of Moorſhedabad. N. lat. 24° 57′. E. long. 88° 7′.

HOSSAINPOUR, a town of Hindooſtan, in Oude; 40 miles N.N.E. of Manickpour.

HOSSAMALLY, a town of Hindooſtan, in Guzerat; 25 miles S. of Amedabad.

HOSSAREE, a town of Hindooſtan, in Canara; 10 miles E.N.E. of Barcelore.

HOSSEFIN, or Longrosson, a town of Arabia, in the province of Oman, on the E. coaſt; 30 miles N.N.W. of Sohâr. N. lat. 24° 40′.

HOST, Hospes, which ſome will have thus called, *quaſi hoſtium*, or *oſtium petens*; for *oſtium* was anciently written with an aſpirate; a term of mutual relation applied both to a perſon who lodges and entertains another, and to the perſon thus lodged, &c.

Thus the innkeeper ſays, he has a good hoſt, in ſpeaking of the traveller who lodges with him; and the traveller again ſays, he has a kind hoſt, in ſpeaking of his landlord. It muſt be obſerved, then, that it was the cuſtom among the ancients, when any ſtranger aſked for lodgings, for the maſter of the houſe, and the ſtranger, each of them to ſet a foot on each ſide of the threſhold, and ſwear they would neither of them do any harm to the other. It was this ceremony that raiſed ſo much horror againſt thoſe who violated the law or right of hoſpitality on either ſide; inaſmuch as they were looked on as perjured. Inſtead of hoſpes the ancient Latins called it *hoſtis*, as Cicero himſelf informs us; though, in courſe of time, *hoſtis* came to ſignify an *enemy*; ſo much was the notion of hoſpitality altered.

Host is alſo uſed by way of abbreviation for *hoſtia*, a victim, or ſacrifice, offered to the Deity.

In this ſenſe, hoſt is more immediately underſtood of the perſon of the word incarnate, who was offered up a hoſt, or *hoſtia*, to the Father on the croſs, for the ſins of mankind.

Host, or *Hoaſt*, is chiefly uſed, in the Romiſh church, for the body of Jeſus Chriſt, contained under the ſpecies of bread and wine, which is offered up every day, a new hoſt, or ſacrifice in the maſs.

Pope Gregory IX. firſt decreed a bell to be rung, as the ſignal for the people to betake themſelves to the adoration of the hoſt.

The veſſels wherein the hoſts are kept is called the *cibory*; being a large kind of covered chalice.

HOSTAGE, formed of *hoſt*, and that of *hoſpes*, a perſon left as ſurety for the performance of the articles of a treaty.

When two enemies are on the point of concluding a treaty, or capitulation, it is frequent for them to give hoſtages on each ſide, as ſureties for the execution of what is contained therein.

An hoſtage is either a principal, or an acceſſary, according to the ſtate of the caſe. He is only an acceſſary, when, for inſtance, a prince promiſes fidelity to another, and gives up his ſon, or ſome other great lord, to aſſure his engagement, without any farther ſtipulation. For here, if the prince fail of his word, the hoſtage is no ways accountable for it.

But the hoſtage becomes a principal, when it is expreſsly ſtipulated, that he ſhall be anſwerable for the event: for inſtance, if a city engage to ſurrender, in caſe it be not relieved in ſo many days, and to ſecure the engagement, give hoſtages, theſe hoſtages are what a ſurety is to a creditor for the debt of his principal. So that if the relief do not come, and yet the citizens refuſe to ſurrender, the hoſtages ſtand in their places, become principals, and are liable to be puniſhed for the prevarication of thoſe they are become ſureties for.

A hoſtage given for another perſon becomes free when that perſon dies.

HOSTANA, in *Geography*, a town of Iſtria; 6 miles N of Rovigno.

HOSTAUN, a town of Bohemia, in the circle of Pilſen; 9 miles N.W. of Teinitz.

HOSTE, or l'Hoste, John, in *Biography*, who flouriſhed in the former part of the ſeventeenth century, was born at Nancy, in Lorrain. He was ſome time profeſſor of civil and canon law in the univerſity of Pont-à-Mouſſon; and afterwards occupied the mathematical chair. His talents and induſtry recommended him to the notice and favour of Henry, duke of Lorrain, who appointed him to the poſts of intendant of fortifications, principal engineer, and counſellor of war. He was author of many valuable works connected with his profeſſion, of which the following are the principal: "Le Sommaire et l'Uſage de la Sphere Artificielle:" "Deſcription et Uſage des principaux Inſtrumens de Geometrie:" "Du Cadran et Quarrè." He died in the year 1631. Moreri.

Hoste, or l'Hoste, Paul, was born at Pont-de-Veal, in France, in the year 1652. He entered into the order of the Jeſuits in 1669, and afterwards took ſeveral voyages with the marſhals D'Eſtrèes and De Tourville, and the duke de Mortemart, whom he accompanied, for twelve years, in their naval expeditions. He diſtinguiſhed himſelf by his great ſkill in mathematics, and became profeſſor of thoſe ſciences at Toulon, where he died in 1709. He was author of 1. "Traitès des Evolutions Navales," folio, 1697. 2. "Traitès de Mathematique les plus neceſſaire à un Officier," 3 toms. 12mo. The treatiſe on naval evolutions was enlarged and reprinted in 1727; it is hiſtorical as well as didactic, and contains an account of the principal naval tranſactions during fifty years preceding the time of its firſt publication, illuſtrated with four hundred copper-plate engravings. Annexed to it is a treatiſe "On the Conſtruction of Ships." Moreri.

HOSTEA, in *Botany*, was ſo called by profeſſor Willdenow, in compliment to the highly meritorious Dr. Nicholas Thomas Hoſt, author of a *Synopſis Plantarum in Auſtria creſcentium*, octavo; and of a moſt ſuperb work in three volumes, folio, with coloured plates in the ſtyle of Jacquin's publications, entitled *Gramina Auſtriaca*. Profeſſor Jacquin has called a plant *Hoſta*, with the ſame intention, in his *Hortus Schoenbrunnenſis*, v. 1. 60. t. 114, which appeats to us the *Cornutia pyramidata* of Linnæus, notwithſtanding the doubts and objections of Jacquin, and the diſagreement of its fruit with the deſcriptions of Plumier and Linnæus, which laſt ſeem to us erroneous. (See CORNUTIA.) The fruit of the Linnæan ſpecimens at leaſt exactly agrees with Jacquin's figure, as to the number of cells and ſeeds. The *Hoſtea* of Willdenow, *Sp. Pl.* v. 1. 1274, is however the *Matelea* of Aublet, *Guian.* v. 1. 277. t. 109, under which appellation it is deſcibed by Mr. Brown in his *Aſclepiadeæ*, 25; and though this name has received no explanation, and appears to be barbarous, it is ſufficiently harmonious, and in compliance with a writer who has treated his ſubject ſo well as Mr. Brown, may perhaps be admiſſible. See MATELEA.

HOSTEL, or HOTEL, a French term, anciently ſignifying a houſe or dwelling-place.

It is now more commonly uſed for the palaces or houſes of the king, princes, and great lords.

In this ſenſe they ſay, the *hotel de Condé*, *hotel de Conti*, *hotel de Louvre*, &c.

The grand prevot de l'hotel was the firſt judge of the officers of the king's houſhold, his juriſdiction was much like that of lord-ſteward of the houſhold of the king of England.

The *hotel de ville* is what we call a *town-houſe*, or *town-hall*.

Hotel-dieu, is a common name for the chief hoſpital for the reception of ſick perſons, in moſt of the cities of France. *The Hotel de Mars* is a hoſpital near Paris; of the ſame nature with Chelſea hoſpital.

HOSTEREN, in *Geography*, a ſmall iſland in the N. ſea, near the coaſt of Norway. N. lat. 60°.

HOSTERLITZ, a town of Moravia, in the circle of Znaym; 12 miles N.E. of Znaym.

HOSTIA, HOST, in *Antiquity*, a victim offered in ſacrifice to a deity.

The word is formed from *hoſtis*, *enemy*; it being the cuſtom to offer up a ſacrifice before they joined battle, to render the gods propitious; or, after the battle was over, to give them thanks. Some chooſe to derive the word from *hoſtis*, q. d. *ferio*, *I ſtrike*. Iſidore on this word remarks, that the name hoſtia was given to thoſe ſacrifices which they offered before they marched to attack an enemy; *Antequam*, ſays he, *ad hoſtem pergerent*, in contradiſtinction from *victims*, which were properly thoſe offered after the victory. Ovid ſeems to diſtinguiſh otherwiſe, when he ſays,

> "Victima quæ cecidit dextra victrice, vocatur;
> Hoſtibus a domitis hoſtia nomen habet."

As if the hoſtia might be ſlain by any prieſt, but the victim only by the hands of the victor. Fronton makes another diſtinction: according to him, *victima* was a grand oblation, and hoſtia a ſmaller and leſs conſiderable one.

HOSTILINA, in *Mythology*, a goddeſs adored among the Romans, and invoked particularly for the fertility of the earth.

HOSTILITY, the action of an enemy. During a truce, all hoſtilities are to ceaſe on both ſides: ſuch a city ſtands neuter, and commits no hoſtilities on either ſide.

The word is Latin, *hoſtilitas*, formed of the primitive *hoſtis*, which ſignifies *enemy*, and which anciently ſignified ſtranger, *hoſpes*.

HOSTILLERS, in our *Old Writers*, is uſed for innkeepers; and in ſome old books the word *hoſters* is taken in the ſame ſenſe. 3 Ed. III. cap. 2.

The word is French, *hoſteliers*, of the ſame import.

HOSTIS, in *Antiquity*. See BISHOP.

HOSTOMITZ, in *Geography*, a town of Bohemia, in the circle of Beraun; ſix miles S.E. of Beraun. N. lat. 49° 51'. E. long. 14° 11'.

HOSTORP, a town of Sweden, in the province of Skone; 10 miles N.W. of Lund.

HOT-BATH. See BATH and THERMÆ.

HOT-BED, in *Gardening*, a name given to a ſort of bed conſtructed for the purpoſe of producing artificial heat, and the raiſing of different ſorts of culinary and other vegetables and plants.

In this view theſe beds are moſtly formed either of horſe-dung or tanner's-bark, being raiſed two, three, or four feet high, and covered with garden-frames and glaſſes, &c. And in ſome caſes the dung and bark are mixed or blended together.

It is chiefly by the aid of theſe beds alſo that various tender plants, flowers, and fruits, are raiſed in perfection, which, without ſuch artificial heat, could not poſſibly be produced or continued in this climate. By this means, likewiſe, vaſt numbers of ſeeds, which would otherwiſe remain years in the earth, and ſome never grow at all, are made to generate, form plants, continue their growth, and produce their flowers and fruits as in their native ſoils. And the cuttings and ſlips of many ſorts of trees and ſhrubs, which would otherwiſe remain inactive and periſh, are alſo made ſoon to emit root-fibres and ſhoots, and become plants in due time.

By this means, too, many valuable eſculent plants, that ſucceed in the full ground at one time of the year or other, are brought to perfection much ſooner than they could otherwiſe be obtained, as the cucumber, aſparagus, peas, beans, kidney-beans, radiſhes, carrots, ſtrawberries, and various ſallad herbs, and other plants, which grow in the open ground of the garden departments.

And annual flowering plants, as well as thoſe of the herbaceous and ſhrubby kinds, are alſo brought to more early perfection and flowering by them. They are therefore of great uſe in the practice of gardening, in numerous caſes of forcing early productions.

Making Dung Hot-beds.—The proper ſituations for making theſe ſorts of beds in are the forcing-ground, or other ſheltered, warm, ſunny expoſures, either in or contiguous to the garden ground.

The hot-beds are ſometimes made entirely on level ground, and ſometimes in a trench or oblong cavity formed in the ground, the width and length of the intended bed, and from twelve inches to a foot and a half deep or more; but for early work in the winter or ſpring ſeaſons, they ſhould be moſtly above ground, upon the level or rather elevated ſurface, that the bottom of the bed may ſtand dry, and not be liable to be chilled by wet, as, when made in this way in thoſe ſeaſons when the heat declines, both ſides of the bed may be lined with hot dung quite to the bottom, ſo as the whole may have an equal benefit of the lining to revive its declining heat, which is eſſentially neceſſary during winter and ſpring, until the middle or latter end of May. But when hot-beds are made in trenches at an early ſeaſon, where linings muſt be added to ſupport a conſtant regular heat, all that part of the beds within the ground is deprived of the advantage of them. Theſe beds are ſometimes alſo incloſed by brick maſonry, which is ſurrounded by hot dung on the outſide. This is M'Phail's mode of early forcing.

With reſpect to the forms and dimenſions of dung hot-beds, they ſhould generally be thoſe of long ſquares, ranging nearly eaſt and weſt, to any length that may be convenient; about four feet and a half in breadth, if to be covered with common garden-frames; and three and a half or four feet if for hand-glaſſes; raiſing them, if in winter, or early in ſpring, three or four feet or more in height, allowing for ſettling;

tling; as they will ſettle half a foot or more in the courſe of a week or two after making them.

The more early beds ſhould be ſubſtantial, otherwiſe they will not ſupport a durable uniform temperature of heat for continuing the plants in a regular free growth; which, by the aid of linings, muſt be effected till the arrival of warm weather. Thoſe made in winter ſhould be three feet and a half in height at leaſt, when firſt made; or if four, ſo much the better; in March a yard in height, in April the ſame, or two feet and a half; and in May two feet or a little more, as without due ſubſtance they never anſwer well.

Theſe beds may be made for a one-light, a two-light, or even a three-light frame; and for two, three, or more, three-light frames in a range, according to circumſtances and the nature of the forcing to be done.

Manner of Forming the Beds.—After properly marking them out, ſome of the longeſt or moſt ſtrawy dung ſhould be ſhaken along the bottom, to begin the bed with; then the long and ſhort together as it comes to hand, ſhaking it evenly in every part, raiſing the ſides perfectly upright, ſtraight, and firm as poſſible; forming the corners alſo full and very firm, keeping the middle well filled with the beſt dung; and, as the work advances, beating each layer of dung evenly and firmly down with the dung-fork; or, when it is very long, looſe, ſtrawy dung, treading it in to ſettle every part equally; proceeding in this manner till the bed is arrived to its deſigned height, raiſing that part intended for frames two or three inches higher in the back or north ſide than in front, to give the greater ſlope to the glaſſes to the ſun, finiſhing the top even in every part; and when the bed is thus raiſed, trimming up all the ſhort dung remaining at laſt round the bed, laying it on the top ridgeways along the middle, which may either then, or rather, if a ſtrong bed, in a few days afterwards, when the bed has ſettled a little, be levelled, to make good all inequalities, and ſmooth the ſurface. After this ſet the frames, &c. on, and earth the bed as directed below. See FRAME and HAND *Glaſſes*.

The hot-bed being thus formed, when of conſiderable ſubſtance, it may be adviſable to defer the framing and earthing it finally for ſeveral days, or even a week or more according to the ſtrength of the bed, until it is a little ſettled, and the firſt violent heat has ſubſided; as the heat will be very ſtrong, and frequently of a burning nature, for the firſt week or two after it is made. It may, however, often be proper to ſet the frames and glaſſes on, to defend the beds from exceſſive rains or ſnow, as well as to draw up the heat ſooner, to form the bed to a proper temperature for the reception of the mould, and ſeeds or plants. The upper ends of the lights ſhould be raiſed a hand's breadth high, or be ſhoved ſo much down in dry weather, that the great ſteam ariſing from the bed may paſs freely off; as in ſtrong hot-beds neither the earth, ſeed, nor plants, ſhould be put in till the fierce heat and violent ſteam have a little abated. Hot-beds of ſlender ſubſtance may, however, be framed, earthed, &c. as ſoon as made, as no great danger is to be apprehended from burning, and more particularly thoſe for ſmall frames, hand-glaſſes, &c.

Where, in this mode of forcing, there is an extenſive range of ſubſtantial hot-beds, the placing of the frames on them before they are fixed for good, is often inconvenient; in which caſe it is proper to have mats, or dry long litter ready to cover the tops in caſe of exceſſive rains or ſnow, which might chill and retard the beds greatly from becoming of a due temperature for the reception of the earth, &c. and ſometimes occaſion them to become of a burning deſcription, when they otherwiſe would be of only a regular heat and temperature for the purpoſes for which they are deſigned.

But in hot-beds deſigned for ſtrength and duration, it will, as ſoon as they are made, be proper to provide ſome ſharp pointed ſticks, two feet long, to thruſt down into the middle of the beds in different parts, that by pulling them out daily, and feeling their lower parts, a judgment may be formed of the working and temperature of the beds, and when in a proper ſtate for the reception of the mould and plants.

Where the hot-bed is therefore of good ſubſtance, and for the large frames, it is proper to let it remain ſome days to ſettle, before it is framed for good, becauſe, notwithſtanding all the care in making, it will often ſettle unequally; and it ſhould be levelled before it is earthed; in from about three to five, ſix, or eight days, according to the nature of the dung, or ſubſtance of the bed, it will have ſo far ſettled as to diſcover the inequalities, if any; when, if the frames and glaſſes were placed thereon, for the purpoſes above-mentioned, when the whole has ſettled, all the inequalities ſhould be made even, by levelling the top, making the ſurface firm, and ſmoothing it off neatly with the back of the ſpade. Then the frame and glaſſes ſhould be put on for good, opening the lights a little at top to give vent to the ſteam and rank heat.

Mode of Earthing the Beds.—As ſtrong ſubſtantial dung hot-beds, after being covered with the frames, &c. ſometimes heat violently the firſt week or fortnight; when the earth is put in during the fierce heat, by confining that and ſteam ſtill more cloſely it is in danger of being burnt, and alſo of deſtroying the ſeed and roots of the plants, if any were ſown or planted. When the earth is thus burnt by the heat of the dung, no ſeeds or plants can vegetate or thrive in it; it muſt therefore be taken out and replaced by freſh compoſt. Hot-beds of ſuch conſiderable ſubſtance ſhould of courſe be examined previouſly to moulding them, to aſcertain the ſtate of heat daily, by the ſticks, and thruſting the hand into the dung. And when it is found of a due temperature, the mould ſhould be put on. This is ſometimes ſhewn to be the caſe by the appearance of a ſort of muſhroom ſpawn upon the more ſuperficial parts.

But in ſlender hot-beds, as their heat is never ſo violent or durable, they may either be earthed as ſoon as made, or in two, three, or four days afterwards, as may be judged proper. In all caſes care ſhould, however, be taken that the beds do not loſe any time for them to waſte their heat ineffectually, without being earthed and properly prepared for the reception of the plants.

And for all ſorts of hot-beds, the earth or mould ſhould be rich, light, and of a dry quality, particularly for early work in winter and ſpring, and tender plants, ſuch as cucumbers, melons, tender annuals, &c. as very moiſt earth rots ſuch plants while young, binds too cloſely, and by its compactneſs confines the heat and ſteam, ſo as often to burn at bottom, and ſcorch the roots of the plants. Some light mould ſhould therefore always be in readineſs in ſome airy ſhed, for two or three weeks before it is wanted for this uſe. See COMPOST.

In regard to the depth of earth or mould which is neceſſary to be applied over hot-beds, it muſt be different according to the purpoſes for which they are deſigned, as for ſowing ſeed on, or the reception of plants, and the nature of the plants, or chiefly for plunging pots in. In general, however, from about five or ſix, to ten or twelve inches, is the common depth. For ſowing ſeeds to raiſe plants for tranſplantation, the depth of mould ſhould be about ſix inches; and where they are to remain to acquire their full growth, not leſs than from ſix or eight to ten or twelve inches in depth. If for the immediate reception of plants to remain, or for ſtriking cuttings of any ſort in, &c. from ſix to eight, ten, or more inches of mould will be neceſſary, regulating the whole in ſome proportion to the nature or growth of the plants, and the ſubſtance of the beds. Thus, cucumbers and melons, which are not only extenſive growers, but produce large fruit that requires much nouriſhment, need a greater depth of mould than ſmall ſallad-herbs, &c. which only ſtand in need of a ſlight covering.

In the buſineſs of earthing the beds, every part of the dung within the frame ſhould be carefully covered over, eſpecially after the plants are come up, or any planted in them, that no ſteam may riſe immediately from the dung upon them, and thereby prove injurious or deſtructive to them.

With regard to the ſowing or planting ſeeds or plants in hot-beds of ſtrong ſubſtance, under frames, care ſhould conſtantly be taken not to do it till the danger of burning is over, unleſs performed in pots, that may be removed up as occaſion requires; and at any rate, it is always better to wait a day or two, than to endanger the plants; time ſhould not, however, be loſt when the bed is ready, as it is neceſſary always to have a lively heat at firſt, to promote a quick germination in the ſeeds, or to ſtrike and ſet the plants forward, ſo as to aſſume a free growth at firſt when they appear at the ſurface of the beds.

And in the management of hot-beds after being ſown or planted, it muſt often be different, according as the different plants may require. In general, however, after the ſeeds or plants have been put in, the glaſſes are to be conſtantly continued on until the middle of ſummer, when the weather is become ſettled and warm, particularly for all the tender kinds of plants; freſh air being admitted daily, at all opportunities, in mild weather, by raiſing the upper ends of the lights; or, if hand-glaſſes, by propping up one ſide, from about half an inch to two or three inches high, according to the heat and ſteam in the bed, and temperature of the outward air, ſhutting all cloſe in due time towards evening, and keeping them cloſe every night during the cold weather, covering the glaſſes every night with mats until June, eſpecially for the more tender ſort of plants, flowers, &c.

As ſoon as the heat of the beds naturally declines or becomes of a weakly temperature, it muſt be renewed by adding freſh hot dung around the ſides, which is called *lining* the bed, and is particularly neceſſary for all dung hot-beds, made any time in winter or ſpring, as already noticed. See Linings.

And ſometimes a repetition of new linings is required three or four times, eſpecially for thoſe made in winter, to continue them in an uniform heat; theſe linings ſhould be made of the hotteſt dung, and be applied quite from the bottom to the top of the bed, and about fifteen or eighteen inches wide at bottom, drawing them into about a foot wide at top, raiſing them four or five inches up the frame to allow for ſettling, but not more; for the tops of the linings, when ſettled, ſhould be but very little above the bottom of the frame, leſt their heat burn the earth adjoining to the frame within; and to prevent ſteam from riſing too copiouſly from the linings, a ſtratum of earth ſhould be laid on the top two inches thick, continuing it cloſe up to the bottom of the frame, that no ſteam may riſe that way; for the rank ſteam immediately from dung, without firſt paſſing through a body of earth, is deſtructive to moſt plants. As the linings ſettle down lower than the tops of the bed, more freſh dung ſhould be added, in order to preſerve them of a proper height.

Forming Bark Hot-beds.—Theſe are ſuch hot-beds as are formed of bark or tan, after having been uſed in tan-vats or pits, and which produces a regular, moderate, and ſteady durable heat. See Bark and Hot-*houſe.*

But hot-beds of this kind always require to be made in proper bark-pits formed for the purpoſe of brick-work, or poſt and planking, to confine the tan in its proper ſituation and direction. See Bark-*pit.*

In caſes where there are proper conveniences of pits, in which to make the hot-beds furniſhed with frames and glaſſes ſuitable, they are ſuperior in many caſes to dung hot-beds, both in raiſing many early eſculent productions, and various curious flowers to early bloom, as well as in the propagation and raiſing many ſorts of tender exotics, from ſeeds, layers, cuttings, &c. In bark hot-beds early ſtrawberries and melons may be raiſed, which, by the regular, moderate, and durable heat which they produce, are generally in great perfection at an early ſeaſon; likewiſe, ſmall early crops of dwarf-peas and kidney-beans, &c. and of flowering plants, many ſorts may be forced in great perfection of early bloom, both of the bulbous, tuberous, and fibrous-rooted kinds, ſuch as hyacinths, dwarf-tulips, jonquils, narciſſuſes, anemones, ranunculuſes, pinks, and many other moderate growing kinds; alſo roſes, and ſome other ſmall ornamental flowering ſhrubs of different deſcriptions.

And bark hot-beds are alſo of great utility in hot-houſes, ſtoves, and forcing houſes, as the principal and moſt proper, and effectual kind of beds for theſe different departments of the garden. See Bark-*beds*, and Hot-*houſe.*

Kinds of forced Crops.—The particular ſorts of crops uſually raiſed in theſe hot-beds are thoſe of cucumbers, melons, aſparagus, ſtrawberries, kidney-beans, peas, dwarf-beans, radiſhes, ſmall ſallad-herbs, and lettuces. But various ſorts of ſeed plants are raiſed and preſerved in this way, ſuch as cauliflowers, early cabbages, red cabbages, early celery plants for pricking out, carrots, ſmall white turnip-radiſhes, Dutch turnips, mint, tarragon, tanſey, baſil, capſicums, love-apples, coriander, purſlane, early dwarf potatoes, and muſhrooms in beds of peculiar ſorts. But thoſe for which theſe beds are more abſolutely neceſſary, are all the firſt ſort, and baſil, capſicum, love-apple, and muſhrooms amongſt thoſe of the ſecond deſcription. See Mushroom-*houſe.*

Hot-*bed*, in *Agriculture*, a ſort of earthy layer or ſtratum, under which horſe and ſome other kinds of manure have been depoſited in their more raw and imperfectly reduced conditions; by means of which a degree of heat is kept up for ſome length of time, and thereby vegetation brought forward, where the ſeaſon or climate is not warm enough for effecting the purpoſe in a proper manner. This is a method of huſbandry that can only be had recourſe to in particular ſorts of crops, ſuch as thoſe of potatoes and a few others, in which the ſets or other ſeeds are capable of being put in upon littery or other hot dung in the drills or rows, by means of which a kind of hot-bed is prepared for the promotion of their growth, and the extenſion of their knobby, tuberous, or other roots.

Hot-*bed Culture*, a term applied to that kind of cultivation which in ſome meaſure approaches to that which takes place on hot beds. See Hot-*bed.*

Hot-*houſe*, in *Gardening*, a ſort of garden erection, moſtly formed of glaſs-work, in which a conſtant regular degree of artificial heat by fire and bark hot-beds is kept up and preſerved.

The principal powers which aſſiſt in promoting the growth of vegetables, and which of courſe ſhould be regarded in buildings of this nature, are thoſe of heat, light, air, earth or ſoil, and water. The firſt of theſe is commonly afforded by the conſumption of ſome ſort of material as fuel, in a narrow fire-place or furnace, the heat and ſmoke being conveyed in a winding horizontal flue or pipe, which ſerves as a chimney to the different parts. This has, likewiſe, been occaſionally done by the application of ſteam alone, as well as in combination with fire. This is, however, too expenſive a method to be generally employed. It may be afforded alſo by different materials in the ſtate of fermentation, ſuch as dung, litter, leaves, and various other vegetable products of little value but for manure. And in particular ſituations it may be effected by the ſun, being preſerved by proper contrivances, as in the patent hot-houſe lately invented by Dr. Anderſon, and deſcribed below. But though all theſe ſchemes may be occaſionally had recourſe to in particular caſes, that by the conſumption of fuel in furnaces and flues is the only practical method that can be generally adopted with benefit. As the principal difficulty in this buſineſs is the regulation and retention of the temperature, ſo as to ſuit the different habits and degrees of heat that are requiſite for the growth of the different plants; various plans have been had recourſe to in theſe intentions; in the latter partly by having the houſes made in a great meaſure air-tight, and partly by the contrivance of an inner curtain, ſo as to be let down cloſe under the glaſs during the night-time, and thereby prevent the heated air of the houſe from being brought in contact with it, and from eſcaping in any great proportion in that way. This curtain has been lately contrived by Mr. Loudon. In the former, the heat is alſo chiefly regulated and kept at the proper height by means of this curtain, which, as it keeps up the due temperature, does not render it neceſſary to have the heat raiſed ſo much in the early part of the night, in order to avoid its getting too low towards the morning. For though the houſe be quite air-tight, as glaſs from its porous nature is readily permeable by heat or cold, it muſt of neceſſity, in conſequence of the aſcenſion of the heated air to the top of the houſe, be continually given out to the ſurrounding atmoſphere by the roof and ſides of all glazed houſes of this deſcription. It is indeed principally on this account that ſuch houſes as have their ſides of glaſs, are, without this ſort of curtain, conducted with ſuch trouble and difficulty.

Light is neceſſarily admitted by having the whole or a portion only of the roof of ſuch houſes; or all the roof and ſides too, conſtructed with glaſs, in frames that have the convenience of ſliding at pleaſure. It is of very great importance in theſe buildings alſo, that the light ſhould fall upon the plants, at but a ſmall diſtance from the glaſs of their roofs, as by ſuch means the plants are found to ſucceed in the moſt perfect manner.

Air is obviouſly incloſed within ſuch houſes, but is capable of being excluded, and that which is freſh admitted either in the whole or only in part, ſo as to be intermixed with it, by means of proper openings or apertures formed in different parts, ſo as to be opened or cloſed as there may be occaſion for the due growth of the plants.

Earthy matter or ſoil proper for this purpoſe may be provided by means of incloſing a part of the ſurface of the ground within ſuch houſes, and putting it under a ſuitable ſtate of preparation, as well as by depoſiting it after being properly prepared in pots or boxes made for the purpoſe, and which are capable of being put in any way that may be found beneficial for the plants or other things they may contain.

Water can readily be given in its ſtate of fluidity to the plants or other crops ſimply by pouring it over the ſurface of the earth, or by the garden ſyringe, engine, and watering-pot, ſtrain; and by pouring it upon the heated flues or other parts of the houſe by which it is converted into vapour, it is applied as dew, in conſequence of its being depoſited in fine particles as it loſes its heat.

Beſides theſe, the removal of ſtagnant air in theſe ſorts of houſes is of much conſequence, which may in ſome meaſure be effected by affording motion to the plants by the admiſſion of the external air in gentle currents. But as this can only be properly attempted when the air from without is nearly of the ſame temperature as that of the hot-houſe, it is plain that plants grown in ſuch places can only have ſuch admiſſions for a very ſmall part of the year. This has led to different contrivances in order to remedy the defect, but theſe have hitherto been attended with but little ſucceſs.

General Conſtruction and Uſe.—The hot-houſe is uſed for procuring ſome ſorts of fine fruits, ſuch as the peach, the nectarine, the cherry, the fig, &c. alſo for the vine, the pine-apple, and for raiſing and preſerving various other ſorts of tender exotics from the hot parts of the world. Each of theſe ſorts of fine fruits requires ſomething particular in the conſtruction of the hot-houſe.

Thoſe which are intended for the peach, nectarine, cherry, and fig, &c. are in general with great propriety in cold ſituations conſtructed againſt walls, being made with glaſs on one ſide. But in climates that are leſs ſevere, ſuch houſes as are formed of glaſs on all the ſides, having the trees ſo planted as to grow irregularly in the ſtandard method, may be more beneficial as well as more ornamental.

For the forcing of vines, they may be of any kind of form as well as ſmall or large, according to the ſeaſon at which the trees are to be brought into fruit. But a double-roofed houſe, with an inner roofing, is adviſed by ſome as the moſt proper for general crops, as well as the moſt cheap in its nature.

It is uſual for pines to be raiſed at very great expence, in conſequence of the quantities of tan, leaves, and other ſimilar ſubſtances that are neceſſary, and which ſtand in need of ſuch frequent renewal, and cauſe ſo much labour and trouble in removing and replacing the plants, &c. in their ſituations. Theſe, with the uncertainty that is naturally attendant on forcing with materials under the ſtate of fermentation, have deterred many from attempting this ſort of culture. Lately, however, plans have been ſuggeſted and put in practice, which in a great meaſure obviate theſe inconveniences, as may be ſeen in the ſection of a pinery given in the plate for this purpoſe.

But in the general conſtruction of theſe houſes, a wall of eight or ten feet in height or more, is raiſed behind, with a low wall in front and both ends, on which is placed upright glaſs-work, four, five, or ſix feet, and a ſloping glaſs roof, extending from the top of the front to the back wall. Internal flues for fire-heat, in winter, are alſo contrived, and a capacious oblong or ſquare pit in the bottom ſpace, in which to have a conſtant bark-bed to furniſh a continual regular heat at all ſeaſons; ſo as in the whole to warm the incloſed internal air always to a certain proper high degree. Houſes thus formed are moſtly uſed in raiſing pines.

But beſides the above, theſe houſes are of great utility in forwarding many ſorts of choice or deſirable hardy plants, flowers, and fruits to early perfection, which being ſown or planted in pots, and placed in them in winter, or early in ſpring, the conſtant heat thus produced forwards them to maturity two or three months or more before their natural ſeaſon in the full ground, ſuch as kidney-beans, ſtrawberries, &c.; alſo, many ſorts of flowering plants, both annuals and perennials, of moderate growth, are forwarded to early bloom; and vines planted in the outſide cloſe to the front, the ſtem of each introduced through a ſmall hole above, and the internal branches trained up under the glaſſes, produce grapes at an early period, as in May. In hot-houſes, likewiſe, early cucumbers may be raiſed in good perfection; and the ſeeds, cuttings, ſlips, &c. of many curious tender plants forwarded exceedingly in their growth by plunging the pots containing them in the bark-beds of ſuch houſes.

Situation and Form.—Theſe houſes are moſtly ranged lengthways, nearly eaſt and weſt, that the glaſſes of the front and roof may have the full influence of the ſun. This is the moſt convenient ſituation for common houſes, either for pines or exotic plants.

But ſome houſes of this ſort, inſtead of being placed in this direction, have lately been ranged directly ſouth and north, having a ſloped roof to each ſide like the roof of a houſe; alſo to the front or ſouth end; both ſides and the ſouth end front being of glaſs. Theſe houſes are made from ten or twelve to fifteen or twenty feet wide, the length at pleaſure; and from ten to twelve feet high in the middle, both ſides fully head height; being formed by a brick wall all round, raiſed only two or three feet on both ſides, and ſouth end; but at the north end like the gable of a houſe. Upon the top of the ſide and ſouth end walling is erected the framing for the glaſs-work, which is ſometimes formed two or three feet upright, immediately on the top of the wall, having the ſloped glaſs-work above; and ſometimes wholly of a continued ſlope on both ſides, immediately from the top of the ſide walls to that of the middle ridge. They are furniſhed either with one or two bark-pits; but if of any conſiderable width, generally with two ranging parallel, one under each ſlope of the top glaſs, ſeparated by a two-foot path running along the middle of the houſe, and ſometimes continued all round each pit, with flues ranged along againſt the inſide walls; the whole terminating in an upright funnel or chimney at the north end of the building.

There are other hot-houſes which are formed entirely on the ſquare, having a ten or twelve-feet brick wall behind; that of the front, and both ſides, only two or three feet high for the ſupport of the glaſs-work, placed nearly upright almoſt the ſame height, and ſloped above on both ſides and front, which are wholly of glaſs. Theſe are furniſhed within with bark-pits and flues, as in the other ſorts.

In particular caſes they are likewiſe made ſemicircular, or entirely circular, being formed with a two or three-feet brick wall ſupporting the glaſs framing, which is continued quite round; having the bark-pit alſo circular, and flues carried all round the inſide of the walling, terminating in a chimney on the northern ſide of the houſe. However, the firſt forms are probably the beſt for general purpoſes.

Dimenſions.—Hot-houſes on theſe plans are made of different dimenſions, according to the ſize of the plants they are deſigned to contain; but for common purpoſes they ſhould be only of a moderate height, not exceeding ten or twelve to fourteen feet behind, and five or ſix in front: ſome are, however, built much more lofty behind, to admit of the taller growing exotics placed toward the back part, to grow up accordingly in a lofty ſtature; but the above are beſt adapted to the culture of pines, and other moderate growing plants, as well as for forcing in; as very lofty houſes require a greater force of heat, and by the glaſſes being ſo high, the plants receive leſs benefit from the ſun, and are apt to draw up too faſt into long ſlender leaves and ſtems, as they naturally tend towards the glaſſes. Where the top glaſſes are at a moderate diſtance from the plants, they receive the benefit of the ſun's heat more fully, which is eſſential in winter, and become more ſtalky at bottom, and aſſume a more robuſt and firm growth, particularly the pine-apple, and are thereby more capable of producing large fruit in the ſeaſon.

Conſtructing the Flues.—After having determined on the dimenſions as to length and width, the foundations of the houſe ſhould be ſet out accordingly of brick work, allowing due width at bottom to ſupport the flues a foot wide, wholly on the brick baſis; detached an inch or two from the main walls; then ſetting off the back or north wall a brick and a half or two bricks thick, and the front and end walls nine inches, carrying up the back wall from ten to fourteen feet high; but thoſe of the front and ends only from about two feet to a yard; taking care in carrying up the walls to allot a proper ſpace for a door-way, at one or both ends, towards the back part; ſetting out alſo the furnace or fire-place of the flues in the bottom foundation, towards one end of the back wall behind, formed alſo of brick work, made to communicate with the lowermoſt flue within. But when of great length, as forty feet or more, a fire-place at each end may be neceſſary; or, if more convenient, may have them in the back part of the end walls, or both in the middle way of the back wall; each communicating with a ſeparate range of flues; in either caſe, forming them wholly on the outſide of the walls, about twelve or fourteen inches wide in the clear, but more in lengthways inward; the inner end terminating in a funnel to communicate internally with the flues, fixing an iron-barred grate at bottom to ſupport the fuel; calculated for coal, wood, peat, turf, &c. An aſh-hole ſhould be made underneath. The mouth or fuel-door ſhould be about ten or twelve inches ſquare, having an iron frame and door fixed to ſhut with an iron latch as cloſe as poſſible. The whole furnace ſhould be raiſed ſixteen or eighteen inches in the clear, finiſhing the top archways. Then continue carrying up the walls of the building regularly, and on the inſide erect the flues cloſe along the walls.

It is ſometimes advantageous to have the flues a little detached from the walls, one, two, or three inches, that, by being thus diſtinct, the heat may ariſe from both ſides, which will be an advantage in more effectually diffuſing the whole heat internally in the houſe; as, when they are attached cloſe to the walls, a very conſiderable portion of the heat is ineffectually loſt in the part of the wall behind. In contriving the flues, they ſhould be continued along the front and both ends, in one range at leaſt, in this order. But it is better if they are raiſed as high as the outward front and end walls, in one or two ranges, one over the other. On the tops of theſe may be placed pots of many ſmall plants, both of the exotic and forcing kinds, with much convenience.

Thus proceed in the conſtruction of the flues, making them generally about a foot wide in the whole, including ſix or eight inches in the clear, formed with a brick work, on edge; the firſt lower flue ſhould communicate with the furnace or fire-place without and be raiſed a little above it, to promote the draught of heat more freely, continuing it along above the internal level of the floor of the back alley or walk of the houſe the above width, and three bricks, on edge, deep, returning it in two or three ranges over one another, next the back wall, and in one or two along the ends, and front wall as the height may admit; each return two bricks, an edge deep, and tiled or bricked over. In the beginning of the firſt bottom flue a ſliding iron regulator may be fixed, to uſe occaſionally, in admitting more or leſs heat, being careful that the brick-work of each flue is cloſely jointed with the beſt ſort of mortar for that purpoſe, and well pointed within, that no ſmoke may break out; having each return cloſely covered with broad ſquare paving tiles on the brick-work; covering the uppermoſt flues alſo with broad, thick, flat tiles the whole width, all very cloſely laid, and joined in mortar. The uppermoſt or laſt range of flues ſhould terminate in an upright vent or chimney at one end of the back wall; and where there are two ſeparate ſets of flues, there ſhould be a chimney at each end. An iron ſlider in the termination of the laſt flue next the chimney may alſo be provided, to confine the heat more or leſs on particular occaſions, as may be found neceſſary.

But ſometimes, in very wide houſes, in erecting the flues, to make all poſſible advantage of the fire-heat, one or more ſpare flues, for occaſional uſe, is continued round the bark-pit, carried up againſt the ſurrounding wall, but detached an inch or two, to form a vacancy for the heat to come up more beneficially, and that, by having vent, it may not dry the tan of the bark-bed too much; and in the beginning a ſliding iron regulator may be fixed, either to admit or exclude the heat, as expedient; ſo that the ſmoke, by running through a larger extent, may expend its heat wholly in the flues before it be diſcharged at the chimney. Great care muſt likewiſe be taken that neither the fire-place nor flues be carried too near any of the wood-work of the buildings.

Bark-pit.—After this work is done proceed to ſet out the cavity for the bark-pit, firſt allowing a ſpace next the flues for an alley or walk, eighteen inches or two feet all round, and then in the middle ſpace form the pit for the bark-bed ſix or ſeven feet wide, the length in proportion to that of the houſe, and a yard or more deep; incloſing it by a ſurrounding wall. It may either be ſunk at bottom a little in the ground, raiſing the reſt above by means of the parapet wall; or if there is danger of wet below, it ſhould be raiſed moſtly above the general ſurface. The ſurrounding wall ſhould be nine inches, but a brick wide wall is often made to do, eſpecially for that part which forms the parapet above ground. It ſhould be coped all round with a timber plate or kirb, framed and mortiſed together, which effectually ſecures the brick-work in its proper ſituation.

The bottom of the pit ſhould be levelled and well rammed, and if paved with any coarſe material, it is an advantage in preſerving the bark. And the path or alley round the pit muſt be neatly paved with brick or ſtone, as may be moſt convenient

Glaſs-work.—The glaſs part for incloſing the whole ſhould conſiſt of a cloſe-continued range of glaſs-ſaſhes all along the front, both ends and roof, quite up to the back wall; each ſaſh being a yard, or three feet ſix inches wide; and for the ſupport of which, framings of timber muſt be erected in the brick-walling, conformable to the width and length of the ſaſhes, the whole being neatly fixed.

And for the reception of the perpendicular glaſſes in the front and ends, a ſubſtantial timber plate muſt be placed along the top of the front and end walls, upon which ſhould be erected uprights, at proper diſtances, framed to a plate or crown-piece above, of ſufficient height to raiſe the whole front head high, both ends correſponding with the front and back; a plate of timber being alſo framed to the back wall above, to receive the ſloping bars from the frame-work in front; proper grooves being formed in the front plates below and above, to receive the ends of the perpendicular ſaſhes, ſliding cloſe againſt the outſide of the uprights all the way along the front, or they may be contrived for only every other ſaſh, to ſlide one on the ſide of the other, but the former is the better method.

And from the top of the upright framing in front ſhould be carried ſubſtantial croſs-bars or bearers, ſloping to the back wall, where they are framed at both ends to the wood-work or plates, at regular diſtances, to receive and ſupport the ſloping glaſs ſaſhes of the roof, when placed cloſe together upon the croſs bars or rafters, and generally ranging in two or more tiers, ſliding one over the other, of ſufficient length together to reach quite from the top of the upright framing in front, to the top of the back wall. The croſs bars ſhould be grooved lengthways above, to carry off wet falling between the frames of the ſloping lights: making the upper end of the tier of glaſſes ſhut cloſe up to the plate in the wall behind, running under a proper coping of wood or lead, fixed along above cloſe to the wall, and lapped down of due width to cover, and ſhoot off the wet ſufficiently from the upper termination of the top ſaſhes. Some wide houſes have, excluſive of the main ſlope ſliding glaſs ſaſhes, a ſhorter upper tier of glaſs fixed; the upper ends being ſecured under a coping as above, and the lower ends lapping over the top ends of the upper ſliding tier, and this over that below in the ſame manner, to ſhoot the wet clear over each upper end or termination; likewiſe along the under outer edge of the top plate, or crown piece in front, may be a ſmall channel to receive the water from the ſloping glaſs ſaſhes, and convey it to one or both ends without running down upon the upright ſaſhes, being careful that the top part behind be well framed and ſecured, water-tight, and the top of the back wall finiſhed a little higher than the glaſſes, with a neat coping the whole length of the building.

And the bars of wood which ſupport the glaſſes ſhould be neatly formed, and made neither very broad nor thick to intercept the rays of the ſun. Thoſe however, at top, ſhould be ſtrong enough to ſupport the glaſſes without bending under them. In wide houſes, uprights are arranged within, at proper diſtances, to ſupport the croſs rafters more perfectly than could otherwiſe be the caſe.

Glazing.—But in reſpect to the glaſs work in the ſloping ſaſhes, the panes of glaſs ſhould be laid in putty, with the ends lapping over each other about half an inch, the vacancies of which are, in ſome, cloſed up at bottom with putty, others leave each lapping of the panes open, in order for the air to enter moderately, and that the rancid vapours ariſing from the fermentation of the bark-bed, &c. within, may thereby be kept in conſtant motion, without condenſing much, and alſo that ſuch as condenſe againſt the glaſſes may diſcharge themſelves at thoſe places without dropping upon the plants. The upright ſaſhes in front may either be glazed as above, or the panes laid in lead work; being very careful to have the glazing well performed, and proof againſt any wet that may happen to beat againſt them. The doors ſhould have the upper parts ſaſhed and glazed to correſpond with the other glaſs-work of the houſe.

Painting.—And on the inſide, the walls ſhould be plaſtered, pargeted, and white-waſhed; and all the wood-work within and without, painted white in oil colour. Some, however, have the back wall painted or coloured rather dark.

Shelves.—Ranges of narrow ſhelves for pots of ſmall plants may be erected where moſt convenient, ſome behind over the flues, a ſingle range near the top glaſſes towards the back part, ſupported either by brackets ſuſpended from the croſs bars above, or by uprights erected on the parapet wall of the bark-pit. A range or two of narrow ones may alſo be placed occaſionally along both ends above the flues where there is a neceſſity for a very great number.

In wide houſes, where the croſs bars or bearers of the ſloping or top glaſs ſaſhes appear to want ſupport, ſome neat uprights, either of wood or iron, may be erected upon the bark-bed walling, at convenient diſtances, and high enough to reach the bearers above. This is a neat mode of affording them ſupport.

And on the outſide, behind, ſhould be erected a cloſe ſhed, the whole length, or at leaſt a ſmall covered ſhed over each fire-place with a door to ſhut, for the convenience of attending the fires; but the former is much the beſt, as it will ſerve to defend the back of the houſe from the outward air, and to ſtow fuel for the general uſe of them, alſo for garden tools, and all garden utenſils when not in uſe, to preſerve them from the weather; as well as to lay portions of earth in occaſionally, to have it dry, for particular purpoſes in winter and early ſpring, as in forcing frames, &c.

Sometimes hot-houſes are furniſhed with top covers, to draw over the glaſs ſaſhes occaſionally, in time of ſevere froſts and ſtorms; and ſometimes by ſlight ſliding ſhutters, fitted to the width of the ſeparate ſaſhes; but theſe are inconvenient, and require conſiderable time and trouble in their application. At other times they are formed of painted canvas, on long poles or rollers, fixed lengthways along the tops of the houſes juſt above the upper ends of the top ſaſhes, which, by means of lines and pullies, are readily let down and rolled up as there may be occaſion.

In the plate of *Hot-houſe*, at *figs*. 1. and 2. are contained the front elevation and ground plan of an improved hot-houſe, which has been found to anſwer well in practice in different inſtances.

At *fig*. 3. is ſhewn the ſection of a hot-houſe for pines, in which the objections ariſing from the expence and riſk attending their culture on the old plan are chiefly obviated. It is the invention of Mr. Loudon. In this, A, A, A, are the ſmoke flues; B, the air flue; C, a large vacuity of heated air; D, the rubble ſtone vacuity; E, the walk in the centre; F, earth in which the plants grow; G, ſteam and air tubes; H, the inner roofing; I, the ſurface of the ground. See Loudon's Treatiſe on Hot-houſes.

A plan for another kind of improved hot-houſe has been ſuggeſted by Dr. James Anderſon, for which he has taken out a patent. It produces its effects chiefly by the heat of the ſun, without the aid of flues, tan-bark, or ſteam. This improvement extends to every ſort of hot-houſe; and the advantages of ſuch hot-houſes are, according to the ſtatement the doctor has given, very conſiderable. They are,

1ſt. That "in every kind of temperature, if the works are to be erected new, from the foundation, few caſes can occur, in which they may not be ſo placed, as that the whole heat required may be obtained without occaſioning the expenditure of one ſhilling for fuel; but in the moſt unfavourable caſes that can occur, the expenditure of fuel will not amount to one-tenth part of what is now univerſally employed for producing ſimilar effects."

2d. That "in a vinery, for example, where the grapes are not meant to be forced farther than to ripen from the middle of June to the end of July, as the ſeaſon may be, no fuel will, in any caſe, be required, the whole effect being produced by the ſun alone."

3d. That "where the grapes are to ripen in April or May, ſome artificial heat will be wanted; but the quantity of fuel, even in this caſe, will be ſo inconſiderable, that in a houſe which produces, on an average of years, under ordinary good management, not leſs than ten thouſand full-ſized bunches of grapes, and fifteen hundred pots of ſtrawberries, or other ſuch plants, the conſumption of fuel will not exceed half a London chaldron of coals, and ſo in proportion for thoſe of a larger extent."

4th. That "in the pinery and ſtove, the expenditure of fuel will be diminiſhed in a proportionate degree; while, at the ſame time, the uſe of bark (or of ſteam, as a ſubſtitute for the heat of tan) will be entirely diſpenſed with; which, in many ſituations, will be the ſaving of much expence."

5th. That "theſe ſavings of expenditure will be effected not only without any detriment to the pines and other plants, but with great advantage to them all; for, in conſequence of theſe improvements, thoſe diſeaſes which ſo much weaken, and often deſtroy the moſt valuable plants, the damp in particular, will be entirely removed, and vermin, in a great meaſure, annihilated; the plants too, in conſequence of the ventilation that may be at all times given them at pleaſure, to any degree that ſhall be thought proper, (without varying the temperature from that degree which may be deemed moſt ſalutary to the plants, at the ſame time that it may be changed, at will, from moiſt to dry, or the reverſe,) may be kept in a ſtate of perpetual health and luxuriance that has been hitherto unknown in theſe repoſitories." And,

6th. That "all theſe effects will be produced by ſuch a ſimple apparatus, and that ſo adapted as to moderate of itſelf extremes of every ſort, that it will become a matter of much leſs nicety and trouble to the gardener than at preſent; as he may ſafely be abſent for a much longer time; and thus the accidents which originate from negligence leſs frequently occur."

It may be noticed that theſe houſes are made almoſt wholly of wood and glaſs. The baſe is a frame of wood, which reſts horizontally upon poſts fixed firm in the ground, to which the frame is ſcrewed by ſtrong iron ſcrews; the whole being ſo conſtructed as to admit of being taken down and removed at pleaſure without violence, merely by undoing the ſcrews. They are capable of being formed of any dimenſions. But a full explanation of their nature, and the principles on which they produce their effects, may be ſeen in the doctor's work on the "Patent Hot-houſe," lately publiſhed. Hot-houſes on this plan are conſtructed by George Byfield, eſq. architect, Craven ſtreet, Strand, London; and Mr. Samuel Butler, Hot-houſe-builder, Little Chelſea, near London.

Making Nurſery and Succeſſion Houſes.—It muſt be obſerved, that in addition to theſe hot-houſes, others of ſmaller dimenſions, for ſtriking and raiſing the young plants in, and as ſucceſſion houſes for receiving them into afterwards, when of a year's growth, to bring them forward to a proper ſize for being uſed as fruiting plants, are neceſſary, eſpecially where the pine-apple is cultivated upon an extenſive ſcale, in order to afford full room in the larger houſes for the fruiting plants to grow properly in.

Theſe houſes may be erected either as appendages to the main houſe, or detached at a little diſtance, as moſt convenient. Where the ſituation admits, it is, however, more convenient and ornamental to join them in a line with the main houſe, one at each end. They are formed nearly on the ſame conſtruction, only ſmaller both in length, width, and height, than the hot-houſe.

Form of Nurſery Houſe.—This is ſometimes formed in the manner of a common detached bark-pit, without any upright glaſſes in front, having a wall all round, five or ſix feet behind, gradually ſloping at each end, to about four feet in front, and with only ſliding glaſſes at top. Its dimenſions muſt vary according to the extent of plants. It is often termed ſimply the pit, as the whole internal ſpace in length and width is allotted entirely as a pit for a bark-bed, without any walk within, or door for entrance, the neceſſary culture being performed by ſliding up the glaſſes at top, the flues for the fires being formed in the upper part of the back wall, above the ſurface height of the bark-bed. They may, however, be formed in the manner of the hot houſe, with doors, &c. which is perhaps the beſt method. One on this principle, for general purpoſes, has lately been conſtructed on a ſmall ſcale, by Mr. Loudon, which, merely by one fire, is capable of affording four different temperatures at the ſame time, and of courſe, of forcing moſt ſorts of common vegetables, as well as growing vines, pines, and melons, each in their ſuitable climates, at little trouble or expence. A ſurface plan of it is given in the annexed plate, in which A ſhews the cover of the excavation, compriſing the furnace; B, the air regiſters, which ſerve to form the different temperatures; C, the air and ſteam tubes, by which the heated air is admitted from the vacuity formed by the rubble ſtone, as well as by the ſteam afforded by pouring in water, &c. In the ſection of this pit in the ſame plate, A repreſents the ſmoke flue; B, the air flue; C, the chimney; D, the ſupports of the rubble vacuity; E, the rubble cavity; F, the earth and the plants; G, the inner roofing rolled up; H, the damper; I, the furnace hole; K, the cover of the ſame; L, the ſurface of the ground, &c. There are many advantages derived from this mode of conſtruction, as thoſe of ſaving labour, expence, and littering the garden ground; and by ſlight alterations it will be found to anſwer cheaply for the buſineſs of forcing vines. See Loudon on Hot-houſes.

Form of Succeſſion Houſe.—This ſort of houſe ſhould be conſtructed with erect glaſſes in front, and ſloping ſaſhes at top, with a door for entrance, and an alley or walk next the back wall; or, what is better, continued round the bark-pit. And where joined to the end of the hot-houſe, it may be divided from it by a ſliding glaſs partition, having a ſeparate furnace and flues, as the young pine plants do not at all times require the ſame degree of fire-heat as the older pines. The dimenſions muſt vary according to circumſtances, and the number of plants. See STOVE and GREEN-*houſe*.

HOT-*houſe Plants*, are all ſuch of the tender, exotic, or other kinds, as require this ſort of houſe for their growth, protection, and preſervation, in this climate. This deſcription of plants is very extenſive, and of many different kinds. See STOVE *Plants*.

HOT-*houſe*, in the *Salt Works*, the place where they dry the ſalt after it is taken out of the boiling pan. In the Cheſhire ſalt-works, this is ſituated between the furnace and the funnels of the chimney which convey up the ſmoke. Along the floor of this room there run two funnels, nearly in a horizontal direction. From the furnace, after this courſe along the floor, they riſe perpendicularly. In theſe the flame and ſmoke running along, heat the room by the way.

HOT-*ſhoots*, or *Hovilſes*, a ſort of factitious, or compound fire, made of a third part of any coal, pit, ſea, or charcoal, mixed with two-thirds of loam.

Theſe ingredients are to be made up into balls, moiſtened with a little urine, round, or in any other form, at pleaſure, and expoſed to the air till thoroughly dry; then may they be burnt in the moſt orderly fire imaginable, affording a glowing, regular, and conſtant heat, for ſeven or eight hours, without ſtirring. This mixture is alſo uſed in ſome parts to ſlacken the impetuous devouring of the fire, and keep coals from conſuming too faſt.

HOT *Springs*, in *Geology*. A great part of the writers on thermal waters have aſcribed their heat to ſubterranean fires, ſeated deep in the earth, and have ſuppoſed that the waters of hot and warm ſprings were all alike boiling hot, until by their paſſage through different maſſes of cool ſtrata, they were reduced to the temperature at which they iſſue. Mr. Farey's recent examination and report on Derbyſhire, vol. i. ſhews, that the hot or warm ſprings at Buxton, Matlock Bath, Stoney-Middleton, &c. are ſituated on or near the principal faults or vertical derangements of ſtrata in theſe diſtricts, and the probability that ſhale, brought in contact with toadſtone, in the faces of theſe faults, excites the fermentation, or decompoſition, which developes the conſtant heat of theſe curious ſprings. See MINERAL *Waters*.

HOT *Wall*, in *Gardening*, a term applied to a range or extent of brick or ſtone walling, fronted with glaſs-work, ſo as to incloſe a ſpace of ſeveral feet in width, conſtructed with internal fire-flues, &c. deſigned for forcing fruit-trees to early production. It conſiſts of two parts, the flues and furnace in the wall; and the contrivance of a covering of canvas or netting to protect the trees.

Situations of this nature are moſtly ranged lengthways, eaſt and weſt, to front the full ſun; having the ſouth ſide, or that expoſed to the ſun, covered by a frame-work of glaſs, the whole length and height, including a ſpace of but moderate width, as four, five, ſix, or eight feet for one row of trees behind, trained in the wall-tree order, and extended from twenty or thirty, to forty, fifty, or a hundred feet in length; or of greater width, as ten, twelve, or fifteen feet, in the forcing-houſe manner, to admit of a range of trained trees behind, and others of lower growth forward; and, in either having internal flues for fire-heat in the main-wall, and continued round along towards the front glaſs, or ſometimes ranged longitudinally along the middle ſpace. Some hot-walls have likewiſe the front incloſure of glaſs-work, of ſufficient width to admit of forming an internal pit, from four to five or ſix feet in width, the length of the erection; in which to make a bark-bed, or ſometimes a dung hot-bed, or occaſionally dung below and bark above, to aſſiſt, in conjunction with the fire-heat of the flues, in warming the internal air of them.

And in either method, a border of good mellow, loamy, or other fertile earth of proper width, is formed againſt the main-wall, in which to plant the trees. Where there is no bark-bed, the whole bottom ſpace is formed with good earth, having a narrow incloſure of glaſs, four, five, or ſix feet, to have only a range of trees next the wall, trained as wall-trees, or eſpaliers; or ſometimes made wider, to have wall-trees behind trained to the height of the wall, and others trained, in lower growth, in the internal ſpace forward, either in the eſpalier manner, or as ſmall dwarf-ſtandards, or ſometimes as horizontal dwarfs. See DWARF *Trees*.

When theſe are made of wide dimenſions, either to admit of a bark-pit, or to have the whole bottom ſpace of earth ſet with trees againſt the wall, and others planted forward between theſe and the glaſſes, they may properly be conſidered as forcing-houſes.

But in proper hot-walls, as ſuch as have narrow incloſures of glaſs from four to five or ſix feet in width, containing only one range of trees, they may be trained towards the wall upon a trellis-work, where there is a range of flues immediately next the wall; but where all the flues are ranged forward, the trees may be trained cloſe to the wall. See FORCING-*frame*.

The flues in theſe walls ſhould be formed in ſuch a way as to diſtribute the heat equally over the wall, which is eaſily effected. The fronts of them ſhould be made at leaſt a brick in thickneſs, to preſerve the heat more effectually. The moſt proper furnace for this uſe is that ſold by Mr. Cook in London, and connected with a damper, which is very uſeful. The covering of canvas, gauze, or netting of the ſmall kind, ſhould be fixed to the wall top, by means of ſmall rafters, and to the border, about three feet from the roots of the trees; the roller for containing this covering being faſtened to the bottom parts of theſe rafters. By this means, and the uſe of cords and pullies, ſuch coverings can eaſily be drawn up to the top of the wall, or be rolled down, as there may be occaſion. This covering ſhould never be neglected in ſuch walls, as it is of vaſt utility in preſerving the heat, as well as in preventing the effects of deſtructive froſts and chilly dews at particular ſeaſons. See BARK-*pit*, and PIT.

HOTAMBÆIA, in *Zoology*, the name of a ſpecies of ſerpent found in the Eaſt Indies, of a greyiſh-yellow colour, and very rank ſmell.

HOTCH, in *Agriculture*, a term provincially applied to a bad job of any ſort of work, or to ſuch bargains as do not turn out well.

HOTCH-POT, in *Law*, ſignifies a mixture or blending of lands, given in marriage, with other lands in fee accruing by deſcent. Thus, a man ſeized of thirty acres of land in fee, hath two daughters, and gives with one of them ten acres in frank-marriage, and dies ſeized of the other twenty. If now, ſhe that is thus married will have any part of the twenty acres, ſhe muſt put her lands given in frank-marriage in hotch-pot, that is, ſhe muſt refuſe to take the ſole profits of the ten acres, but ſuffer them to be mingled with the other twenty, ſo that an equal diviſion may be made of the whole thirty between her and her ſiſter. Thus, for her ten acres ſhe will be entitled to fifteen. Coke on Litt.

This was left to the choice of the donee in frank-marriage; and if ſhe did not chuſe to put her lands into hotch-pot, ſhe was preſumed to be ſufficiently provided for, and the reſt of the inheritance was divided among her other ſiſters. The law of hotch-pot took place only, when the other lands deſcending from the anceſtor were fee-ſimple; for if they deſcended in tail, the donee in frank-marriage was entitled to her ſhare, without bringing the lands ſo given into hotch-pot. (Litt. § 274.) And the reaſon is, becauſe lands deſcending in fee-ſimple are diſtributed by the policy of law, for the maintenance of all the daughters; and if one has a ſufficient proviſion out of the ſame inheritance, equal to the reſt, it is not reaſonable that ſhe ſhould have more; but lands deſcending in tail are not diſtributed by the operation of the law, but by the deſignation of the giver, *per formam doni*, however unequal the diſtribution may be.

Alſo no lands, but ſuch as are given in frank-marriage, ſhall be brought into hotch-pot; for no others are looked upon in law as given for the advancement of the woman, or by way of marriage-portion. (Litt. 275.) But gifts in frank-marriage having fallen into diſuſe, it would have been needleſs to mention the law of hotch-pot, if this method of diviſion had not been revived and copied by the ſtatute for diſtribution of perſonal eſtates. See FRANK-*Marriage*, and CUSTOM *of London*.

HOTCH-POTCH, or HODGE-PODGE, from the French *hache en poche*, or, according to Camden, *hachee en pot*, i. e. *boiled in a pot*, primarily denotes a Flemiſh medley diſh, made of fleſh cut in pieces, and ſodden with herbs, roots, &c.

HOTMAN, FRANCIS, in *Biography*, a French civilian, was born at Paris in 1524: at the age of fifteen he was ſent to ſtudy the law at Orleans, where his progreſs was ſo rapid, that within three years he received the doctor's degree. He read lectures at Paris, but quitting the religion in which he was educated, and embracing the Proteſtant ſyſtem, he went to Switzerland, from whence he removed to Straſburg, where he obtained a profeſſorſhip of the civil law. He afterwards engaged in the ſervice of the king of Navarre, and took two journies into Germany, for the purpoſe of obtaining ſuccours from the Proteſtant princes. On his return, he removed to Valence, where his law-lectures revived the credit of the univerſity: after which he was induced to accept a profeſſorſhip at Bourges; this he ſoon reſigned, to partake in the councils of the heads of the Proteſtant party at Orleans; but at the time of the infamous maſſacre of St. Bartholomew he retired to Baſil, where he died, in the year 1590. His works were publiſhed, in 1599, in three volumes folio. He was a learned and profound juriſt, an eloquent hiſtorian, an able politician, and an ingenious man. His works conſiſt, for the moſt part, of tracts relative to the civil law, and to the Roman hiſtory and conſtitution. Bayle.

HOTOM, or KOTAN, in *Geography*, a town of Little Bucharia; 230 miles S.E. of Caſhgar. N. lat. 37° 42′. E. long. 80°.

HOTORE, a town of Bengal; 22 miles E.S.E. of Doeſa.

HOTOWACZYN, a town of Lithuania, in the palatinate of Troki; 16 miles E. of Grodno.

HOTTENPLOZ, a town of Moravia, in the circle of Prerau, inſulated in Sileſia; 12 miles N.N.E. of Jagerndorf.

HOTTENTOT CHERRY, in *Botany*. See CASSINE.

HOTTENTOTS, *Country of*, in *Geography*, a large territory of Africa, and part of Caffraria, bounded on the N. by countries unknown, and on the S.E., S., and W. by the ſea. The coaſt is mountainous, and abounds in capes and bays. The whole country, diſtinguiſhed by this appellation, is inhabited by different tribes of Hottentots, governed by various chiefs, who have no fixed reſidence, but live in huts or portable houſes, and remove their kraals, or villages, whenever the paſture fails to ſupply their cattle, or upon the death of an inhabitant. Ever ſince the eſtabliſhment of the Dutch in the ſouthern part of Africa, they have been ſeparated and diſperſed from the neighbourhood of the Cape of Good Hope; and thoſe who from ill uſage and oppreſſion have been removed to a conſiderable diſtance, or to regions that have been inacceſſible to their purſuers, have maintained ſome ſeparate eſtabliſhments, and retained, in a degree, their primitive habits and manners. The Hottentots are divided from the Caffres or Kaffers by the Great Fiſh river. The diſpoſition and character of theſe people have been much miſrepreſented; and we are indebted principally to Mr. Barrow for a juſt account of them; who has rectified the miſtakes and confirmed the more favourable repreſentations of modern writers. Dr. Sparrman has given the following account of the Hottentots. With regard to their perſons, he ſays, they are as tall as moſt Europeans, and if they are, in general, leſs corpulent, this is owing to their being more ſtinted in their food, and to their not being accuſtomed to hard labour. But that they have ſmall hands and feet compared with the other parts of their bodies has been remarked by no one before, and may, perhaps, be regarded as a characteriſtic mark of this nation. The root of the noſe is for the moſt part very low, by which means the diſtance of the eyes from each other appears to be greater than in Europeans. The tip of the noſe likewiſe is pretty flat. The iris is ſcarcely ever of a light colour, but has a dark brown caſt, which ſometimes approaches to black. Their ſkin is of a yellowiſh-brown hue, reſembling that of an European who has the jaundice in a high degree; however, their colour is not in the leaſt obſervable in the whites of the eyes. One does not find ſuch thick lips among the Hottentots as among their neighbours the Negroes, the Caffres, and the Mozambiques. Their mouths are of a middling ſize, and almoſt always furniſhed with a ſet of the fineſt teeth that can be ſeen, and taken together with the reſt of their features, as well as their ſhape, carriage, and every motion, in ſhort their "tout enſemble," indicate health and content, or at leaſt an air of "ſans ſouci." At the ſame time, this careleſs mien diſcovers marks of alacrity and reſolution; qualities which the Hottentots can occaſionally exhibit. Their heads one would ſuppoſe to be covered with a black, though not very cloſe, frizzled kind of wool, if the natural harſhneſs of it did not ſhew that it was hair, if poſſible, more woolly than that of the negroes. If, in other reſpects, there ſhould, by great chance, be obſerved any traces of a beard, or of hair, on any other parts of the body, ſuch as are ſeen on the Europeans, it is, however, very trifling, and generally of the ſame kind as that on the head. Dr. Sparrman refutes an opinion, which has repreſented the men as being different from others, and adds, that the women have no parts uncommon to the reſt of their ſex. With reſpect to their dreſs, and method of painting themſelves, he remarks, the latter (if painting it may be called) conſiſts in beſmearing their bodies all over moſt copiouſly with fat, in which there is mixed up a little ſoot. This is never wiped off; on the contrary, he never ſaw them uſe any thing to clean their ſkins, excepting that, when in greaſing the wheels of their waggons, their hands were beſmeared with tar and pitch, they uſed to get it off very eaſily with cow dung, at the ſame time rubbing their arms up to the ſhoulders with this coſmetic; ſo that as the duſt and other filth, together with their ſooty ointment and the ſweat of their bodies, muſt neceſſarily, though it is continually wearing off, in ſome meaſure adhere to the ſkin, it contributes not a little to conceal the natural hue of the latter, and at the ſame time to change it from a bright umber-brown to a browniſh-yellow colour, obſcured with filth and naſtineſs. Beſides the pleaſure the Hottentots find in beſmearing their bodies from head to foot, they likewiſe perfume themſelves with powder of herbs, with which they ſprinkle both their heads and bodies, rubbing it all over them when they beſmear themſelves. The odour of it is at the ſame time rank and aromatic, and ſeems to come neareſt to that of the poppy mixed with ſpices. The plants uſed for this purpoſe are different ſpecies of the Dioſma, called by the Hottentots “Bucku,” and conſidered by them as poſſeſſing great virtues in curing diſorders. Some of theſe ſpecies are very common about the Cape; but one particular ſort, which grows about “Goud's-Rivier,” is ſaid to be ſo valuable, that no more than a thimble full of it is given in exchange for a lamb.

The Hottentots, with their ſkins thus beſmeared with greaſe and ſoot, and Bucku-powders, are in a great meaſure defended from the influence of the air, and may in a manner reckon themſelves dreſſed. In other reſpects both men and women appear naked, excepting that a trifling covering always conceals part of their bodies. The covering of the men conſiſts of a bag or purſe made of ſkin, hanging quite open, and only faſtened by a ſmall part of its upper end to a narrow belt, ſo that it is an imperfect covering; and when the wearer of it is in motion, it is no concealment at all. This purſe is called Jackall, from the name of the animal, of whoſe ſkin it is prepared, with the hairy ſide turned outward. As another covering which decency requires the men to uſe, we may alſo conſider two leather ſtraps, generally hanging from the bottom of the chine of the back down upon the thighs, each of them being in the form of an iſoceles triangle, with the points or upper ends faſtened to the belt already mentioned, and with their baſes, about three fingers broad, hanging careleſsly down. Theſe ſtraps make a kind of rattling noiſe, as the Hottentot runs along, and probably by fanning him, produce an agreeable coolneſs. Among the Hottentots, the fair ſex appear to be the moſt modeſt, for the females cover themſelves much more ſcrupulouſly than the men, uſing for this purpoſe two, and very often three coverings, made of a prepared and well-greaſed ſkin, which are faſtened round their bodies with a thong, reſembling the aprons of European females. The outermoſt is always the largeſt, meaſuring in breadth from about 6 to 12 inches. This is frequently adorned with glaſs-beads ſtrung in different figures, thus indicating among the unpoliſhed Hottentots not only a regard to neatneſs and decorum, but powers of invention, and a diſpoſition to ſet off their perſons to the beſt advantage. The outermoſt apron reaches about half way down the thighs, and is chiefly intended for ornament. The middle one is about a third or one-half leſs, and is regarded by them as an additional entrenchment of modeſty, when their gala garment is laid aſide. The third, or innermoſt, about the ſize of one's hand, is ſaid to be uſeful at certain periods, which are much leſs troubleſome to the fair ſex here than in Europe. All theſe aprons, however, and even that which is decorated with beads, are not leſs beſmeared and greaſy than their bodies. The garment worn by the Hottentots for covering their bodies is a ſheep-ſkin, with the woolly ſide turned inwards; this peliſſe, or elſe a cloak made of ſome ſmaller fur, is tied forwards over the breaſt, and worn looſe, or wrapped round them, as far as below the knees, according to the ſtate of the weather. In general, the Hottentots do not burden themſelves with many changes of their cloaks, or “kroſſes,” (as they call them in broken Dutch), but are content with one, which ſerves them both for cloathing and bedding; and in this they lie on the bare ground, covered with this kroſs or karoſs. The cloak, or karoſs, of the woman differs little from that of the men, except that their's has a little hood or pouch, with the hairy ſide inwards, in which they carry their infants, to which they now and then throw the breaſt over their ſhoulders. The men have ſeldom any peculiar covering on their heads. The women likewiſe go bare-headed: but when they uſe any covering, it is a cap in form of a truncated cone, made of ſome animal's ſtomach, and as black as ſoot, mixed with fat, can make it. Over this they ſometimes wear a kind of oval wreath, or a crown made of a buffalo's hide, with the brown hair upwards, about four fingers high, and ſurrounding the head ſo as to reach a little way down upon the forehead and the neck behind. The rims of this wreath, above and below, are ornamented with a row of ſmall ſhells of the Cypræa kind, in number about 30, and placed quite cloſe, ſo that their beautiful white enamel, together with their mouths, is turned outwards. Between theſe two rows of ſhells, there are others diſpoſed as their fancy ſuggeſts. The ears of the Hottentots are never adorned with any pendant or ornament, any more than the noſe, according to the cuſtom of other ſavages: the latter, however, is ſometimes marked with a black ſtreak of ſoot, or a large ſpot of red lead; and on high days and holidays they put ſome of the latter on their cheeks. The necks of the men are bare; but thoſe of the women are decked with an ornament, held in high eſtimation, which conſiſts of a thong of undreſſed leather, upon which are ſtrung eight or ten ſhells. Theſe ſhells are commonly ſold for not leſs than a ſheep a-piece, as it is ſaid they are procured no where elſe than on the moſt diſtant coaſt of Caffraria. On their arms and legs they wear rings, and this ornament is uſed by both ſexes. Theſe rings are made of leather ſtraps, formed in a circular ſhape. This ornament has given occaſion to the almoſt univerſally received report, that the Hottentots wrap guts about their legs, in order to eat them occaſionally. The men wear from one to five or ſix of theſe rings on their arms, but ſeldom any on their legs. Theſe rings are of various thickneſſes; and to the matrons of higher rank, who have them both on their arms and legs, they give great trouble both in the preparation and uſe of them. Rings of iron and copper, and eſpecially of braſs, of the ſize of a gooſe-quill, are conſidered as more handſome and more valuable than thoſe of leather. The girls are not allowed to wear any rings till they are marriageable. The Hottentots ſeldom wear any ſhoes: thoſe in occaſional uſe are made of undreſſed leather, with the hairy ſide outwards; which leather undergoes no other preparation beſides that of being beaten and moiſtened with cow-dung and ſome kind of greaſe. The Hottentots who live within the boundaries of the Dutch colonies ſeldom make uſe of any weapons; here and there they furniſh themſelves with javelins, as a defence againſt the wolves: theſe are called "Haſſagais." The habitations of the Hottentots are like their dreſs, adapted to the wandering paſtoral life. They ſcarcely merit any other name than that of huts. In a Hottentot kraal or village the huts are built exactly alike, ſo that the equality of fortune and happineſs among theſe people excludes mutual jealouſy and envy. Some of theſe huts are circular, others of an oblong ſhape, reſembling a rural bee-hive or a vault. The ground plot is from 18 to 24 feet in diameter: the higheſt of them are ſo low, that even in the centre of the hut, a middle-ſized man cannot ſtand upright. The door is barely three feet high; but the Hottentot finds no difficulty in ſtooping and crawling on all fours, as he is always more inclined to lie down than to ſtand. The fireplace is in the middle of each hut, and therefore when they ſit or rather lie in a circle round the fire, the whole company equally enjoy the benefit of its warmth. The door is the only part of the hut that lets in day-light, and it is the only outlet for ſmoke. The frame of the arched roof is compoſed of ſlender rods and ſprays of trees, which, previouſly bent into a proper form, are laid, parallel to each other, or croſs-wiſe; and theſe are ſtrengthened by binding others round them in a circular form with withies. Theſe withies, as well as the rods themſelves, are taken chiefly from the "Cliffortia conoides," which grows plentifully in this country near the rivers. Large mats are then laid very neatly over this lattice-work, ſo as perfectly to cover the whole. The aperture of the door is cloſed when occaſion requires, with a ſkin fitted to it, or a piece of matting. The mats are made of cane or reed, faſtened together with ſinews or catgut, or ſome kind of packthread procured from the Europeans. When a Hottentot has a mind to take down his houſe and remove his dwelling, he lays all his mats, ſkins, and ſprays, on the backs of his cattle. The order or diſtribution of theſe tents in a kraal or clan is moſt frequently in the form of a circle, with the doors inwards; by theſe means a kind of yard or court is formed, where the cattle are kept at night. The milk, as ſoon as it is taken from the cow, is put to other milk which is curdled, and is kept in a leather ſack; of this the hairy ſide, being conſidered as the cleanlier, is turned inwards; ſo that the milk is never drank while it is ſweet. In certain northern diſtricts, ſuch as Roggeveld, or Bokkeveld, where the land is, as it is called, Karrow (which ſee), or dry and parched, the Hottentots, as well as the coloniſts, are ſhepherds.

From the account of the Hottentots given by Mr. Barrow it appears, that the neglect or oppreſſion with which they have been treated by the coloniſts has contributed to corrupt and degrade them. Having firſt held out the irreſiſtible charm which ſpirituous liquors and tobacco are found to poſſeſs among all people in a rude ſtate of ſociety, they took the advantage of exchanging thoſe pernicious poiſons for the only means the natives enjoyed of ſubſiſting themſelves and their families; and inſtead of inſtructing and encouraging a race of men of willing and intelligent mind to renew the means of ſubſiſtence of which they had deprived them, they imported at a vaſt expence a number of Malay ſlaves, not more expert and much leſs to be depended on than the Hottentots, to whom, indeed, they even preferred the ſtupid negroes of Moſambique and Madagaſcar. That they are capable of inſtruction and improvement, both mental and moral, appears from the laudable eſtabliſhment of the Herrnhüters or Moravian miſſionaries, who, by the protection afforded them under the Britiſh government, and its liberality, through general Dundas, in enabling them to enlarge their territory, had ſucceeded ſo far, in the object of their miſſion, as to bring together into one ſociety not fewer, at the time of the evacuation of the colony, than 600 poor Hottentots; whom they not only inſtructed in the principles of the Chriſtian religion, but by example as well as by precept taught to feel, that their value in ſociety was in proportion to the benefit they were able to render to that ſociety, by their labour and moral conduct. On the contrary, when they experienced a treatment leſs favourable than that of the meaneſt ſlaves, and were employed with a view merely to the benefit of thoſe who had poſſeſſion of their country, and were neither paid, clothed, nor fed, they exhibited on the ſame ſpot a ſcene of filth and wretchedneſs; they became a nuiſance to the town, and of courſe it became neceſſary to diſband them. Sir James Craig bears honourable teſtimony to the diſpoſition and conduct of thoſe Hottentots whom he formed into a corps. He repreſents them as contented and grateful, as intelligent and docile; no more addicted to drunkenneſs than our own people, nor invincibly diſpoſed to rove and abandon the ſervice aſſigned them. By degrees they became cleanly in their perſons; the practice of beſmearing themſelves with greaſe being entirely left off; and they frequently waſhed themſelves in a rivulet, where they could have in view no other object but cleanlineſs.

Other miſſionaries, ſays Mr. Barrow, but of different ſocieties, have lately proceeded to very diſtant parts of the colony, and ſome even much beyond it, both among the Kaffers to the eaſtward, and the Boſjeſman Hottentots to the northward: the latter they repreſent as a docile and tractable people, inexpreſſibly grateful to their benefactors; but they ſay, the Kaffers are a volatile race, extremely good humoured, and ridiculing all their attempts to convert them to Chriſtianity. A Hottentot, ſays the ſame ingenious writer, among the many good qualities he poſſeſſes, has one which he is maſter of in an eminent degree; that is, a rigid adherence to truth. When accuſed of a crime of which he has been guilty, with native ſimplicity he always ſtates the fact as it happened; but at the ſame time he is always ready with a juſtification of what he has done. From lying and ſtealing, the predominant and inſeparable vices of the condition of ſlavery, the Hottentots may be conſidered as exempt. "In the whole courſe of my travels, and in the midſt of the numerous attendants of this nation, with which I was conſtantly ſurrounded, I can with ſafety declare that I never was robbed nor deceived by any of them." Of the ſeverity of the treatment which theſe poor people received from the ſavage boors of the country, we have many inſtances on record. We ſhall content ourſelves with mentioning only one. A young Hottentot woman, with a child in her arms, was found lying ſtretched on the ground in a moſt deplorable condition; ſhe had been cut from head to foot with one of thoſe infernal whips made of the hide of a rhinoceros or ſea-cow, known by the name of "Samboes," in ſuch a barbarous and unmerciful manner, that there was ſcarcely a ſpot on her whole body free from ſtripes; nor had the ſides of the little infant, in clinging to its mother, eſcaped the ſtrokes of the brutal monſter. For ſeveral days after ſhe was taken care of, there were little hopes of her recovery; though by means of a good conſtitution and tender treatment ſhe did afterwards recover. And what does the reader ſuppoſe could have been the atrocious crime that demanded ſuch chaſtiſement? The only crime alleged againſt her was the attempt to follow her huſband, who was among the number of thoſe of his countrymen that had determined to throw themſelves upon the protection of the Engliſh. A Hottentot is capable of ſtrong attachments ; with a readineſs to acknowledge, he poſſeſſes the mind to feel the force of a benevolent action. "I never found," ſays Mr. Barrow, "that any little act of kindneſs or attention was thrown away upon a Hottentot ; but on the contrary, I have frequently had occaſion to remark the joy that ſparkled on his countenance, whenever an opportunity occurred to enable him to diſcharge his debt of gratitude. I give full credit to all that Monſieur le Vaillant has ſaid with regard to the fidelity and attachment he experienced from this race of men ; of whom the natural character and diſpoſition ſeem to approach nearer to that of the Hindus than of any other nation."

Dr. Sparrman mentions a tribe of Hottentots, called "Boſhmans," or "Boſheiſmen," who live round about Camdebo and Sneeuwberg, who are ſworn enemies to the paſtoral life, and who live on hunting and plunder. Their weapons are poiſoned arrows, which, ſhot out of a ſmall bow, will fly to the diſtance of 200 paces, and will hit a mark with a tolerable degree of certainty at the diſtance of 50 or even 100 paces. From this diſtance they can by ſtealth, as it were, kill the game they hunt for food, as well as their foes, and even ſo large and tremendous a beaſt as the lion. Their bows are hardly a yard long, and about an inch thick in the middle, and very much pointed at both ends. The ſtrings of the bows are ſinews, or a kind of hemp, or the inner bark of ſome vegetable. The arrows are a foot and a half long, made of reed, armed with a highly poliſhed bone five or ſix inches long. At the diſtance of an inch or two from the tip of this bone, a piece of quill is bound very faſt with ſinews, ſo that the arrow may not be eaſily drawn out of the fleſh, and thus the poiſon inſinuates itſelf and infects the wound. Their quivers are two feet long, and four inches in diameter. Beſides a dozen of arrows, every quiver contains a ſlender hone of ſand-ſtone for whetting the iron head, and a bruſh for laying on the poiſon. The poiſon is taken from ſeveral different kinds of ſerpents, and the more venomous they are, the better. The dwellings of theſe foes to a paſtoral life are generally not more agreeable than their manners. Like the wild beaſts, buſhes and clefts in rocks by turns ſerve them inſtead of houſes ; and ſome of them are ſaid to be ſo far worſe than beaſts, that their ſoil has been found cloſe to their habitations. Many of them are entirely naked ; and others cover their bodies with ſuch ſkins of animals as they are able to procure. As ignorant of agriculture as apes and monkies, like them they are obliged to wander about over hills and dales after certain wild roots, berries, and plants, which they eat raw. Their tables are ſometimes covered with the larvæ of inſects, ſnakes, and ſpiders. The capture of ſlaves from this race of men is eaſily effected. For this purpoſe, ſeveral farmers, who are in want of ſervants, join together, and take a journey to that part of the country where the Boſhieſmen live. They themſelves, as well as their Lego-Hottentots, or ſuch Boſhieſmen as have been caught ſome time before, and have been trained up to fidelity in their ſervice, endeavour to ſpy out where the wild Boſhieſmen have their haunts, which is beſt diſcovered by the ſmoke of their fires. They are found in ſocieties from 10 to 50 and 100. The farmers in a dark night ſet upon them, notwithſtanding their numbers, with ſix or eight people, having previouſly ſtationed themſelves at ſome diſtance round about the kraal. They then give the alarm by firing a gun or two. The ſavages are thus terrified ; ſome of them make their eſcape by flight ; others are ſtupid and timorous, and ſuffer themſelves to be captured. Theſe are treated at firſt kindly, and plentifully fed with various kinds of game ; ſupplied with tobacco, and induced to accompany the coloniſt to his place of abode. Their luxurious feaſts of meat and fat are then exchanged for butter milk, frumenty, and haſty-pudding. With this change of fare, and a correſponding alteration of uſage, they very ſenſibly feel the hardſhip of their condition, and make every effort in their power to eſcape.

The language of the Hottentots is ſaid to be a compoſition of ſtrange and diſagreeable ſounds, reſembling rather the noiſe of irritated turkies, the chattering of magpies, hooting of owls, than human ſound or articulation, and depending on extraordinary vibrations, inflections, and claſhings of the tongue againſt the palate ; and therefore it is no wonder that it ſhould be underſtood by few, and that the knowledge of it can ſcarcely be acquired by perſons of any other nation. As to their religion, it does not appear that they poſſeſs any, or that till of late any pains have been taken by their invaders and conquerors to afford them any inſtruction. Addicted to magic, they have among them abundance of witches and conjurers, and under bodily diſorders they run to them for relief ; and as their wizards employ both internal and external remedies, they are ſometimes ſucceſsful, but they more frequently fail in adminiſtering efficacious remedies. Deſtitute, as they are ſaid to be, of any religious principles, they ſeem to have ſome ideas of a future ſtate. Some have ſaid that they worſhip a genus of inſects called "Mantis," and others have affirmed that they pay a kind of adoration to the moon ; but theſe reports have not been duly authenticated. See Paterſon's Narrative of four Journies into the Country of the Hottentots, &c. 4to. 1789. Barrow's Travels in Africa, vol. i. and ii. See BOOSHOOANAS, CAFFRARIA, KAFFERS, KOUSSIS. See alſo CAPE OF GOOD HOPE.

HOTTENTOT *Holland*, a diſtrict of Southern Africa, which is a continuation of what is called the Sand Down, being a large tract of country lying between the Table bay, and bay Falſe. Moſt of it is uninhabitable, on account of a white ſand blown up by the S.E. winds in very large ridges. There are, however, many ſhrubs diſperſed in different parts. It is the principal place whence they procure their fire-wood at the Cape. This territory is ſituated on the N.E. ſide of bay Falſe, and ſurrounded on three ſides by lofty mountains ; but open to the S.W. where the bay is in view. The ſoil is not ſo good for vines as moſt other places on this ſide of the mountains, being wet and marſhy ; but it produces excellent corn. Here is one of the moſt difficult paſſes into the country, called "Hottentot Holland's Kloof ;" *kloaf* or *kloof* denoting a narrow paſs through the mountains. This high chain of mountains terminates the Cape iſthmus, and at a few miles to the ſouthward of the Kloof it forms the eaſtern boundary of the extenſive bay Falſe. This Kloof is a narrow road cut through the hill, the ſummit of which appears to be nearly of a height with the Table land. The chain of mountains, commencing at cape Falſe, or the Hang-Lip, extends to the N.W. for nearly 300 miles ; and from 20 to 40 miles from the ſea. Several other branches from this chain extend to the interior parts of the country.

HOTTERRE, in *Biography*, born in Italy of French parents, was an excellent performer on the flute, and publiſhed an elementary work on that inſtrument that was much eſteemed. He likewiſe publiſhed another work, entitled "L'Art de Preluder," the art of preluding.

There was a Mad. Hotterre, about the year 1740, who played well on the violin.

HOTTINGER, JOHN HENRY, was born at Zurich, in Switzerland, in the year 1620. His love of learning was ſo remarkable, that he was ſent to foreign countries for education at the public expence. He viſited ſeveral parts of Europe, and at his return was made profeſſor of eccleſiaſtical hiſtory and the Oriental languages. He was appointed chaplain to the embaſſy of the ſtates-general to Conſtantinople in 1641; but the magiſtrates of Zurich would not permit him to accept of it, chooſing rather to recal him home, that his learning, talents, and zeal might be employed for the glory and advantage of their own public ſchools. He was engaged by the elector palatine to reſtore the univerſity of Heidelberg. While he was preparing for his journey to Holland, he was unfortunately drowned in the river which runs through Zurich, in conſequence of the overſetting of a boat, in which he was proceeding to an eſtate that he had at the diſtance of two leagues from that city. This event took place in 1667, when he was little more than forty-ſeven years of age. He was author of forty volumes on different ſubjects, the titles of the moſt important are given by Bayle. His ſon John James was profeſſor of theology at Zurich, and author of many practical pieces.

HOTTONIA, in *Botany*, a genus dedicated, by Boerhaave, to Peter Hotton, the predeceſſor of that illuſtrious phyſician in the botanical chair at Leyden. The ſucceſſor of Hotton did not beſtow this name upon the plant in queſtion without ſetting forth in a brief though cordial manner the virtues and qualifications of its prototype.—Boerh. Hort. Lugd. v. 1. 206. Linn. Gen. 82. Schreb. 108. Willd. Sp. Pl. v. 1. 812. Mart. Mill. Dict. v. 2. Sm. Fl. Brit. v. 1. 226. Ait. Hort. Kew. v. 1. 197. Juſſ. 95. Lamarck Dict. v. 3 137. Illuſtr. t. 100.—Claſs and order, *Pentandria Monogynia*. Nat. Ord. *Preciæ*, Linn. *Lyſimachiæ*, Juſſ.

Gen Ch. *Cal.* Perianth inferior, of one leaf, in five, linear, ſomewhat ſpreading ſegments. *Cor.* of one petal, ſalver-ſhaped; tube as long as the calyx; limb divided into five, flat, ovate-oblong, emarginate ſegments. *Stam.* Filaments five, awl-ſhaped, ſhort, erect, oppoſite to the diviſions of the corolla, and inſerted into the tube; anthers oblong. *Piſt.* Germen ſuperior, globoſe, pointed; ſtyle thread-ſhaped, ſhort; ſtigma globoſe. *Peric.* Capſule globular, pointed, of one cell, placed on the calyx. *Seeds* numerous; receptacle globoſe, large.

Eſſ. Ch. Corolla ſalver-ſhaped. Stamens inſerted into the margin of the tube oppoſite to the ſegments. Capſule of one cell. Stigma globoſe. Calyx five-cleft.

Obſ. The number of ſegments in the corolla, and conſequently of the ſtamens, is often much greater than the generic character deſcribes.

1. *H. paluſtris.* Featherfoil, or Water violet.—Linn. Sp. Pl. 208. Engl. Bot. t. 364. Curt. Lond. faſc. 1. t. 11. —" Stalk bearing many flowers in whorls."—A native of this country, found in clear ſtreams and ditches, flowering in June and July. *Root* perennial, creeping. *Stems* erect, naked, many-flowered, leafy at the baſe. *Leaves* bright-green, elegantly and deeply pinnatifid or pectinated, ſmooth, growing under water. *Spike* denſe, of ſeveral whorls, more or leſs diſtant, one above the other, riſing nearly a foot above the ſurface; partial ſtalks ſingle-flowered, bracteated. *Flowers* bluſh-coloured, with ſix, ſeven, or eight ſegments and as many ſtamens. *Capſule* globular, with many ſeeds on a globoſe receptacle.—The beauty and elegance of this plant have been very juſtly commended both by Dr. Smith in his Engliſh Botany, and Mr. Curtis in the *Flora Londinenſis;* indeed the former author ſays "that it may vie with many of the moſt admired exotics in elegance, having indeed, like ſome other European aquatics, very much the air of a tropical plant."

A very beautiful variety of this, with flowers of a deep roſe colour, was diſcovered near Kelmarſh in Northamptonſhire by the late Mr. Hanbury, F.L.S.

It appears to us that the three other ſpecies mentioned by Willdenow are at beſt very doubtful. *H. indica,* a plant concerning which the moſt intelligent botaniſts have always had doubts, becauſe of its habit, is made into a new genus under the name of *Limnophila* by Mr. R. Brown, *Prod.* v. 1. 442. We are unacquainted with the *ſerrata* of Willdenow, or the *ſeſſiliflora* of Vahl; but by their deſcriptions the former at leaſt ſeems to be a *Limnophila,* and probably the latter alſo.

HOTTS, or Hutts, pounces, and round balls of leather ſtuffed or tied on the ſharp ends of fighting-cocks' ſpurs, to keep them from hurting one another in ſparring or breathing themſelves.

HOTY, in *Geography*, a town of Sweden, in the province of Blekingen; 21 miles W. of Carlſcrona.

HOTZEMPLOTZ, a town of Moravia, inſulated in Sileſia; 20 miles N. of Troppau. N. lat. 50° 12'. E. long. 17° 35'.

HOU, a village of Egypt, on the left bank of the Nile, ſituated upon the eminence, on which, as it is ſaid, the ancient city of *Dioſpolis Parva* was built. (See Diospolis.) Rubbiſh, large bricks, and ſtones ſtill larger, the remains of a dike, and an arcade, which forms an entrance to a ſubterraneous conduit, are the ſole traces now remaining of the ancient works; 28 miles S. of Girgé. N. lat. 26° 2'. E. long. 31° 27'.

HOVA, a town of Sweden, in Weſt Gothland; 18 miles N. of Marieſtad.

HOUAC, or Houat, an iſland in the Engliſh channel, about eight miles in circumference, defended by a fort; ſeven miles N.E. of Belle-Iſle. N. lat. 47° 24'. W. long. 2° 52'.

HOUAL, or Oualo, a kingdom of Africa, ſituated on the banks of the Senegal, and on the coaſt of the Atlantic, 90 miles from E. to W., and 18 from N. to S. The ſoil is rich and fertile, producing in the greateſt abundance maize, rice, indigo, tobacco, and cotton; the meadows feed a great number of cattle, large and ſmall, whoſe fleſh is excellent; game is plentiful; birds are numerous and various; and the foreſts abound with palm-trees. The king of the country aſſumes the title of "brak" or emperor; and was formerly very powerful, but of late is reduced to a low ſtate, being frequently in want of millet for his ſupport. When he is occaſionally rouſed from his natural indolence, he aſſembles his courtiers, travels with them through the villages of his kingdom, eats the proviſions which he can find; drives away the cattle, and expoſes the owners to public ſale.

HOUARD de la Mothe, Antony, in *Biography*, a law antiquary, was born at Dieppe in 1725, and died at Abbeville in 1803. He was member of the Academy of Inſcriptions, and an aſſociate of the National Inſtitute. His works are, 1. "Anciennes Lois des François, conſervées dans les Coûtumes Angloiſes," two vols. 4to. 2. "Traité ſur les Coûtumes Anglo-Normandes, &c." four vols. 4to.

HOVAREIN, in *Geography*, a town of the deſert of Syria; 70 miles S.W. of Palmyra.

HOUBIGANT, Charles Francis, in *Biography*, was born at Paris in 1686, was educated for the church, and became a prieſt of the Oratory. He diſtinguiſhed himſelf for his profound knowledge of the Hebrew ſcriptures, which he tranſlated into the Latin language with notes, publiſhed at Paris in 4 vols. folio 1753. He died in 1783. He was author of many other pieces, among which are "A

Dictionary, French and Hebrew," 8vo.; "Examination of the Pſalter of the Capuchins;" and "A Tranſlation of biſhop Sherlock's Sermons."

HOUCHONG, in *Geography*, a town of Meckley; 18 miles W. of Munnypour.

HOUDAIN, a town of France, in the department of the ſtraits of Calais, and chief place of a canton, in the diſtrict of Bethune; ſix miles S. of Bethune. The place contains 1000, and the canton 13,603 inhabitants, on a territory of 220 kiliometres, in 31 communes.

HOUDAN, a town of France, in the department of the Seine and Oiſe, and chief place of a canton, in the diſtrict of Mantes; 10 miles S. of Mantes. The place contains 1700, and the canton 12,392 inhabitants, on a territory of 232½ kiliometres, in 31 communes.

HOUDAN, a ſmall iſland on the North ſea, near the coaſt of Norway. N. lat. 61° 40′.

HOVE, in *Rural Economy*, a term employed to denote the riſing or ſwelling which ſometimes takes place in cheeſes, ſoon after they are made, in conſequence of their taking on a ſlight degree of fermentation. The chief remedy in this caſe is the frequent turning of ſuch cheeſes in order to get them dry as expeditiouſly as poſſible. See CHEESE and DAIRYING.

The term is likewiſe applied to the peculiar ſwelling in neat cattle and ſheep, which proceeds from the feeding too greedily upon ſome ſort of luxuriant green food, ſuch as red clover, &c. See HOVEN.

HOVE, in *Geography*, a town of Norway, in the dioceſe of Drontheim; 25 miles N.W. of Drontheim.

HOUEILLES, a town of France, in the department of the Lot and Garonne, and chief place of a canton, in the diſtrict of Nerac; ſeven miles S. of Caſtel-Jaloux. The place contains 607, and the canton 4001 inhabitants, on a territory of 335 kiliometres, in nine communes.

HOVEL, a town of Weſtphalia, in the biſhopric of Paderborn; ſix miles N.W. of Lippſpring.

HOVEL, in *Rural Economy*, the name of a kind of ſhed or low building, which has ſome part of it conſtantly open below; but which is covered above. It is uſeful for young animals of the horſe, neat cattle and ſheep kinds to run into, as there may be occaſion, for protection, during the ſtormy winter months.

HOVELLING, in *Architecture*, is a method of working up the ſides of a chimney, and covering the top with tiles or bricks, ſet up in a pyramidical form, ſo that the ſmoke may eſcape below the current, when the wind makes over the chimney, or againſt any one ſide of it. This is uſed to prevent the inconvenience ariſing from adjoining buildings higher than the chimney, or from its being in the eddy of any very lofty building, or in the vicinity of high trees: the covered ſide muſt in this caſe be kept towards the building which occaſions the inconvenience.

HOVEN, in *Rural Economy*, a term applied to a peculiar ſort of diſtention or ſwelling taking place in the ſtomachs of neat cattle, ſheep, and ſome other animals, in conſequence of the ſudden extrication of air, proceeding from the decompoſition of green ſucculent food, which they have conſumed too greedily and in too large quantities; ſuch, for inſtance, as red clover, fog, or rank-graſs, &c. See CLOVER.

In this caſe, the chief remedy is evidently the diſcharge of the confined air from the ſtomach of the animal; which in ſlight affections may be often accompliſhed by the uſe of ſuch ſubſtances as have a tendency to retard or ſtop the progreſs of the fermentative proceſs, or to force off the *flatus*. Much benefit in theſe intentions has been obtained from the giving of large doſes of prepared ammonia in mixture with ſome ſort of ſpirituous liquor; and other ſimilar remedies.

This affection has been ſuppoſed, in an able paper in the twenty-ninth volume of Young's Annals, to principally proceed from the diſtention of the firſt ſtomach of the animals by the carbonic acid gas or fixed air that is diſengaged from ſuch tender juicy graſſes, by their decompoſition; the after diſcharge of it by the gullet being prevented by ſome ſort of contraction occurring about the upper orifice of the ſtomach. It is added that the dangerous and frequently fatal effects that ſucceed the diſtention are not to be aſcribed to the air, or juices of the fermented graſs, acting as poiſons upon the ſtomach, for moderate quantities of either of them produce no bad effects: beſides, the reiterated experience of the grazier has clearly ſhewn, that cattle, in many inſtances, are immediately relieved and preſerved by the properly ſtabbing them with a ſharp-pointed knife, and letting the air eſcape in that way. It is, of courſe, concluded, that cattle may be ſaved with certainty, if the air be drawn off in due time, without injuring the ſtomach or bowels. This is ſuggeſted as capable of being done with facility, by paſſing a flexible tube through the gullet into the ſtomach. A tube of iron wire is adviſed as the moſt proper for the purpoſe, which has about one-ſixteenth of an inch diameter, and formed by twiſting it round a ſmooth iron rod three-eighths of an inch in diameter; being afterwards covered with ſmooth leather. That end of the tube which is to be paſſed into the ſtomach, ſhould have a braſs pipe of the ſame ſize, or rather larger, and two inches in length, firmly faſtened to it, and pierced with large holes in ſufficient number. In order to prevent the too much bending of the tube in the mouth or gullet in paſſing it down, an iron wire one-eighth of an inch in diameter, and of equal length with the tube, ſhould be introduced into it; being withdrawn upon the tube entering the ſtomach. It is found, that the ſpace from the fore teeth, to the bottom of the firſt ſtomach of a large ſized ox, is about ſix feet; and a tube five feet nine inches in length has been paſſed into the gullet of a living ox. A proper tube ſhould conſequently be ſix feet in length to ſucceed perfectly in all caſes. When the tube has been thus introduced it may remain for any length of time, as it does not inconvenience the breathing of the animal. By means of this tube, moſt part of the elaſtic and condenſed air may be diſcharged from the ſtomach; and where neceſſary, ardent ſpirits, or any other fluid proper for checking fermentation, be thrown through it into the ſtomach. In this way, the air is not only more certainly diſcharged than by the practice of ſtabbing, but the danger which it cauſes is obviated; this danger does not ariſe ſo much from the irritation of the wound, as the air, and other contents of the ſtomach inſinuating themſelves into the cavity of the belly, betwixt the containing parts and the bowels, and thereby creating ſuch a ſtate of inflammation as may prove fatal to the animal.

This tube is equally applicable to ſheep, when properly adapted in ſize; and not leſs beneficial in the removal of the affection. It is perfectly ſimple, and readily conſtructed by any common workman. Such tubes are however ſold, ready for uſe, in London and other places.

Wooden tubes, ſomewhat of this nature, have been contrived, and brought forward under the encouragement of the Society of Arts, by Mr. Eager, for the purpoſe of removing this ſort of diſtention in the ſtomachs of animals. They conſiſt of knobs of wood firmly attached to portions of cane of different lengths, for ſuiting different ſorts of animals, repreſentations of which may be ſeen in the annexed plate. It is directed by the inventor, that ſuch beaſts as are hoven, or ſwollen, ſhould be laid hold of by a perſon by the noſtril and one horn, while with one hand an aſſiſtant ſteadily ſecures the tongue, and with the other puſhes the cane quite down into the ſtomach. Care ſhould be had, not to let the animal get the knob of the tube between his grinders. Some reſiſtance is generally afforded to the tube about the entrance of the ſtomach, which requires a little additional force in paſſing it; as ſoon as a fœtid ſmell is found to be diſcharged, and the ſize of the body of the animal to be diminiſhed, nothing further is requiſite, as nature will effect the reſt. The ſucceſs of this method has been fully confirmed by different ſtock-farmers.

The common practice of attempting the removal of this affection by the making an inciſion or puncture by means of a pen-knife between the ſhort ribs, and fixing a pipe of ſome ſort in it to afford paſſage to the confined air, ſecuring the whole by adheſive plaiſter from the effects of the atmoſphere, is generally the reſult of real neceſſity, but often liable to be attended with fatal conſequences, from the want of knowledge, or inexpertneſs of the perſon who performs the operation. In order to ſucceed, it ſhould be done on the left ſide, about the mid-way between the ſhort ribs and the hip-bone, a long ſlender knife being employed for the purpoſe, and thruſt to the depth of from four to five inches. The operation is ſometimes denominated *paunching*, and ſhould be always carefully executed.

Oily remedies have likewiſe been had recourſe to in the view of removing theſe ſorts of ſwellings in the ſtomachs of animals; ſuch as olive oil, and butter, or lard, melted and blended together, but they can ſeldom be much depended upon, though aſſerted to produce relief in a ſpeedy manner by ſome.

It is a good method to prevent the diſeaſe taking place as much as poſſible, by properly managing the ſtock in firſt turning them upon ſuch luxuriant paſtures. This ſhould be done, when they are the leaſt preſſed by hunger, in order that they may be the ſooneſt ſatisfied with food; and when there is the leaſt dew upon the graſſes. It is alſo a good practice, in this view, to only let the animals remain a ſhort time at once upon ſuch paſtures; and ſome adviſe their being frequently driven about in them; though much injury muſt neceſſarily be done to the graſs in this way. See Clover.

HOVEDEN, Roger de, in *Biography*, an Engliſh hiſtorian, who flouriſhed in the reign of Henry II. was born at York. Having received an education ſuitable to the purpoſe, he became a profeſſor of theology at Oxford. He was likewiſe a lawyer, and is ſaid to have ſerved the king in the capacity of chaplain, and alſo in other confidential offices. It was not till the death of Henry that he applied himſelf particularly to the compilation of Engliſh hiſtory. He wrote in the Latin language, commencing his annals with the year 731, the period at which Bede finiſhes, and coming down to the third year of John, A.D. 1201. His work was printed at London in 1595, in ſir Henry Saville's "Collection of ancient Engliſh Hiſtorians," and at Frankfort in 1601 Of ſo much authority was it that Edward I. cauſed ſtrict ſearch to be made in all the libraries for copies of it, in order to aſcertain the homage due to the crown of Scotland.

HOVENIA, in *Botany*, ſo named by Thunberg, in compliment to one of the patrons of his expedition to Japan, David ten Hoven, a ſenator of Amſterdam.—Thunb. Nov. Gen. 7. Japon. 7. Schreb. 148. Willd. Sp. Pl. v. 1. 1141. Mart. Mill. Dict. v. 2. Juſſ. 381. Lamarck. Illuſtr. t. 131.—Claſs and order, *Pentandria Monogynia*. Nat. Ord. *Dumoſæ*, Linn. *Rhamni*, Juſſ.

Gen. Ch. *Cal.* Perianth inferior, of one leaf, hairy at the baſe within-ſide, permanent; its border in five deep, ovate, reflexed, deciduous ſegments. *Cor.* Petals five, inſerted betwixt the ſegments of the calyx, and equal to them in length, obovate, very obtuſe, convoluted, enfolding the ſtamens. *Stam.* Filaments five, inſerted into the baſe of the calyx, and ſhorter than its border; anthers roundiſh, concealed by the petals. *Piſt.* Germen ſuperior, roundiſh; ſtyle erect, much ſhorter than the calyx; ſtigmas three, obtuſe, ſpreading, a little reflexed. *Peric.* Capſule globoſe, ſlightly ovate, with three furrows, three valves, and three cells. *Seeds* ſolitary, lenticular, very ſmooth.

Obſ. Sometimes, though rarely, the flowers are four-cleft and tetrandrous.

Eſſ. Ch. Calyx with five deep deciduous teeth. Petals five, convoluted. Stigmas three. Capſule ſuperior, with three valves and three cells. Seeds ſolitary.

1. H. *dulcis*. Thunb. Jap. 101. (Sieku, vulgò Ken, and Kenpokonas; Kæmpf. Amœn. Exot. 808. t. 809.) A *tree*, reſembling a middle-ſized pear-tree, found near Nagaſaki in Japan, flowering from June to Auguſt, and ripening fruit in November and December. The *branches* are round, ſmooth, ſomewhat zig-zag. *Leaves* alternate, ſtalked, ovate, pointed, finely ſerrated, ſmooth, with a ſtrong mid-rib, two ſmaller lateral ones, and many veins. *Flowers* ſmall, white, in forked, terminal or axillary, panicles, whoſe ſtalks, after the flowers fade, become very remarkably juicy, with a ſweet red fleſh, which is eaten by the Japaneſe, and compared by Thunberg to the taſte of a pear. The partial *flower-ſtalks*, immediately under the calyx, remain unchanged and ſlender, ſuſtaining the drooping *capſules*, which are the ſize of a pepper-corn, with red *ſeeds*.

HOVER Ground, in *Agriculture*, a term applied in many diſtricts to land which has a light friable ſoil.

HOUFFALIZE, in *Geography*, a town of France, in the department of the Foreſts, and chief place of a canton, in the diſtrict of Neufchateau, ſeated on on a ſmall river which runs into the Ourte; 30 miles S. of Liege. The place contains 759, and the canton 6266 inhabitants, on a territory of 250 kiliometres, in 16 communes.

HOUGH, John, in *Biography*, an Engliſh prelate, was born in the year 1650. He received his claſſical education at the ſchool of Birmingham, whence he was ſent to Oxford, where he was elected a demy at Magdalen college in 1669. Here he took his degrees, and afterwards became fellow of his college. In 1676 he proceeded M.A. and having entered into holy orders, officiated ſome time at North Aſton, in the dioceſe of Oxford. In 1681 he accompanied the duke of Ormond to Ireland, from whence he returned the following year, and in 1685 he was appointed prebendary of Worceſter, which promotion was ſoon followed by his preſentation to the rectory of Ternsford, in Bedfordſhire. In 1687 he made a firm ſtand againſt James II.'s arbitrary attempt to impoſe a preſident upon his college. By his noble example the fellows were encouraged to reject his majeſty's mandamus in favour of Antony Farmer, a convert to the Popiſh religion; they made choice of Mr. Hough to that office; and as a majority concurred in electing him, he had ſpirit enough to accept it, in defiance of the royal order. His election was regularly confirmed by the biſhop of Wincheſter, viſitor of the college; and in the ſame year he was admitted to the degree of doctor of divinity. This bold ſtep of Dr. Hough may be regarded as the commencement of that clerical reſiſtance to the tyrannical proceedings of king James, which contributed not a little to bring about the revolution. The worthy doctor was, however, almoſt inſtantly deprived of his preſidentſhip, by the order of James, who commanded the commiſſioners to inſtal Dr. Parker, biſhop of Oxford, in his room. Twenty-five of the fellows refuſed to ſign a ſubmiſſion to their new preſident, who, on that account, were, with Dr. Hough, expelled the college, and declared incapable of being admitted to any eccleſiaſtical dignity or benefice. In the following year, the prince of Orange's declaration was received in England, and the king, with the hope of regaining the affections of the clergy, thought it prudent to recede from his illegal and arbitrary proceedings. An order was accordingly paſſed to reſtore Magdalen college to its rights; and Dr. Hough was replaced in his preſidentſhip by a commiſſion for that purpoſe, directed by the king himſelf to the viſitor. After the revolution, Dr. Hough was nominated by king William to the biſhopric of Oxford, with which he was allowed to hold the preſidentſhip in commendam; in 1699 he was tranſlated from the ſee of Oxford to that of Litchfield and Coventry; and in 1715 he was offered the archbiſhopric of Canterbury, which, through diffidence in himſelf, he declined. In 1717 he was raiſed to the ſee of Worceſter; and, notwithſtanding he was then 67 years of age, he preſided over Worceſter 26 years, conſtantly reſiding in his dioceſe, and diſcharging with fidelity and zeal all the epiſcopal functions. He died in 1743, without pain or ſickneſs, but quite exhauſted, full of days and honour. He was a very munificent prelate, and expended on his epiſcopal palaces upwards of 7000*l.* His private benefactions were very extenſive, and his hoſpitality ſuch as became his ſtation as a father of his people. Biog. Brit.

Hough, in *Animals*, the name of the bending or ply of the hind leg, which alſo compriſes the part behind but oppoſite to the ply, uſually denominated the *hock.* This point or part, in the horſe, ſhould be full, and not too crooked, in order to conſtitute a well formed leg.

To Hough, *or cut the houghs*, is to ham-ſtring, or to diſable by cutting the ſinews of the ham.

Hough, *Bony*, is a hard, round ſwelling, or tumour, growing upon the tip or elbow of the hough.

It generally proceeds from ſome ſtroke or bruiſe; and if neglected till the ſubſtance of the ſwelling becomes hard, like glue, it proves difficult to cure.

Hough, in *Nautical Affairs*, is a name for the ſquare head of ſome ſorts of barges, thoſe, for inſtance, which are uſed for carrying coals on the Thames, at London.

HOULIERES, Antoniette du Liger de la Garde, des, in *Biography*, a diſtinguiſhed French poeteſs, was born at Paris in 16 8. Her talents for writing French verſe were firſt excited and cultivated by the preſident Henault. She married Lafon ſeigneur des Houlieres, ſoon after which ſhe was arreſted at Bruſſels by order of the Spaniſh government, and carried as a priſoner of ſtate to the caſtle of Wilvorden, from thence ſhe was releaſed through the artifice of her huſband. She came to Paris, and attracted round her a circle of admirers and men of wit. Becoming a widow ſhe fell into indigent circumſtances. At length ſhe obtained a ſmall penſion, and ſolaced herſelf with ſtudy, and acquired the knowledge of the Latin, Italian, and Spaniſh languages, the beſt authors in which ſhe read with facility. She died in 1694. Her poems were collected in two volumes in 1724, and reprinted in 1747, in two volumes 12mo. They conſiſt of idylls, eclogues, odes, epigrams, and the tragedy of Genſeric. The idylls are accounted the beſt compoſitions of the claſs in the French language. She has been charged with groſs plagiariſm.

HOULLIER. See Hollerius.

HOUMA, in *Geography*, a town of Aſiatic Turkey, in the province of Natolia; 21 miles S.E. of Kara-hiſer.

HOUMIRI, in *Botany*, Aublet. Guian. v. 1. 564. t. 225. (Houmiria; Juſſ. 435.) Red-gum tree, or Red wood, of Guiana. See Myrodendrum.

HOUN, in *Geography*, a town of Africa, in Fezzan; 10 miles S. of Wadan.

HOUNA, a cape and village of Scotland, on the N. coaſt of the county of Caithneſs; two miles W. of Duncanſby Head. N. lat. 58° 33′. W. long. 2° 57′.

HOUND, *canis venaticus*, a hunting-dog. See Dog.

Hounds may be diſtinguiſhed, with regard to the manner of their hunting, into ſuch as find out and purſue the game by ſight, and the quickneſs and ſwiftneſs of their motion; of which kind are the *gaze-hound, agaſæus;* and *grey-hound, canis graius;* the *terrier*, &c. And thoſe which find and purſue the game by the goodneſs of their ſmell.

The ſpecies of ſcenting-dogs may be divided further: into *hounds*, ſimply ſo called, and *blood-hounds;* each whereof admits of ſome diverſities.

1. As to *hounds*, ſimply thus called, thoſe which are all of one colour, as white, black, &c. are moſt valued; then thoſe ſpotted with red; the white with black ears, and a black ſpot at the ſetting on of the tail, are generally eſteemed the beſt for compoſing a kennel, and are of the beſt ſcent and condition; thoſe ſpotted with dun are leſs prized, as uſually wanting courage and boldneſs. The black-tanned, or the all liver-coloured, or all white, the true talbots, are beſt for the ſtring or line; and the grizzled, whether mixed or unmixed, if their hairs are ſhagged, are uſually the beſt runners. There ſhould always be a couple of theſe in the pack. *Fallow-hounds* are of good ſcent, and hardy, not fearing the water; they keep the chace well, without change; but are not ſo ſwift as the white; they love the hart above any other chace, having little ſtomach for the hare, &c. whence they are not ſo fit for private gentlemen; beſides that, they are apt to run at tame beaſts.

The *dun hounds* are of a more general uſe, being fit for all chaces. Their ſagacity and fidelity in knowing and ſticking to their maſter's voice and horn, and to none elſe, are much admired; they alſo underſtand each other, and know which are babblers, which liars, &c. They are of different ſizes and qualities in the ſeveral countries, &c. Mountainous and woodland parts breed a tall heavy ſort, called *ſlow-hounds;* moderate ſoils, where the champain and covert ſhare pretty equally, produce a middle-ſized hound of a nimbler make. The ancients laid a greater ſtreſs on colour than the moderns, with whom it is a kind of fixed opinion, that the colour of a good hound, or a good horſe, is unimportant.

The marks of a good and fair hound are to be of a middle proportion, rather long than round, the noſtrils wide, back bowed, fillets great, haunches large, ham ſtraight, tail big near the reins, and the reſt ſlender to the end, the leg big, the ſole dry, and claws large. See Dog.

The legs of a good fox-hound, ſays Mr. Daniel in his "Rural Sports," ſhould be ſtraight as arrows; his feet round, and not too large; his ſhoulders ſhould lie back; his breaſt rather wide than narrow; his cheſt deep; his back broad; his neck thin; his head ſmall; his tail thick and buſhy; and if he carries it well, this circumſtance will add to his comelineſs. Although a ſmall head is mentioned as one of the requiſites of a fox-hound, this is to be underſtood merely in its relation to beauty: for as to goodneſs, large-headed hounds are in no reſpect inferior. The middle-ſized hounds are reckoned the ſtrongeſt and beſt able to endure fatigue. With regard to their ſhape, it is preſumed that they muſt all agree: and in order to exhibit a good appearance, they ſhould be nearly of a ſize; if they appear of the ſame family it will be an addition, and if they are alſo handſome, they are deemed perfect as far as appearance is concerned. It is of great importance in the ſhape of a hound that it ſhould exhibit a perfect ſymmetry: for if this be not the caſe, he will neither run faſt nor bear hard work; much ſpeed is required, and he ſhould poſſeſs adequate ſtrength. A prepoſſeſſion will always occur in favour of that ſort of hound to which the ſportſmen have been moſt accuſtomed: thoſe who have uſually hunted with the ſharp-noſed, will hardly allow a large-headed hound to be a fox-hound, although both are equally ſo. Speed and beauty are the chief excellencies of the former; whilſt ſtoutneſs and tenderneſs of noſe in hunting characterize the latter. Very good ſport may be had with unſeemly hounds, where a great difference in ſize and look is apparent, but a gentleman, anxious that his hounds ſhould be complete, will not be ſatisfied with ſuch a pack: hounds ſhould run well together, and this cannot ſo well be attained as by uniting as early as poſſible, thoſe of the ſame ſort, ſize, and ſhape. Packs conſiſting of various kinds of hounds ſeldom run well together, although they may frequently kill their fox; but it is the "ſtyle" of killing which conſtitutes celebrity among ſportſmen. The great excellence in a pack of fox-hounds is the "head" they carry, conſidered in a collective body: they go faſt in proportion to the excellence of their noſes and the head they carry, and that pack may be ſaid to go the faſteſt, which can run ten miles the ſooneſt, notwithſtanding the hounds, ſeparately, may not be ſo ſpeedy as many others. Some hounds creep through the ſame hole, inſtead of *topping* the fence, and follow one another in a ſtring, as true as a team of cart-horſes. Mr. Beckford, with conciſeneſs and neatneſs, has deſcribed in what manner they ought to be "like the horſes of the Sun, *all abreaſt*." Five and twenty couple of hounds are ſufficient at any time to be taken into the field, as being a match for any fox, ſuppoſing them ſteady, and their ſpeed nearly equal. Too many hounds always do more miſchief than ſervice. When packs are very extenſive, the hounds are ſeldom ſufficiently hunted to be good. Where many hounds are kept, either a large pack muſt be taken out, or a great number of hounds be left behind: in the firſt caſe, too many hounds in the field will probably ſpoil the diverſion, and, ſecondly, hounds long idle, always get out of wind, and not unfrequently become riotous. Forty couple of hunting hounds will admit of hunting three times a week, twenty-five couple being the uſual allotment for the field. Hounds to be ſteady muſt be conſtantly hunted: young ones in particular ſhould never be left at home while able to hunt: the lame, the old, thoſe low in fleſh, and ſuch as idleneſs cannot injure, may be ſuffered to remain quiet. Hounds that are meant to run well together, ſhould never have too many old hounds amongſt them; five or ſix ſeaſons generally deſtroying their ſpeed.

The *breeding* of hounds is an object of great importance. In reſpect of the breed of hounds, no country equals our own; and it is remarkable, that the hounds procured from England ſhould degenerate in another climate. In order to preſerve this ſuperiority, the ſize, ſhape, colour, conſtitution, and natural diſpoſition, as well as the fineneſs of the noſe, the ſtoutneſs and method of hunting of the dog, from which the breed is taken, ſhould be duly conſidered.

Nothing is more eſſential to the having a good pack of hounds, than a proper care of the whelps, and of the parents from which they are to be bred.

The bitches, in particular, ſhould be carefully choſen, and ſhould be ſuch as are the ſtrongeſt and beſt proportioned; they muſt alſo have large ribs and flanks.

The beſt ſeaſon for the coupling of hounds is in January, February, or March; for then they will litter in a good time of the year, that is, in ſpring; ſo that they will be fit to enter in due courſe, without loſs of time, or of the ſeaſon; for if bitches litter in winter, it is very difficult to bring up the whelps, the cold killing them if there is not great care taken of them. If poſſible, have no whelps later than April, as late puppies ſeldom thrive. Of the early ones five or ſix ſhould be kept; of the late ones, not more than half the number.

The dogs that line the bitches muſt not be above five years old; for if they are older than this, the young ones will be dull and heavy. Care ſhould be taken to have a proper dog ready the firſt time of the bitch's going proud; for it is affirmed by many, who ſay they have experience for it, that whatever kind of dog lines a bitch the firſt time, there will be one puppy at leaſt in all her ſucceeding litters that will have ſome reſemblance of him.

On no account breed from a hound that is not ſtout, that is not tender-noſed, or that is either a babler or a ſkirter. Babling is one of the worſt faults of which a hound can be guilty; and ſkirting hounds, where game is plentiful, are always changing, and occaſion the loſs of more foxes than they kill. It is the judicious *croſs* that renders the pack complete: the imperfection on one ſide may be rectified on the other, and if this be attended to, and a croſs hit found, purſue it. The breeding from young doghounds after the firſt ſeaſon, who have beauty and goodneſs to recommend them, to ſee what whelps they get, is a proper trial. Never put an old dog to an old bitch, and take care that thoſe from which you breed be in good health. In breeding, the beſt bitches ſhould be ſent to the beſt dogs, wherever they may be; and thus thoſe who breed only a few hounds may have a good pack, whilſt thoſe who breed many, (if at the ſame time they underſtand the buſineſs,) reduce it to a certainty.

The firſt litter of puppies that a bitch brings, are never eſteemed ſo good as the ſecond or third. When a bitch has been lined, and grows big with whelps, ſhe is not to be ſuffered to hunt among the pack, nor to take any other violent exerciſe; for that would endanger her caſting her whelps; ſhe ſhould be kept up and fed well, and a good place ſhould be provided for her to litter in.

As ſoon as ſhe has littered, thoſe which are intended to be kept, ſhould be ſelected out, and the reſt immediately drowned. There is great difficulty in chooſing the beſt at this early time; but the general opinion gives it for thoſe which are the lighteſt, that they will be the ſwifteſt and beſt as they grow up.

Others take all the whelps away; and having determined what number they will keep, they ſettle the choice on thoſe which the bitch carries back firſt to the place where ſhe littered. But all this ſeems very uncertain. Others ſelect that which was pupped laſt.

Should one bitch have more whelps than ſhe can rear, ſome of them may be put to another bitch, and thus a favourite ſort may be preſerved. In like manner, if only one or two are produced, by ſhifting thoſe puppies to another bitch, the former will be ſoon fit to hunt again: but ſhe ſhould be firſt phyſicked, and her dugs waſhed with brandy and water. Should the bitch refuſe to take the ſtrange puppies, by killing one of her own, and rubbing the ſtrangers with a little of the blood, ſhe will lick and immediately receive them. The bitches ſhould be well fed with fleſh, and have alſo plenty of milk, nor ſhould the puppies be taken from them till they are able to feed themſelves. When the puppies are taken away, the bitches ſhould have three purging balls given them, one every other morning, and plenty of whey the intermediate day.

The whelps muſt have good freſh ſtraw to lie in, and it muſt be often changed. They are to be kept in a place where neither the rain nor ſun-ſhine can be troubleſome to them; and once a week it will be proper to anoint them all over with a little nut-oil, with ſome ſaffron infuſed in it. This will prevent the flies from annoying them ſo much as they otherwiſe would, and will kill worms of all kinds. When they are fifteen days old, it is the cuſtom to worm them, and a week after one joint of their ſtern ſhould be twiſted off. As ſoon as they can ſee, they ſhould have milk given them to lap; and at ſix weeks or two months old they muſt be weaned, keeping them wholly from the bitch; they muſt at this time be well kept, but not too high fed; and it is proper to put ſome cumin ſeed into their food, to keep the wind out of their bellies.

Many let the whelps of their hounds ſuck three months, and then ſend them away to villages to be bred up till they are ten months old, cautioning thoſe people who have the care of them, not to let them eat carrion, nor frequent warrens.

Rye-bread is a very common food for young hounds, and is particularly recommended by many, but wrongly; for it ſoon paſſes through them, and gives them very little nouriſhment. When they are fed conſtantly with this, in the time of their growing up, they always become narrow-backed; and this is a great fault in this ſort of dog; a broad back being one of the greateſt recommendations in a hound. Wheat-bread is greatly preferable on all accounts for the food of the young hound, giving him ſtrength and firmneſs.

At ten months old they are to be taken home, and put into the company of the others, to live as they do; and after a few weeks keeping company with the reſt, they are to be coupled, and to go out to hunt.

Hounds are commonly named when firſt put out, and the uſual mode is to name all the whelps of one litter with the ſame initial letter as that of the dog that got them, or the bitch who bred them. Young hounds ſhould be marked in the ſide (which is termed *branding* them) with the initial letter of their owner's name; and this will prevent their being ſtolen, or facilitate the recovery of them when they are loſt. Young hounds ought to be fed twice a day, morning and evening. It is adviſable not to round them till they are well ſettled in the kennel, nor in very hot weather, leſt they bleed too freely. It may perhaps be better to round them, whilſt at walk, when about ſix months old; if it were done ſooner, it would make their ears tuck up. They ſhould not be rounded whilſt they have the diſtemper, as the loſs of blood would too much weaken them. (See *Diſeaſes of* DOGS.) If any of the young dogs be thin over the back, or more quarrelſome than others, it will be of uſe to cut them. Such bitches alſo as are ill loined, and that are not wanted for the purpoſe of breeding, ſhould be ſpayed: they are then conſtantly ſerviceable, ſtouter, and always in better order. Beſides, if a pack hunt late in the ſpring, it will be very ſhort without hounds of the above deſcription. The operation ſhould be performed by a perſon of ſkill. There is a difference of opinion whether a bitch ſhould be ſpayed *before* or *after* ſhe has had a litter of puppies; both periods have anſwered: the beſt time is 14 or 15 days after ſhe has taken the dog, and when the puppies juſt begin to be knotted within her: all the roots of the veins ſhould not be taken away, as her ſtrength and ſwiftneſs will be injured by ſo doing: they ſhould be kept low for ſeveral days *before* the operation is performed, and fed on thin meat for ſome time *after*.

For the method of entering young hounds, ſee ENTRANCE.

For the terms uſed with reſpect to hounds, their noiſes, &c. ſee HUNTING.

The hounds moſtly uſed for hare-hunting are the deep-tongued, thick-lipped, broad and long-hung ſouthern hounds: the fleet ſharp-noſed dog, ears narrow, deep-cheſted, with thin ſhoulders, ſhewing a quarter croſs of the fox-hound: the rough wire-haired hound, thick quartered, well hung, and not too much fleſh on his ſhoulders: and the rough or ſmooth beagle. Each of theſe ſorts has its excellencies, nor can one be juſtly commended as ſuperior to the other; the preference muſt depend on the prevalent inclination of the ſportſman.

He that delights in a ſix hours chace, and to be up with the dogs all the time, ſhould breed from the Southern hounds firſt mentioned, or from that heavy ſort which gentlemen uſe in the weald of Suſſex; their cry is a good and deep baſs muſic, and conſidering how dirty the country is, the diverſion they afford to thoſe who are on foot for a day together, renders them in high eſtimation; they generally pack well from their equality of ſpeed, and at the leaſt default, every noſe is upon the ground in an inſtant to recover the ſcent.

In an open country, where there is good riding, the ſecond ſort is to be preferred; their tongues are harmonious, and at the ſame time they go ſo faſt, as to prevent a hare from playing many tricks before them; they ſeldom allow her time to loiter and make much work; ſhe muſt run and continue her foiling, or change her ground; if the latter ſhe is ſoon killed, for freſh ground, eſpecially on turf, is, in ſome degree, one continued view. It is difficult, however, to procure a pack of faſt hounds that run evenly together; ſome are uſually found to tail, and their exertions to keep up to the leading hounds, make them of little uſe, farther than enlarging the cry, unleſs when the ſcent is over-ran, then hounds thrown out or tailed, often come up, and hit off the fault.

It is very common for the fleeteſt hound to be the greateſt favourite, but let a hound be ever ſo good in his own nature, his excellence is obſcured in that pack which is too ſlow for him. At moſt times there is work enough for every hound in the field, and each ought to bear a part; but this it is impoſſible for the heavy hounds to do, if run out of wind by the diſproportionate ſpeed of a leading hound; for it is not ſufficient for hounds to run up, which a good hound will labour hard for, but they ſhould be able to do ſo with eaſe, with retention of breath and ſpirits, and with their tongues at command; it can never be expected that any ſcent can be well followed by hounds that do not carry a *good head*. It is too frequent a practice in numerous kennels, to keep ſome for their muſic, others for their beauty, who at beſt are ſilly and trifling, without noſe or ſagacity; this is wrong, for it is a certain maxim, that every dog which does no good, ſerves only to foil the ground and confound the ſcent, by ſcampering before or interrupting their betters in the moſt difficult points. Five couple of truſty hounds will do more execution than thirty where half of them are eager and head-ſtrong.

The third ſort are ſcarce, and an entire kennel of them ſeldom ſeen; they are of Northern breed, and by many eſteemed for the chace of the otter and marten, and in ſome places are encouraged for that of the fox; but they are bad to breed from, being ſubject to produce thick, heavy-ſhouldered dogs unfit for the chace. See BEAGLE.

In the choice of a hound the dog of a middling ſize is recommended, with his back broader than round: noſe large with wide noſtrils, cheſt deep and capacious, fillets great and high, haunches large, hams ſtraight, feet round, the ſole hard and dry, claws large, ears wide, thin, and more round than ſharp, eyes full, forehead prominent, and upper lips thick and deeper than the lower jaw.

Much may be ſaid for or againſt the ſeveral kinds of harriers, but to ſum up the whole conciſely, ſtaunch hounds of any ſort are deſirable; whoever has them of nearly equal age and ſpeed, with the further requiſites of packing and hunting well together, whether Southern, Northern, Foxſtrain, or Beagle, can boaſt an advantage in the diverſion, which few gentlemen (with every attention to their breed) ever attain, but at a great expence of both time and money.

As to the method of breeding hounds, too much care cannot be taken in the choice of the ſires from which the whelps are wanted; a very little inattention ſpoils the litter, which ſometimes proves degenerate, although from as high bred a dog and bitch as can be put together, and where every danger of a ſpurious croſs has been completely guarded againſt.

Young hounds ſhould be entered as near the time when they are a twelvemonth old as poſſible, and they ſhould be entered at the game they are deſigned to hunt, as moſt dogs prefer that game they were firſt blooded with, and encouraged to purſue. See *Hare* HUNTING.

2. The *grey-hound*, or *leporarius*, or *canis venaticus graius*, might deſerve the firſt place, on account of his ſwiftneſs, ſtrength, and ſagacity, in purſuing his game; ſuch being the nature of this dog, that he is ſpeedy and quick of foot to follow, fierce and ſtrong to overcome, yet ſilent, coming upon his prey unawares.

Dr. Caius derives the name of the *grey-hound*, or *gre-hound*, from its being the firſt in rank among dogs; and that it was formerly ſo eſteemed, appears from the foreſt-laws of king Canute, who enacted, that no one under the degree of a gentleman ſhould preſume to keep a grey-hound. The varieties of this ſpecies are the *Italian* grey-hound, which is ſmall and ſmooth, and the *Oriental*, which is tall and ſlender, with very pendulous ears, and very long hairs on the tail, hanging down a great length. There was formerly a variety, called the *Highland* grey-hound, which is now become very ſcarce, of a very great ſize, ſtrong, deep-cheſted, and covered with long and ſtrong hair. See DOG

The make and proportions required in a good grey-hound, arrived at the age of two years, when he is full grown, are, that he have a fine ſkin, a body neither too long nor too great, ſtrong and pretty large, a long lean head, with a noſe ſharp from the eyes downwards, ſparkling eyes, with large eye-lids, a long neck, bending like a drake, and ſharp teeth, little ears, with thin griſtles in them, a ſtraight, broad, and ſtrong breaſt, a back ſtraight and ſquare with a riſing in the middle, his fore legs ſtraight and ſhort, his hind legs long and ſtraight, a round foot with large clefts, broad ſhoulders, round ribs, with a long ſpace between his hips, fleſhy buttocks, but not fat, and a long tail, ſtrong and full of ſinews.

The old couplets that deſcribe this ſpecies of dogs were exact in the points they recommended, as neceſſary to form a complete grey-hound.

"Head like a *ſnake*,
Neck'd like a *drake*,
Back'd like a *beam*,
Sided like a *bream*,
Tailed like a *rat*,
And footed like a *cat*"

Of this kind, thoſe are always fitteſt to be choſen among the whelps that weigh lighteſt; for they will be ſooner at the game, and ſo hang upon it, hindering its ſwiftneſs, till the heavier and ſtrong *hounds* come in to offer their aſſiſtance; whence, beſides what has been already ſaid, it is requiſite for a grey-hound to have large ſides, and a broad midriff, that he may take his breath in and out the more eaſily; his belly ſhould alſo be ſmall, which otherwiſe would obſtruct the ſwiftneſs of his courſe; and his hairs thin and ſoft.

The huntſman is to lead theſe hounds on his left hand, if he be on foot; and on the right, if on horſeback. The beſt time to try and train them to the game, is at twelve months old, though ſome begin ſooner, and enter and try the females at ten months old, which laſt are ſaid to be generally more ſwift than the dogs; they ſhould be kept in a ſlip while abroad, till they ſee their courſe; neither ſhould you looſen a young dog till the game has been a conſiderable time on foot, he being apt, by over eagerneſs at the prey, to ſtrain his limbs.

The grey-hound is the beſt uſed in open countries where there is little covert; in theſe places there will ſometimes be a courſe after a hare of two miles or more, and both the dogs and the game in ſight all the while. It is generally ſuppoſed, that the grey-hound bitch will beat the dog in running; but this ſeems to be an error, for the dog is both longer made, and conſiderably ſtronger than the bitch of the ſame kind.

In the breeding of theſe dogs the bitch is principally to be regarded; for it is found by experience, that the beſt dog with a bad bitch, will not get ſo good puppies as an indifferent dog with a good bitch. The dog and bitch ſhould be as nearly as can be of the ſame age; and for the breeding of perfect and fine dogs, they ſhould not be more than four years old; an old bitch may be uſed with a young dog, but the puppies of a young bitch and an old dog will never be good for any thing.

The general food of a grey-hound ought to be chippings or raſpings of bread, with ſoft bones and griſtles; and theſe chippings ought always to be ſoaked in beef or mutton broth; and when it is nearly cool, ſome milk ſhould be added: this given the dog morning and evening will keep him in good heart and ſpirits; he muſt never have any hard bones given him, becauſe they harden his mouth, and hurt his teeth. If the dog grows ſick and weakly upon this diet, then take ſheep's heads with the wool on, waſh them clean, and boil them in a ſufficient quantity of water, to make a very rich and ſtrong broth, and add a large quantity of oat-meal to it. When the meat is very tender, and the broth rich, it is good and fit for the dog; and giving him ſometimes the one, and ſometimes the other, will very ſoon recover him. The kennel ſhould be airy, and the door towards the ſouth, the benches 2½ feet, with holes bored to carry off the urine; the ſtraw on the benches ſhould be frequently changed, and the kennel kept extremely clean. See KENNEL.

If one of theſe dogs is to run for a wager, or on any particular occaſion, he may be dieted with the following bread: take half a peck of good wheat, and the ſame quantity of the fineſt and drieſt oat-meal; grind theſe together, and let the meal be ſifted very fine; then add as much liquorice and aniſeeds, in powder, as will not give it too diſagreeable a flavour; and knead the whole into dough with the whites of eggs and new ale. This ſhould be baked in ſmall loaves conſiderably hard; and when the dog is to be fed with it, it is to be ſoaked in beef or other broth. He is to be led out to walk half an hour after ſun-riſe every morning, and half an hour before ſun-ſet every evening, and at his coming in fed with this ſoaked bread. The proper exerciſe for a grey-hound is the courſing him three times a week, and rewarding him with the blood of the hare, which will animate him in the higheſt degree, and encourage him to proſecute his game. But the hare alſo ſhould ever have fair play; ſhe ſhould have the law, as it is called, that is, have leave to run twelve ſcore yards before the dog is ſlipped at her, that he may have ſome difficulty in the courſe, and not pick up the game too eaſily. If he kill the hare he muſt never be ſuffered to tear her, but ſhe muſt be taken from him, his mouth cleaned of the wool, and the liver and lights given him by way of encouragement. Then he is to be led home, and his feet are to be waſhed with butter and beer, or rather with water and ſalt, and about an hour after he is to be fed. See Entrance.

When the dog is to be taken out to courſe, he ſhould have nothing in the morning but a toaſt and butter, and then he is to be kennelled till taken out to the field. The kennelling of theſe dogs is of great uſe, always giving them ſpirit and nimbleneſs when they are let looſe; and the beſt way of managing a fine grey-hound is never to let him ſtir out of the kennel, except at the times of feeding, walking, or courſing.

With reſpect to the ſwiftneſs of the grey-hound, the following queſtions were ſubmitted to a gentleman, whoſe grey-hounds are known to be as ſwift as any in the kingdom. Whether the ſpeed of a grey-hound is equal to that of a firſt rate race horſe for the diſtance of a mile, or for a greater or a ſmaller diſtance? and, whether the ſpeed of any hare (ſuppoſing the dog and hare to be ſtarted without the law uſually allowed to the hare in courſing) is equal to that of the grey-hound, and to what diſtance, within that of a mile, the hare could exert that ſuperiority of ſpeed, ſuppoſing the hare to be the faſteſt animal of the two? His opinion was, that upon a flat, a firſt rate horſe would be ſuperior to the grey-hound, but in a hilly country, as in Wiltſhire, a good grey-hound would have the advantage; on the ſecond point, that although he had ſeen many hares go away from grey-hounds, laid cloſe in with them, without a turn, yet he believes a capital grey-hound (ſo laid in) would not ſuffer a hare to run from him without turning her. An incident, however, occurred in December 1800, which brought the ſpeed of the grey-hound and race horſe into competition. A match was to have been run over Doncaſter courſe for one hundred guineas, but one of the horſes having been drawn, a mare ſtarted alone to make good the bet, and after having gone the diſtance of about a mile, a grey-hound bitch ſtarted from the ſide of the courſe, and ran with her the other three miles, keeping nearly head to head, which produced a ſingular race, and when they arrived at the diſtance-poſt, five to four was betted on the grey-hound; when they came to the ſtand it was even betting. The mare won by about a head.

In February 1800, a brace of grey-hounds in Lincolnſhire ran a hare from her ſeat to where killed, a diſtance, meaſuring ſtraight, upwards of four miles, in twelve minutes; during the courſe there was a great number of turns, which very conſiderably increaſed the ſpace gone over; the hare ran herſelf dead before the grey-hounds touched her; this extenſive courſe, in ſo ſhort a time, is a ſtrong proof of the ſtrength and ſwiftneſs of the hare. Horſes have been as much diſtreſſed in keeping up for their riders to ſee a courſe, as in much longer chaces with hounds. The compiler (ſays Mr. Daniel) recollects a hare being found cloſe to the town of Bottiſham, in Cambridgeſhire, and which took away for the ſix mile bottom, twenty-two horſes ſtarted, but only one could make a gallop at the concluſion of the courſe; the hare (who was within fifty paces of the cover) was dead ſome yards before the grey-hounds, who were obliged to be bled to recover them.

The remark made during his troubles, by the unfortunate Charles I. upon the grey-hound's affability, was juſt as applied to the animal, and a keen ſatire upon thoſe that ſurrounded him; a diſcourſe aroſe reſpecting what ſort of dogs deſerved pre-eminence, and every one allowed it to belong to the ſpaniel or the grey-hound. The monarch gave his opinion in the grey-hound's behalf, becauſe (ſaid he) it has all the good nature of the ſpaniel, without the *fawning*.

Many inſtances might be mentioned of the high ſpirit and courage, as well as uncommon ardour and velocity of grey-hounds. If it be aſked, what is allowed at the preſent day to be the beſt breed of them? The blood of the late lord Orford's dogs engrafted into thoſe of Wiltſhire and Yorkſhire has turned out the beſt grey-hounds. Allowing for ſome exceptions, it is generally imagined that grey-hounds croſſed from the fore-mentioned blood have proved themſelves ſuperior to others.

3. The *gaze-hound*, or *beagle*, is a dog more beholden to the ſharpneſs of his ſight, than his noſe or ſmelling; by virtue of which he makes excellent ſport with the deer and hare. He is alſo noted as exquiſite in chooſing of one that is not lank or lean, but full, fat, and round, which, if it happen to return, and be mingled again with the reſidue of the herd, he will ſoon ſpy out, and leave the reſt untouched, never ceaſing, after he has ſeparated it from its company, and till he has wearied it to death.

Theſe dogs were much uſed in the north of England, and on champain ground, rather than buſhy and woody places, and by horſemen more than footmen. If at any time he happen to take a wrong way, upon the uſual ſign made by his maſter, he immediately returns, takes the right and ready courſe, beginning his chace afreſh, with a clear voice, and ſwift foot, following the game with as much courage as at firſt.

This ſpecies, which was the *agaſæus* of Dr. Caius, ſays Mr. Pennant, is now loſt, or at leaſt unknown to us; and it is very different from the *agaſæus* of Oppian, which is our *beagle*, which ſee. See alſo Dog.

4. The *blood-hound*, or *canis ſagax* of Linnæus, differs nothing in quality from the *Scottiſh ſlut hound*, derived from the Saxon *ſlot*, the impreſſion which a deer leaves of its foot in the mire, and *hund*, a *dog*, ſaving that it is longer ſhaped, and not always of the ſame colour, but ſometimes red, ſanded, black, white-ſpotted, &c. though moſt commonly either brown or red.

Their nature is, that being ſet on by the voice and words of their leader, to caſt about for the ſitting of the preſent game, and having found it, they will never ceaſe purſuing it with full cry, till it be tired, without changing for any other.

They ſeldom bark, except in their chace, and are very obedient and attentive to the voice of their leader. Thoſe that are really good, when they have found the hare, make ſhow thereof to the huntſman by running more ſpeedily, and with geſture of head, eyes, ears, and tail, winding to the form or hare's muſe, never giving over proſecution, and running with a gallant noiſe.

They have good and hard feet, and ſtately ſtomachs, and are very properly denominated *ſanguinary* or *blood-hounds*, on account of their extraordinary ſcent; for if their game be only wounded, ſo that it eſcape the huntſman's hands, or if it be killed, and never ſo cleanly carried away, theſe dogs, by their exquiſite ſmell, will diſcover it, and not be wanting, either by nimbleneſs or greedineſs, to come at it, provided there be any ſtains of blood. Nay, though by all the cunning and foreſight imaginable, a beaſt be conveyed away without ſpot or blood, yet through the roughest and moſt crooked ways and meanders, this dog will find out the deer-ſtealer, and, even in the thickeſt throng, will, by his ſmell, ſeparate and pick him out.

The blood-hound was in great requeſt on the confines of England and Scotland, where the borderers were continually preying on the herds and flocks of their neighbours. The true blood-hound, ſays Mr. Pennant, was large, ſtrong, muſcular, broad-breaſted, of a ſtern countenance, of a deep tan-colour, and generally marked with a black ſpot above each eye. See Dog.

5. The *terrier*, or *tarrier*, only hunts the fox or badger; being thus called, becauſe after the manner of a ferret in ſearching for coneys he leaps into the ground, and affrights or attacks the beaſts, either tearing them in pieces, or haling them out by force; or, at leaſt, driving them out of their harbours to be taken in a net, or otherwiſe. See Dog.

The huntſmen have commonly a couple of terriers, that they may put in a freſh one, as occaſion ſerves, to relieve the other.

The time of entering the terrier is when he is near a twelvemonth old: if it be not done within that time, he will hardly be brought to take the earth. This entering and fleſhing of them may be performed ſeveral ways. Firſt when the foxes and badgers have young cubs, take an old terrier, ſet him into the ground, and when he begins to bay, hold the young one at the hole or mouth of the earth, that he may liſten and hear the old one's bay. The old fox or badger being taken, ſo that nothing remains within but the cubs, couple up the old ones, and put in the young in their ſteads, encouraging them by crying *to him, to him.* If they take any cub within, let them do with it what they liſt; not forgetting to give the old terriers their reward, which is blood and livers, fried with cheeſe, and ſome of their greaſe; ſhewing them alſo heads and ſkins to encourage them.

Hound-*fiſh*, in *Ichthyology*, (ſee Squalus *muſtelus*,) the ſmooth hound-fiſh, or hound-ſhark.

Hound *Point*, in *Geography*, a cape of Scotland in the Frith of Forth, and N. coaſt of the county of Linlithgow; ſeven miles W.N.W. of Leith.

Hound's *Tongue*, in *Botany*. See Cynoglossum.

Hounds, in a *Ship*, are thoſe parts of a maſt-head which gradually project on the right and left ſide, beyond the cylindrical or conical ſurface, which it preſerves from the partners upwards. The hounds, whoſe upper parts are alſo called cheeks, are uſed as ſhoulders to ſupport the frame of the top, together with the top-maſt and rigging of the lower maſt.

HOUNSLOW, in *Geography*, a town, partly belonging to the pariſh of Heſton, and partly to that of Iſleworth, in the hundred of Oſſulſton, and county of Middleſex, England. It is chiefly ſupported by its great thoroughfare, and abounds with inns and public-houſes for the accommodation of travellers. Here was formerly a market, which is now diſcontinued: but a fair is held here every Trinity Monday. At the weſtern extremity of the town is a chapel of eaſe, which formerly belonged to a priory, that was founded in the thirteenth century. The architecture, and ſome ornaments in the chapel, indicate the age of the building to have been coeval with the foundation of the priory. In the chancel is a monument for Whitelocke Bulſtrode, eſq. who died November 27, 1724. Adjoining the town is a large tract of waſte land called Hounſlow-heath. According to a ſurvey made in the year 1546, this heath conſiſted of 4293 acres, nearly the whole of which was then waſte, and almoſt uſeleſs. It continued in this ſtate till within the laſt 20 years, but an act of parliament has been recently obtained to incloſe and cultivate it. Many acres are now under tillage, and will conſequently be rendered beneficial to the community, and profitable to the proprietors. (See Middleton's Agricultural Survey of Middleſex.) This heath has been noted in the annals of military hiſtory, and alſo in thoſe of Newgate. Veſtiges of ancient encampments are ſtill viſible, and it is related that the military forces of the kingdom have frequently been aſſembled and brought to action here. In 1267, the earl of Glouceſter, leading the Londoners againſt king Henry III. aſſembled them on Hounſlow-heath. King Charles's army, after the memorable battle of Brentford in 1642, entrenched themſelves here. On the 3d of Auguſt 1647, the parliamentary forces, amounting to 20,000 foot and horſe, under ſir Thomas Fairfax, were aſſembled on this heath, when the ſpeakers of both houſes of parliament were preſent. Several other inſtances might be cited. In the year 1793, barracks were erected here to contain above 400 ſoldiers, with horſes, &c. Large gun-powder and oil mills are ſtanding upon the banks of the old river. The former have ſeveral times taken fire, and ſeveral buildings have been blown up. Lyſons's Environs of London, vol. iii.

HOU-QUANG, a province of China, occupying nearly the centre of the empire; bounded on the N. by Honan, on the E. by Kiang-ſi and Kiang-nan, on the S. by Quang-ſi and Quang-tong, and on the W. by Se-tchuen and Koei-tcheou, about 480 miles from N. to S. and 350 from E. to W. The river Yang-tſeokiung traverſes this province from W. to E., and divides it into two parts, the northern and ſouthern. The greater part of the province is level, watered by lakes, canals, and rivers, and celebrated for its fertility. By the Chineſe it is called the ſtore-houſe of the empire, and among them it is a common ſaying, that "the abundance of Kiang-ſi could furniſh all China with a breakfaſt; but the province of Hou-quang alone could ſupply enough to maintain all its inhabitants." The people boaſt much of their cotton cloths, ſimples, gold-mines, wax, and paper made of the bamboo-reed. The capital of the whole province is Voutchang, and its population, as ſtated by ſir George Staunton, 27 millions. The northern part of the province contains eight cities of the firſt claſs, and ſixty of the ſecond and third. The ſouthern comprehends ſeven of the firſt claſs and 54 of the ſecond and third, excluſive of forts, towns, and villages, which every where occur.

HOUR, Ὥρα, *Hora*, in *Chronology*, an aliquot part of a natural day, uſually a 24th, ſometimes a 12th.

The origin of the word *hora*, or ωρα, comes, according to ſome authors, from a ſurname of the ſun, the father of hours, whom the Egyptians call *Horus*. Others derive it from the Greek ὁρίζειν, *to terminate*, *diſtinguiſh*, &c. Others from the word ȣρον, *urine*; pretending that Triſmegiſtus was the firſt that ſettled the diviſion of hours; which he did from obſervation of an animal conſecrated to Serapis, named the *cynocephalus*, which makes water twelve times a day, and as often in the night, at equal intervals.

An hour with us is a meaſure or quantity of time, equal to a twenty-fourth part of the natural day, or nycthemeron; or it is the duration of the twenty-fourth part of the earth's diurnal rotation. Fifteen degrees of the equator anſwer to an hour; though not preciſely, but near enough for common uſe.

The hour is divided into ſixty minutes, the minute into ſixty ſeconds, &c.

The diviſion of the day into hours is very ancient; as is ſhewn by Kircher, Œdip. Egypt. tom. ii. part ii. claſs vii. cap. 8. though the paſſages he quotes from ſcripture do not prove it. The moſt ancient hour is that of the twelfth part of the day. Herodotus, lib. ii. obſerves, that the Greeks learnt from the Egyptians, among other things, the method of dividing the day into twelve parts. The aſtronomers of Cathaya, &c. biſhop Beveridge obſerves, ſtill retain this diviſion. They call the hour *chag*; and to each *chag* they give a peculiar name, taken from ſome animal: the firſt is called *zeth*, *mouſe*; the ſecond *chiu*, *bullock*; the third *zem*, *leopard*; the fourth *mau*, *hare*; the fifth *chin*, the *crocodile*, &c.

The diviſion of the day into twenty-four hours was not known to the Romans before the Punic war. Till that time they only regulated their days by the riſing and ſetting of the ſun.

They divided the twelve hours of their day into four; *viz.* *prime*, which commenced at ſix o'clock, *third* at nine, *ſixth* at twelve, and *none* at three. They alſo divided the night into four watches, each containing three hours.

There are divers kinds of hours, uſed by chronologers, aſtronomers, dialiſts, &c.

Sometimes hours are divided into *equal* and *unequal*.

Hours, *Equal*, are the twenty-fourth parts of a day and night preciſely; that is, the time wherein the fifteen degrees of the equator mount above the horizon.

Theſe are alſo called *equinoctial* hours, becauſe meaſured on the equinoctial; and *aſtronomical*, becauſe uſed by aſtronomers.

They are alſo differently denominated, according to the manner of accounting them in different countries.

Hours, *Aſtronomical*, are equal hours, reckoned from noon, or mid-day, in a continued ſeries of twenty-four.

Hours, *Babyloniſh*, are equal hours, reckoned from ſunriſe in a continued ſeries of twenty-four.

Hours, *European*, are equal hours, reckoned from midnight; twelve from thence till noon, and from noon till midnight twelve more.

Hours, *Jewiſh*, or *Planetary*, or *Ancient*, are twelfth parts of the artificial day and night.

Hence, as it is only in the time of the equinoxes that the artificial day is equal to the night, it is then only that the hours of the day are equal to thoſe of the night: at other times they will be always either increaſing or decreaſing.

They are called *ancient* or *Jewiſh* hours, becauſe uſed by the ancients, and ſtill among the Jews. They are called *planetary* hours, becauſe the aſtrologers pretend, that a new planet comes to predominate every hour; and that the day takes its denomination from that which predominates the firſt hour thereof: as Monday from the moon, &c.

Hours, *Italian*, are equal hours, reckoned from ſun-ſet, in a continued ſeries of twenty-four.

Hours, *Unequal*, or *Temporary*, are twelfth parts of the artificial day or night. The obliquity of the ſphere renders theſe more or leſs unequal at different times; ſo that they only agree with the equal hours at the times of the equinoxes.

To find the hour of the day, when the latitude of the place, the ſun's declination, and his altitude, are given. Thus, ſuppoſe the latitude is 51° 32′, the ſun's declination 18° north, and his altitude 40°, to find the hour of the day.

The geometrical ſolution of this problem is performed by projecting ſtereographically on the plane of the meridian the oblique-angled ſpherical triangle, which is made by the complement of the latitude, the complement of the ſun's altitude, and the ſun's diſtance from the elevated pole. Thus with the chord of 60° (*Plate* XVI. *Aſtronomy*, *fig.* 142.) draw the primitive circle Z O N H; quarter it; alſo draw the axis P C P through the poles, and the equinoctial Æ C Q; likewiſe the parallel of declination D ⊙ *d* equal 18°; then draw parallel to the horizon H O, the almacanter or parallel of the ſun's altitude A *a* = 40°, to cut the parallel of the ſun's declination in ⊙, the place of the ſun at that time. Then through ⊙ draw two great circles, one through Z and N the poles of the horizon, and the other through P and P the poles of the equinoctial, as Z ⊙ N, and P ⊙ P; which form the oblique-angled ſpherical triangle P Z ⊙; and the angle Z P ⊙, meaſured on the line of half tangents, gives the hour of the day from twelve, *viz.* 47° 20′ equal to three hours nine minutes nearly, or to 51 minutes after eight in the morning, or 51 minutes before four in the afternoon. But by ſpherical trigonometry, having three ſides given, that is, Z P, 38° 28′, the complement of the latitude, Z ⊙, 50° 00′, the complement of the ſun's altitude, and P ⊙, 72° 00′, the ſun's diſtance from the elevated pole (which is the declination added to 90°, when the latitude and declination are of a contrary name; but if of one name, it is the complement of the declination); and the angle Z P ⊙, the hour of the day, is found by caſe 11. of ſpherical trigonometry, as follows.

Firſt add the complement of the latitude, complement of the ſun's altitude, and the ſun's diſtance from the elevated pole, into one ſum. Secondly, from half that ſum ſubtract the complement of the ſun's altitude, noting the half ſum, and the remainder; then the complement arithmetical of the ſines of the complement of the latitude, and the ſun's diſtance from the pole, and the ſines of the ſaid half ſum and remainder, added together; the ſine of half this ſum, doubled, and ſubtracted from 180 degrees, gives the hour from noon.

Side	Z P Co. lat.	38° 28′
	⊙ P Co. decl.	72° 00′
	Z ⊙ Co. alt.	50° 00′
	Sum is,	160° 28′
	Half is	80° 14′
	Co. alt.	50° 00′
	Remainder	30° 14′

containing ſides	S. co. ar.	—	0.206168
	S. co. ar.	—	0.021794
half ſum ſides	80° 14′ S.	—	9.993660
remainder	30° 14′ S.	—	9.702019
ſum of the 4		—	19.923641
ſine half ſum		—	9.961820
	66° 20′		
	66° 20′		
Which doubled gives	132° 40′.		

This ſubtracted from 180° 00′ leaves 47° 20′ equal to three hours nine minutes nearly, the ſame as before.

By the ſame operation you may find the ſun's azimuth P Z ☉, if inſtead of the complement of the ſun's altitude you ſubtract the ſun's diſtance from the pole, noting the half ſum and remainder as before. And the rule will ſtand thus: to the complement arithmetical of the ſines of the complement of the latitude, and complement of the ſun's altitude, add the ſines of the aforeſaid half ſum and remainder; then the ſine of half the total of theſe four, doubled, and taken from 180 degrees, gives the ſun's azimuth from the north, in north latitude; and from the ſouth, in ſouth latitude.

If the hour of the night is required, the height of ſome ſtar muſt be taken. And it is found by adding to, or ſubtracting the right aſcenſion of that ſtar from that of the ſun.

To find the hour of the day or night by the globe, ſee Globe.

Hour, in *Mining*, is uſed by ſeveral foreign writers to expreſs $\frac{1}{24}$th part of the circumference or horizon, or 15° of azimuth; the ſouth and the north being called twelve hours, the eaſt and weſt ſix hours; and in deſcribing the courſe or range of a vein or ſtratum, they ſay, if N.W. and S.E., that it has a nine o'clock range, &c. In the ſame manner, Engliſh colliers, ſpeaking of the prevailing dip of the ſtrata, ſay, that the meaſures generally dip to the ten o'clock ſun; and the collieries of Derbyſhire are found by Mr. Farey generally to face the two o'clock ſun, or the ſlines or length-way joints, at right angles to theſe, tend to the eight o'clock ſun, which is either the deep end or the riſe-end of the works, according as the ſtrata dip towards the N.W. or S.W. or *vice verſâ*.

Hours, *Horæ*, in the *Ancient Mythology*, were certain goddeſſes, the daughters of Jupiter and Themis; at firſt only three in number, Eunomia, Dice, and Irene; to which were afterwards added two more, Carpo, and Thallote.

Homer makes them the door-keepers of heaven. Ovid allots them the employment of harneſſing the horſes of the ſun:

> "Jungere equos Titan velocibus imperat Horis."

And ſpeaks of them as ſtanding, at equal diſtances, about the throne of Sol:

> " ——— et poſitæ ſpatiis equalibus, Horæ."

The poets repreſent them as dreſſed in fine coloured, or embroidered robes, and gliding on with a quick and eaſy motion. Ovid. Faſt. v. ver. 218. Met. ii. ver. 119. Stat. Theb. iii. ver. 410.

Hours, *Horæ*, in the *Romiſh Church*, are certain prayers performed at ſtated times of the day; as *matins*, *veſpers*, *lauds*, &c.

The leſſer hours, are *prime*, *tierce*, *ſixth*, and *none*. They are called *hours*, or *canonical* hours, as being to be rehearſed at certain hours preſcribed by the canons of that church, in commemoration of the myſteries accompliſhed at theſe hours. Theſe hours were anciently alſo called *courſe*, *curſus*. F. Mabillon has a diſſertation on them, entitled de Curſu Gallicano.

The firſt conſtitution enjoining the obſervation of the canonical hours, is of the ninth century, being found in a capitular of Heito, biſhop of Brazil, directed to his curates, importing, that the prieſts ſhall never be abſent at the canonical hours, either by day or night.

Hours, *Prayers of forty*, are public prayers continued for the ſpace of three days ſucceſſively, and without intermiſſion before the holy ſacrament, to obtain the aſſiſtance of heaven on ſome important occaſion.

In theſe days, care is taken, that the holy ſacrament be expoſed forty hours, *viz.* thirteen or fourteen hours each day.

Hour-*circles*, or Horary *Circles*, in *Aſtronomy*, &c. are great circles, meeting in the poles of the world, and croſſing the equinoctial at right angles; the ſame as meridians.

They are ſuppoſed to be drawn through every fifteenth degree of the equinoctial and equator, and on both globes are ſupplied by the meridian hour-circle and index. See Globe.

The planes of the hour-circles are perpendicular to the plane of the equinoctial, which they divide into twenty-four equal parts.

Hour-*glaſs*, a popular kind of chronometer or clepſydra, ſerving to meaſure the flux of time, by the deſcent or running of ſand out of one glaſs veſſel into another.

The beſt hour-glaſſes are thoſe, which, inſtead of ſand, have egg-ſhells well dried in the oven, then beaten fine and ſifted.

Hour-glaſſes are much uſed at ſea for reckoning, &c.

There is alſo a ſort of hour-glaſſes, which depend on the flux of water, or ſome other liquid, more properly called *clepſydræ*. See Clepsydra.

Hour-*lines*, on a *Dial*, are lines which ariſe from the interſections of the plane of the dial, with the ſeveral planes of the hour-circles of the ſphere, and therefore muſt be all right lines. See Dial.

Hour-*ſcale*, a divided line on the edge of Collins's quadrant, being only of tangents of forty-five degrees each, ſet together in the middle. Its uſe, together with the lines of latitude, is to draw the hour-lines of dials that have centres, by means of an equilateral triangle, drawn on the dial-planes. See Dialling *lines*, and Scale.

HOURA, in *Geography*, a ſmall iſland near the W. coaſt of Scotland. N. lat. 57 56′. W. long. 5° 16′.

HOURIS, in *Modern Hiſtory*, is a name given by the Mahometans to thoſe females that are deſigned for the faithful in paradiſe. Theſe are not the ſame with whom they have lived on earth, but formed for this purpoſe, with ſingular beauty and undecaying charms.

HOURSAK, in *Geography*, a town of Perſian Armenia; 150 miles E.N.E. of Erivan.

HOUSAGE, a fee which a carrier, or other perſon, pays for laying up goods in a houſe.

HOUSANABUD, in *Geography*, a town of Hindooſtan, in Bahar.

HOUSANGUNGE, a town of Hindooſtan, in Oude; 40 miles N. of Manickpour.

HOUSATONICK, or Hooestonnuc, ſignifying in the Indian language "over the mountain," a river of Connecticut, which has two ſources; one in Laneſborough, the other in Windſor, both in Berkſhire county, Maſſachuſetts. Theſe branches unite in Pittsfield, and the river, after paſſing through a number of towns, diſcharges itſelf into Long iſland Sound, between Stratford and Milford, in Connecticut. It is navigable about 12 miles to Derby. Between Saliſbury and Canaan, this river forms a cataract 150 yards wide, and 60 feet in perpendicular fall. Several uſeful mills and iron works are erected on the falls of this river.

HOUSE, a habitation, or a building conſtructed for ſheltering a man's perſon and goods from the inclemencies of the weather, and the injuries of ill diſpoſed perſons. Houſes differ in magnitude, being of two or three, and four ſtories, in the materials of which they conſiſt, as wood, brick, or ſtone, and in the purpoſes for which they are deſigned, as a manor-houſe, farm-houſe, cottage, &c.

Ancient Rome conſiſted of forty-eight thouſand houſes, all inſulated or detached from one another.

For the number of houſes, and of inhabitants to a houſe in England, &c. ſee the article Expectation *of Life.* See alſo each county and town, under its reſpective appellation.

A pleaſure houſe, or country houſe, is that built for occaſional reſidence, and for the pleaſure and benefit of retirement, air, &c. This is the *villa* of the ancient Romans; and what in Spain and Portugal they call *quinta;* in Provence, *caſſine;* in ſome other parts of France, *cloſerie;* in Italy, *vigna.*

The citizens of Paris have alſo their *maiſons de bouteilles, bottle houſes,* to retire to, and entertain their friends; which in Latin might be called *micæ;* the emperor Domitian having a houſe built for the like purpoſe, mentioned under this name by Martial, lib. ii. ep. 59.

It is a thing principally to be aimed at, in the ſcite or ſituation of a country houſe, or ſeat, that it have wood and water near it.

It is far better to have a houſe defended by trees than hills; for trees yield a cooling, refreſhing, ſweet, and healthy air and ſhade, during the heat of the ſummer, and very much break the cold winds and tempeſts from every point in the winter. The hills, according to their ſituation, defend only from ſome certain winds; and if they are on the north-ſide of the houſe, as they defend from the cold air in the winter, ſo they alſo deprive you of the cool refreſhing breezes, which are commonly blown from thence in the ſummer. And if the hills are ſituate on the ſouth ſide, they then prove alſo very inconvenient.

A houſe ſhould not be too low ſeated, ſince this precludes the convenience of cellars. If you cannot avoid building on low grounds, ſet the firſt floor above the ground the higher, to ſupply what you want to ſink in your cellar in the ground; for in ſuch low and moiſt grounds, it conduces much to the dryneſs and healthineſs of the air to have cellars under the houſe, ſo that the floors be good and cieled underneath. Houſes built too high, in places obvious to the winds, and not well defended by hills or trees, require more materials to build them, and more alſo of reparations to maintain them; and they are not ſo commodious to the inhabitants as the lower-built houſes, which may be built at a much eaſier rate, and alſo as complete and beautiful as the other.

In buildings or houſes not above two ſtories with the ground-room, and not exceeding twenty feet to the raiſon-place, and upon a good foundation, the length of two bricks, or eighteen inches for the heading courſe, will be ſufficient for the ground-work of any common ſtructure, and ſix or ſeven courſes above the earth to a water-table, where the thickneſs of the walls is abated, or taken in, on either ſide the thickneſs of a brick, namely, two inches and a quarter.

For large and high houſes, or buildings, of three, four, or five ſtories with the garrets, the walls of ſuch edifices ought to be from the foundation to the firſt water-table three heading courſes of brick, or twenty-eight inches at leaſt; and at every ſtory a water-table, or taking in on the inſide for the ſummers, girders, and joints, to reſt upon, laid into the middle, or one quarter of the wall at leaſt, for the better bond. But as for the innermoſt or partition wall, a half brick will be ſufficiently thick; and for the upper ſtories, nine inches, or a brick length, will ſuffice.

The parts, proportions, &c. of the houſes in London, are regulated by ſtatute. See Building, and article Fire-*cocks.*

Every man has a right to air and light in his own houſe; and therefore if any thing of an infectious ſmell be laid near the houſe of another, or his lights be ſtopped up and darkened by buildings, &c. they are nuiſances puniſhable by our laws; but no action lies for merely obſtructing the opening of a proſpect. If a man's houſe be attacked with intent to kill, and the owner or his ſervants kill the thieves in defending him and his houſe, this is not felony, and incurs no forfeiture. One man may compel another to repair his houſe in ſeveral caſes, by the writ *de domo reparanda.* The doors of a houſe may not be broke open on arreſts, except in caſes of treaſon or felony, &c. The riotouſly pulling down of a houſe is felony excluded clergy. Stealing lead, or iron bars, or rails fixed to houſes, &c. is felony puniſhable by tranſportation, by 4 Geo. cap. 32. The hundred is liable to damages by the burning of houſes: 9 Geo. cap. 32. See Arson, Burglary, &c.

House-*cricket,* in *Entomology.* See Gryllus *domeſtica.*

House, *Hot.* See Hot-*houſe* and Stove.

House, *Green.* See Green-House.

House, *Ice.* See Ice.

House-*lamb,* in *Rural Economy,* a name given to that ſort of lamb which has been reared and fattened in the houſe. See Lamb-*ſuckling.*

House, *Summer,* a little edifice erected at the corner of a garden, and contrived ſo as to let air in on all ſides; or to exclude it, as you find proper.

House, *Town,* or *Hall,* is a place where the officers and magiſtrates of a town or city hold their meetings, for the due adminiſtration of their laws and policy. See Hall and Guild.

House, *Work.* See Work-*houſe* and Bridewell. See alſo the article Rasphuys.

House *of Correction.* Juſtices of the peace in ſeſſions are to make orders for erecting or enlarging houſes of correction, and for the maintenance and government of the ſame, and for the puniſhment of offenders committed thither; on preſentment of the grand jury, or of a juſtice on his own view or knowledge, that ſuch houſes are wanted. (7 Jac. I. c. 4. 17 Geo. II. c. 5. 14 Geo. II. c. 33. 22 Geo. III. c. 64. 24 Geo. III. ſeſſ. 2 c. 55.) In every county of England there ſhall be a houſe or houſes of correction, built at the charge of the county, with all conveniences for the ſetting of people to work. The expence of building, repairing, and purchaſing land, &c. for houſes of corrrection, and maintaining them, ſhall be defrayed by order of the juſtices in ſeſſions, by the monies raiſed in the ſame manner as the general county-rate; and when the amount thereof ſhall exceed one-half of the amount of the ordinary annual aſſeſſment for the ſame, (computed at a medium for the laſt five preceding years), they may borrow on mortgage of the ſaid rates, any ſum not leſs than 50*l.* nor more than 100*l.* each, ordering the intereſt to be paid off yearly, and ſo much of the principal ſum as ſhall at leaſt be equal to the intereſt, until the whole ſhall be diſcharged; provided that the whole money borrowed be fully paid within 14 years from the time of borrowing the ſame. (17 Geo. II. c. 5. 22 Geo. III. c. 64. 24 Geo. III. ſeſſ. 2. c. 55.) The juſtices at their quarter ſeſſions ſhall nominate one or more juſtices, within their reſpective diſtricts as viſitors and inſpectors, who ſhall report to the next quarter ſeſſions. And the juſtices in ſeſſions are to appoint governors or maſters of ſuch houſes of correction, and their ſalaries, &c. which are to be paid quarterly out of the county rate. They may alſo allow ſuch governors ſome proportion of the profits earned by the priſoners. The ſalaries ſhall be fixed with a reference to the quantity of work done. (22 Geo. III. c. 64. 31 Geo. III. c. 46.) Theſe governors are to ſet the perſons ſent on work, and to puniſh offenders (except by whipping); and in caſe of repetition of offences to report to the viſiting juſtices, who ſhall order ſuch offenders to be puniſhed, either by moderate whipping, repeated whippings, or cloſe confinement for any term not exceeding one month. Governors are to yield a true account every quarter-ſeſſions of perſons committed to their cuſtodies; and if they ſuffer any to eſcape, the juſtices may fine them.

The juſtices, at ſome general or quarter-ſeſſions, at which five juſtices, at the leaſt, ſhall be preſent, may make ſuch rules and orders for receiving, ſeparating, claſſing, dieting, clothing, maintaining, employing, reforming, governing, managing, treating, and watching offenders during their confinement in penitentiary houſes, according to 19 Geo. III. c. 47. (See PENITENTIARY *Houſes*, and TRANSPORTATION.) Such rules and orders are to be ſubmitted to the judges of aſſize, &c. 31 Geo. III. c. 46. If perſons ordered to hard labour ſhall eſcape, or be aſſiſted in eſcaping, or reſcued, every ſuch offence ſhall be puniſhed in the ſame manner as the like offence would be puniſhed by 19 Geo. III. c. 74. concerning penitentiary houſes. Separate apartments ſhall be provided by 22 Geo. III. c. 64. By the ſame act, the governor or keeper of every houſe of correction ſhall employ perſons, not committed to hard labour, in ſome work that is not ſevere, and allow them half their earnings, to be paid at the time of their diſcharge. The juſtices in ſeſſions may alſo appoint, at pleaſure, a miniſter of the church of England, reſiding near the houſe of correction, to perform divine ſervice there every Sunday, and appoint him a ſalary not exceeding *20l.* a-year. No governor or aſſiſtant ſhall ſell, or be licenſed to ſell, or have any benefit from the ſale of any wine, ale, beer, ſpirituous or other liquors; nor ſhall ſuch liquors be brought into the houſe of correction, to be drank there, unleſs for a medical purpoſe, by a written direction, under the hand of the apothecary or ſurgeon attending ſuch houſe, under a penalty of 10*l.* The maſter ſhall deliver to the juſtices, at every general quarter-ſeſſions, a written account of the perſons in cuſtody, with the offence of each, time of commitment, diſtinguiſhing the age and ſex of thoſe committed to hard labour, the buſineſs in which they have been employed, and the behaviour of each during confinement.

The houſe of correction is for the employing and puniſhing of idle and diſorderly perſons, parents of baſtard children, beggars, ſervants running away, treſpaſſers, rogues, vagabonds, &c. Poor perſons refuſing to work, are there to be whipped, and ſet to work and labour; and any perſon who lives extravagantly, having no viſible way to ſupport himſelf, may be ſent to the houſe of correction, and ſet to work there, and may be kept there, until he gives the juſtice ſatisfaction in reſpect to his living, but not to be whipped. A perſon ought to be convicted of vagrancy, &c. before he is ordered to be whipped.

Whereas doubts may ariſe where authority is given to any juſtice or juſtices, to commit offenders to the houſe of correction, for offences cognizable before them out of ſeſſions, how long offenders may be there detained, and in what manner treated, when the time and manner of their puniſhment is not by law expreſsly limited; it is enacted by 17 Geo. II. c. 5. that when any offender ſhall be committed as aforeſaid, by virtue of any law in being, or to be made, and the time and manner of their puniſhment are not expreſsly limited, the ſaid juſtice or juſtices ſhall commit ſuch offenders to the houſe of correction, there to be kept to hard labour until the next general or quarter-ſeſſions, and until diſcharged by due courſe of law: and two juſtices (of whom the juſtice who committed him to be one) may diſcharge the ſaid offender before the ſeſſions if they ſee cauſe: and if he ſhall not be ſo diſcharged, the ſaid ſeſſions may either diſcharge him or continue him further, not exceeding three months. A table of rules and orders for the government of houſes of correction, is ordered to be fixed in ſome conſpicuous part of ſuch houſes by 22 Geo. III. c. 64, of which the following is a copy:

"Rules, orders, and regulations to be obſerved and inforced at every houſe of correction provided and eſtabliſhed, or to be provided and eſtabliſhed, under the authority of the acts of the 7th year of the reign of his late majeſty king James I. the 17th of king George II. and the 22d of king George III.

"1. That the ſeveral perſons who ſhall be committed to the houſe of correction to be kept to hard labour, ſhall be employed (unleſs prevented by ill health) every day during their confinement (except Sundays, Chriſtmas day, and Good-Friday), for ſo many hours as the day-light in the different ſeaſons of the year will admit, not exceeding twelve hours, being allowed thereout to reſt half an hour at breakfaſt, an hour at dinner, and half an hour at ſupper, and that the intervals ſhall be noticed by the ringing of a bell.

"2. That the governor of each houſe of correction ſhall adapt the various employments, which ſhall be directed by the juſtices at their quarter-ſeſſions, to each perſon in ſuch manner as ſhall be beſt ſuited to his or her ſtrength and ability, regard being had to age and ſex.

"3. That the males and females ſhall be employed, and ſhall alſo eat and be lodged in ſeparate apartments, and ſhall have no intercourſe or communication with each other.

"4. That every perſon ſo committed ſhall be ſuſtained with bread, and any coarſe but wholeſome food and water; but perſons under the care of the phyſician, ſurgeon, or apothecary, ſhall be ſuſtained with ſuch food and liquor as he ſhall direct.

"5. That the governor, and ſuch other perſons (if any) as ſhall be employed by the juſtices to aſſiſt the governor, ſhall be very watchful and attentive in ſeeing that the perſons ſo committed are conſtantly employed during the hours of work; and if any perſon ſhall be found remiſs or negligent in performing what is required to be done by ſuch perſon to the beſt of his or her power and ability, or ſhall wilfully waſte, ſpoil, or damage the goods committed to his or her care, the governor ſhall puniſh every ſuch perſon in the manner hereafter directed.

"6 That if any perſon ſo committed ſhall refuſe to obey the orders given by the governor, or ſhall be guilty of profane curſing or ſwearing; or of any indecent behaviour or expreſſion; or of any aſſault, quarrel, or abuſive words, to or with any other perſon: he or ſhe ſhall be puniſhed for the ſame in the manner hereafter directed.

"7. That the governor ſhall have power to puniſh the ſeveral offenders for the offences herein before deſcribed, by cloſer confinement; and ſhall enter in a book, to be kept by him for the inſpection of the juſtices at the quarter-ſeſſions, and the viſiting juſtice or juſtices, the name of every perſon who ſhall be ſo puniſhed by him, expreſſing the offence, and the duration of the puniſhment inflicted."

Bridewell is a priſon for correction in London, and offenders may be ſent thither. See BRIDEWELL and HOSPITAL.

HOUSE is alſo uſed for a convent or monaſtery.

Regular prieſts give the name houſes to the places they reſide in, and not that of convents or monaſteries, which properly belong to ſimple friars. Thus we ſay the Jeſuits' houſe, and the Barnabites or Theatins' houſe.

The Jeſuits have both profeſſed houſes, and colleges for novices, which they call *houſes of probation*.

They have alſo *houſes of retreat* for ſpiritual exerciſes, where they receive ſecular perſons and eccleſiaſtics diſpoſed to practiſe the ſame with them for eight or ten days.

HOUSE is alſo uſed for one of the eſtates of the kingdom aſſembled in parliament.

Thus we ſay, the houſe of lords, the houſe of commons, &c. See COMMONS, PARLIAMENT, and PEERS.

HOUSE is alſo uſed for a noble family; or a race of illuſtrious perſons iſſued from the ſame ſtock. See GENEALOGY.

In this ſenſe we ſay, the houſe or family of the Stuarts, the houſe of Bourbon, the houſe of Hanover, of Auſtria, of Lorrain, of Savoy, &c.

HOUSE, in *Aſtrology*, a dodecatemory, or 12th part of the heavens.

The diviſion of the heavens into houſes is founded on this, that the ſtars and planets, when found herein, are ſuppoſed to have certain influences, either good or evil, upon ſublunary bodies; and to each houſe is aſſigned its particular virtue or influence; upon the conſideration whereof they draw horoſcopes. See HOROSCOPE.

This diviſion is made by ſix great circles, called *circles of poſition*, which cut each other in the common interſection of the meridian and horizon, in the ordinary way of domifying, which is that of Regiomontanus: for the ancients had three other ways.

Theſe circles divide the equator into 12 equal parts, of 30 degrees each, without any regard to the zodiac. The horizon and meridian are two circles of the celeſtial houſes, which divide the heavens into four equal parts, each whereof comprehends three houſes. There are ſix above the horizon, and as many below it; and ſix eaſtern and ſix weſtern houſes.

The ſcheme or figure of the heavens conſiſts of 12 triangles, which are likewiſe called houſes; wherein are laid down the ſtars, ſigns, and planets, compriſed within the reſpective ſpaces of the circles of poſition.

Each planet has two certain houſes, whereing they ſay it exerts itſelf with peculiar vigour. Leo is the ſun's houſe, and Cancer that of the moon; Capricorn is Saturn's, &c.

Some call the houſes dodecatemories; but that name is more immediately appropriated to the twelve ſigns or diviſions of the zodiac. See DODECATEMORY.

The Aſtrological houſes have their particular names according to their qualities. The firſt is the *houſe of life*, being the aſcendant, and containing five degrees above the horizon, the reſt beneath it; the ſecond is the *houſe of riches;* the third, the *houſe of brothers;* the fourth, in the loweſt part of heaven, the *houſe of relations*, and the angle of the earth; the fifth, the *houſe of children;* the ſixth, the *houſe of health;* the ſeventh, the *houſe of marriage*, and the angle of the weſt; the eighth, the *houſe of death*, and upper gate; the ninth, the *houſe of piety;* the tenth, the *houſe of offices;* the eleventh, *the houſe of friends;* and the twelfth, the *houſe of enemies*.

It is popularly, and as it were poetically, ſaid, that the ſun had 12 houſes, by which are meant the 12 ſigns, though in reality it has only one ſign, *viz.* Leo: beſides, the diviſion of houſes is accommodated to the equator, and not the zodiac.

They begin numbering the houſes with the aſcendant, and paſs them to the imum cœli; ſo that the vertical point makes the beginning of the tenth.

HOUSES, *Differences of*, in *Heraldry*. See DIFFERENCES.

HOUSE-*bote*, *Eſtovers*, in *Law;* or an allowance of timber out of the lord's wood, for the repair and upholding a houſe or tenement.

Some make houſe-bote two-fold, *viz. Eſtoverium ædificandi & ardendi.* See ESTOVERS.

HOUSE-*breaking*, or *Houſe-robbing*, the robbing or plundering a man in ſome part of his houſe, or his booth, or ſtall, in a fair or market; the owner, or his wife, children, or ſervants, being within the ſame.

This was made felony by ſtat. 23 Hen. VIII. and 3 Ed. VI. but it is ſince alſo made felony, though none be within the houſe, 26 Eliz. See BURGLARY and LARCENY.

HOUSE-*burning*. See ARSON.

HOUSE-*coal*, in *Mining*, is applied to ſuch ſort of coals, as are adapted, and in general uſed as firing by the inhabitants of coal diſtricts, called alſo *fire-coal*, to diſtinguiſh them from lime-coal, engine-coal, ſleck, &c. which are refuſe, or ſtinking-coal, uſed chiefly for burning lime, working ſteam-engines, &c.

HOUSE-*iſland*, in *Geography*, one of the Shetland iſlands, about ſeven miles long and one broad. N. lat. 60' 4°. W. long. 1° 35'.

HOUSE *painter*. See PAINTING.

HOUSE *of Recovery*, a hoſpital for the reception of perſons labouring under infectious fever, or typhus, with a view not only to the cure of the diſeaſe, but to the ſuppreſſion of the contagion.

This very important inſtitution, of which many examples are now to be found in England and Ireland, is of very recent date; the firſt houſe of the kind having been eſtabliſhed at Mancheſter in the year 1796, when this appellation was adopted, as being leſs alarming to the feelings of the poor, and of the public in general, than that of *fever-houſe*. For the original ſuggeſtion of ſuch eſtabliſhments, and for the ſatisfactory documents in proof of the ſafety and advantages which they afford, deduced from a long and philoſophical inveſtigation of the nature of contagion, the country is indebted to Dr. Haygarth. The principles on which he recommended the plan, had been inferred by ſo cautious an induction from obſervation and experiment, that every inſtance of the practical application of them has ſerved but to corroborate their truth.

It is well known to thoſe who have attended to the hiſtory of epidemic diſeaſes, that the various contagious fevers, which have been denominated the plague, putrid, ſpotted, and malignant fevers, have, together with the ſmall-pox, meaſles, and ſcarlet fever, been the principal ſcourges of mankind, ſince hiſtory has afforded us any accurate records on the ſubject; and that the ravages of peſtilence in general have been confined to the crowded population of large camps, towns, and cities. (See EPIDEMIC.) With the origin of the ſmall-pox, meaſles, and ſcarlet-fever, we are altogether unacquainted; they ſeem to be propagated only by a ſpecific contagion, generated in the bodies of thoſe who labour under the diſeaſes. But the origin of the other fevers above ſpecified has been traced, we apprehend, with a clearneſs that admits of no doubt, to the effluvia generated from the accumulated filth, and the uncleanly perſons and habitations, abounding in large and populous cities. (See HEALTH, *Public*.) And although it has been ſhewn, that the frequency and extenſive range of theſe peſtilential fevers have been curtailed, and ſome of them actually annihilated, by the ſyſtem of public and private cleanlineſs and ventilation adopted in modern times; yet until the abodes of poverty can be rendered airy and cleanly, (a conſummation ſcarcely to be hoped for,) contagion will continue to be generated under certain circumſtances, and will neceſſarily tend to propagate itſelf to an indefinite extent. And ſuch, in fact, has been the actual ſtate of the caſe, in all large and crowded towns, until within a very few years. The inhabitants of the cellars and garrets in the dirty alleys and lanes in Mancheſter, Liverpool, London, Dublin, &c. &c. have been found to ſuffer ſeverely from the generation of infectious fever in their apartments, or from the ready propagation of it, whenever introduced.

From the nature of the accommodation of the poor in their lodging-houſes, from their inability to preſerve cleanlineſs, and from the conſtant intercourſe between the inhabitants of the different apartments of theſe houſes, not only is contagious fever generated; it is alſo readily propagated, and it becomes an irremovable inmate, as it were, of the houſes. "When a fever either ariſes in, or is introduced into the houſe of a poor perſon, every circumſtance favouring its progreſs, it generally attacks the family in ſucceſſion: their clothes, and the woollen and cotton part of their furniture become infected, retain the infection tenaciouſly, and are capable of communicating the diſeaſe for a long time. Theſe they can neither afford to purify or deſtroy. Thus their dwellings and perſons continually breathe contagion; and where this is the ſituation, not of one family only, but of a great number, it is hardly poſſible to prevent a communication of the diſeaſe to the families of the rich, among whom it would never have been *produced.*" (Ferriar's Med. Hiſt. and Reflect. vol. i. p. 243.) The ſame author, ſpeaking of the ſituation of ſome of theſe habitations of the poor in Mancheſter, obſerves, "In thoſe houſes a very dangerous fever conſtantly ſubſiſts, and *has ſubſiſted for a conſiderable number of years.* I have known nine patients confined in fevers at the ſame time in one of theſe houſes, and crammed into three ſmall dirty rooms, without the regular attendance of any friend or even of a nurſe. Four of theſe poor creatures died, abſolutely from want of the common offices of humanity, and neglect in the adminiſtration of their medicines. As ſoon as one dies, or is driven out of his cell, he is replaced by another, who ſoon feels, in his turn, the conſequences of breathing infected air. In moſt of theſe places lodgers are received; the conſequence is a perpetual ſucceſſion of fever patients among them." That theſe repreſentations are faithfully correct, thoſe who have had an opportunity of viſiting the ſick poor in this metropolis can evince. We have ſeen the inhabitants of the ſame houſe attacked, ſeveral ſucceſſive times, by the influence of their own contagion. Even the convaleſcents, from their confinement in the midſt of infection, have frequent relapſes, ſo that the diſeaſe would ſometimes continue on the ſame ſpot for ſeveral months together.

It muſt be obvious, that theſe neſts of contagion are conſtant ſources of danger to the public, and that diſeaſes may be communicated even to diſtant quarters of the town, by the ſale of clothes, impregnated with it in its moſt active form (ſee Dr. Willan on Scarlatina), and by the public coaches, &c. And it muſt be not leſs clear, that the mere removal of a few infected individuals to the public hoſpitals, is altogether inadequate to ſtrike at the root of the evil, although it may preſerve the lives of ſome of the individuals thus removed. A ſtriking illuſtration of theſe points is afforded in a caſe mentioned by the late Dr. T. A. Murray. He was called upon to viſit a poor man in a cloſe alley leading from Shoe-lane, who was ill of typhus-fever. This patient occupied a back room, on the ground floor, *together with his wife and five female children,* the eldeſt of whom was ſixteen years of age, the youngeſt two. There was but one bedſtead in the room, but ſome bedding lay on the floor, between this and the fire-place; it was lighted by one window, which, from its conſtruction, could not be opened. The room, the bedding, and the perſons of the inhabitants were all filthy and offenſive in the higheſt degree. It appeared, however, that the mother had been firſt attacked, in conſequence, as ſhe ſuppoſed, of having viſited a perſon who died of the fever in one of the upper apartments. She had immediately obtained admiſſion into an hoſpital, and remained there until ſhe thought herſelf able to return to her family; though ſtill retaining in her clothes, or perſon, enough of the contagion to infect them. Soon after her return her huſband was attacked by the fever; then the ſecond and third of her daughters; afterwards the eldeſt and the two youngeſt. Medicine, as might have been foretold, was of very little ſervice in ſuch a ſituation. The father of the family died on the fourth day after he was viſited. The children continued to linger under the diſeaſe, when this report was made. The eldeſt of them was conveyed to a hoſpital *in a hackney coach;* having, until the time of her removal, lain by the ſide of her ſiſter, on that part of the infected bed which the dead body of their father had previouſly occupied. See Remarks on the Situation of the Poor in the Metropolis, as contributing to the Progreſs of Contagious Diſeaſes, by Dr. Murray, publiſhed by the Society for bettering the Condition of the Poor, in 1801. p. 27.

On contemplating ſcenes like this, and conſidering the danger thence reſulting to the public, and the miſery inflicted on the families of the poor, we cannot but highly approve the nature of an inſtitution, which has for its object at once the removal of the patients from ſuch peſtilential habitations (by means which ſecure the public), to a *Houſe of Recovery,* and alſo the purification of the infected apartments, and the deſtruction of the contagion, in the clothes and furniture, and whatever elſe may be imbued with it. Such are the purpoſes accompliſhed by the inſtitution of Houſes of Recovery; and we ſhall briefly ſtate the grounds upon which ſuch eſtabliſhments were propoſed, the methods in which they have been executed, and the happy reſults which have accrued from them.

The firſt ſuggeſtion of the advantages of the eſtabiſhment in queſtion was made by Dr. Haygarth, at Cheſter, about the year 1772, from a conſideration of the nature of contagion, and of the mode and limits of its propagation. His own obſervations, ſupported by thoſe of ſir John Pringle, Dr. Lind, and others, had taught him that contagious effluvia are particularly active in cloſe and unventilated apartments; but that, in the open air, or when diluted by the free admiſſion of freſh air into the infected room, they become comparatively inert and harmleſs, and might be breathed for a long time with perfect impunity; and that even the concentrated infection of a cloſe room might be reſpired for a ſhort time without producing fever, eſpecially at a little diſtance from the perſon deceaſed. It had been ſhewn too, by Dr. O'Ryan's experiments at Montpellier, that the contagion of ſmall-pox was limited in its operation to the diſtance of a few feet from the perſon infected; and by Dr. Ruſſell, Dr. Mertens, &c. that even the contagion of the plague was harmleſs at a ſimilar diſtance, particularly in the air of well ventilated places. (See CONTAGION, where the evidence of theſe ſtatements is adduced.) In ſhort, Dr. Haygarth was irreſiſtibly led to the concluſion, that contagion is not communicated to any diſtance through the air, and that, in a well ventilated and clean apartment in a houſe or hoſpital, perſons affected with contagious fever might be received, without any riſk to the occupants of other apartments in the ſame building, much leſs to the inhabitants of neighbouring or even adjoining houſes. In conſequence of theſe well-founded opinions, a *fever-ward* was opened in the infirmary at Cheſter, in the year 1773, with the moſt beneficial effects; *i. e.* two wards were ſet apart for the reception of patients labouring under typhus-fever, and were continued open without any injury to the other wards of that hoſpital, or to the neighbourhood, but with a great diminution of contagious fever in the town.

For, in the mean time, the attention of the officers of the infirmary was directed to the apartments from which the ſick had been removed; the furniture, clothes, &c. which had been about the perſons of the patients, were purified, by waſhing, fumigation, &c. and the rooms cleanſed and white-waſhed. The patients, after their recovery in the fever-wards, were ſent home to their families in clean garments; being thus rendered ſecure from the chance of re-infection on their arrival, and incapable of communicating it to their inmates.

The ſucceſs of this eſtabliſhment led to the opening of fever-wards in the infirmary at Liverpool, under the direction of the late Dr. Currie, where the experiment was attended with the ſame ſucceſs. The inhabitants of Mancheſter, from the preſſing repreſentations of Dr. Ferriar, were induced to form a ſeparate eſtabliſhment, as already ſtated, in 1796; and ſimilar houſes have been inſtituted in ſeveral of the large towns both in England and Ireland, eſpecially at Dublin, Waterford, Cork, &c. in London, Leeds, and other places; in all of which the principles of Dr. Haygarth have been invariably confirmed, and the moſt ſubſtantial benefits conferred upon the inhabitants.

Regulations of a Houſe of Recovery.—The following are the principal regulations adopted in the management of the Houſe of Recovery, in Gray's-inn-lane Road, London, which was opened in 1802, under the patronage of the Society for bettering the Condition of the Poor; they are chiefly taken from thoſe of the eſtabliſhment at Mancheſter. See Dr. Ferriar, loc. cit. vol. iii. p. 66.

1. The admiſſion of patients is left entirely to the phyſician, who, as ſoon he has aſcertained the ſtate of the perſon recommended, gives an order for that purpoſe; whence no time is loſt by ſearching for the recommendation of governors, or by ſtated periods of admiſſion, as in the ordinary hoſpitals.

2. A ſedan chair, or covered litter, provided with a moveable lining, is kept at the houſe, in which all perſons are carried thither at the expence of the inſtitution; ſo that no public carriages can be thus infected.

3. All patients on admiſſion have their infectious clothes changed for clean linen, and are waſhed with lukewarm water. The clothes brought into the houſe with them are properly purified and aired. During their continuance in the houſe, all linen and bed-clothes, on being removed from the bodies of the patients, are immediately immerſed in cold water, and all diſcharges are removed from the wards without delay.

4. The floors of the wards are waſhed daily near the beds, and twice a week generally; and fumigations with nitre and ſulphuric acid are frequently employed; the walls are white-waſhed once every three months with quick-lime, freſh ſlaked in water, and while it continues bubbling and hot. The bedſteads are of iron, without curtains, and the beds ſtuffed with ſtraw for the convenience of being frequently changed.

5. The fumigation, juſt mentioned, the efficacy of which in deſtroying contagion, has been ſatisfactorily proved by M. Morveau, Dr. Johnſtone, and Dr. C. Smyth (ſee FUMIGATION), is employed in the apartments which the patients have left; their walls are white-waſhed with hot lime, where that operation is deemed neceſſary; and ſuch articles of clothing as are not capable of being purified are deſtroyed, and replaced at the expence of the inſtitution. (See the Reports of the Inſtitution for the Cure and Prevention of Contagious Fever in the Metropolis: Ferriar, Med. Hiſt. and Refl. vol. iii. p. 66.)

The advantages of ſuch inſtitutions have become almoſt immediately apparent wherever they have been adopted. Great apprehenſions were at firſt entertained (founded entirely on popular prejudices and miſtakes in regard to the nature of contagion), that the neighbouring dwelling-houſes might be infected through the air, where a houſe of recovery was eſtabliſhed. But it was ſoon perceived that no ſuch infection took place; but, on the contrary, that the neighbourhood of the houſes (at Mancheſter for inſtance), was the firſt part of the town to be purified from the contagion which it heretofore cheriſhed. This apprehenſion was alſo ſtrongly expreſſed in London, where the Houſe of Recovery was originally a private dwelling-houſe, ſtanding *in a row*, and of courſe *contiguous* to dwelling-houſes on both ſides. But the experience of nine years has completely removed all the fears of the adjoining inhabitants.

In reſpect to the eſtabliſhment at Mancheſter, it is ſtated that "the beneficial effects of the Houſe of Recovery are almoſt beyond belief; the facts are, however, eſtabliſhed by authentic documents. The number of fever patients in the pile of buildings *in the neighbourhood of the Houſe of Recovery*, for the two preceding years and eight months, were 1256, ſomething more than an average of *four hundred* a year; thoſe in the ſame diſtrict, from July 1796 (a period commencing two months after the eſtabliſhment of the Houſe of Recovery), to July 1797, being twelve months, were only *twenty-ſix*."

Again, "in January 1796 (before the eſtabliſhment of the Houſe of Recovery), the whole number of home-patients viſited by the phyſicians of the Mancheſter Infirmary was 296, of which 226 were caſes of fever; in January 1797, the number of their home-patients was 161, and of theſe only 57 were caſes of fever." See Reports of the Society for bettering the Condition of the Poor.

Both at Mancheſter and at Dublin (where the number of fevers is much greater, and the eſtabliſhment upon a more extenſive ſcale), the diminution of fevers has been ſo great, as to enable thoſe inſtitutions to comprehend a much wider diſtrict than in the outſet. In London, many of the alleys and courts near Gray's-inn-lane, Saffron-hill, and other crowded diſtricts, in which contagious fever was generally exiſting, have been, for ſeveral years, ſince the purifying meaſures of the Houſe of Recovery were put in execution, altogether free from fever.

Dr. Ferriar remarks, while enumerating the benefits derived from theſe inſtitutions, "I can alſo perceive, that a ſalutary impreſſion has been made upon the minds of the poor reſpecting the utility of cleanneſs in their houſes. The idea of fever comprehends, among them, that of ruin to their circumſtances, and deſertion by their neighbours; it may, therefore, be expected, that they will catch at every means within their reach to avoid ſo dreadful an evil." (Loc. cit.)

Notwithſtanding the ample and demonſtrative evidence which now exiſts of the advantages and perfect ſecurity with reſpect to the public, of theſe inſtitutions, the prejudiced and erroneous notions of the communication of contagion, through the air, continue to prevail with great numbers of perſons, and to prevent the eſtabliſhment of fever-wards and houſes of recovery. Thoſe who wiſh for ſatisfactory proofs upon this ſubject, may conſult Dr. Haygarth's Letter to Dr. Percival on the Prevention of contagious Fevers: Dr. Currie's Reports on the Effects of Water: Dr. Ferriar's Med. Hiſt. and Reflections, vol. ii. and iii.: the Reports of the Houſes of Recovery of Dublin, London, &c.; and of the Society for bettering the Condition of the Poor. And in the collection of papers (2 vols.) publiſhed by Dr. Clarke of Newcaſtle, may be found the almoſt unanimous opinions upon the ſafety of ſuch eſtabliſhments, from a multitude of the moſt able and reſpectable phyſicians and ſurgeons in the iſland.

House-*tax*. See Window.

House-*water*, in *Mining*, is uſed where ſteam-engines are employed on mines, or collieries, for the water which is neceſſary for condenſing, which often is obtained at very conſiderable expence, particularly in deep lead mines, in rocky diſtricts, where the water that is pumped from the bottom of the mine can otherwiſe be diſcharged into a ſough at a great diſtance below the ſurface; in ſuch ſituations, the high-preſſure engines of Trevethick, which want no condenſing water, have been found very ſerviceable. At Yateſtoop mine, near Winſter, in Derbyſhire, they ſome years ago erected a large ſteam-engine under ground, on this ſough, to avoid the lifting of houſe-water.

House-*wife's Cloth*, is a middle ſort of linen cloth between fine and coarſe, fit for family uſes.

HOUSED-in, in *Ship Building*. The ſeaman ſay of a ſhip, which, after the breadth of her bearing is brought in too narrow to her upper-works, that ſhe is houſed-in, or pinched too much.

Housed is alſo applied to the ſituation of the great guns of a ſhip, when they are ſecured at ſea by their tackles and breechings.

HOUSE'E, in the *Manege*. See Housing.

HOUSELEEK, in *Botany*. See Sempervivum.

Houseleek, *Leſſer*. See Sedum.

Houseleek, *Small Annual*. See Tillæa.

Houseleek, *Water, of Egypt*. See Pistia.

HOUSHOLD, the family or domeſtics of a prince, or private perſon.

The principal officers of the king's houſhold are the lord ſteward, lord chamberlain, groom of the ſtole, maſter of the great wardrobe, and maſter of the horſe.

The civil government of the king's houſe belongs chiefly to the lord ſteward of the houſhold, who has an annual ſalary of 1460*l*. He has authority over all officers and ſervants of the king's houſe, except thoſe of the chapel, chamber, and ſtable, who are under the juriſdiction of the lord chamberlain, maſter of the horſe, and dean of the chapel, and he is the judge of all crimes committed within the court, or the verge. See Court.

Under the lord ſteward are a treaſurer of the houſhold, whoſe place is 1200*l*. a-year; comptroller, with the ſame ſalary; paymaſter, with 500*l*. a-year; maſter of the houſhold, at 500*l*. a-year; clerks of the houſhold, aſſiſtant clerks, clerks comptrollers, &c.; the officers and ſervants belonging to the almonry, the marſhalſea, the verge, the kitchen, gardener, purveyors, &c.

The next principal officer of his majeſty's houſhold is the lord chamberlain, whoſe ſalary is 1200*l*. a-year; in whoſe department are the vice-chamberlain, with a ſalary of 1159*l*. 8*s*. 4*d*. a-year; ſecretary and clerks, ſuperintendant of payments, groom of the ſtole, with an annual appointment of 2000*l*.; lords of the bed-chamber, grooms of the bed-chamber, gentlemen of the privy-chamber, maſter of the ceremonies with aſſiſtant and marſhal, gentlemen uſhers of the privy-chamber, gentlemen uſhers who are daily waiters, to whom belongs black rod, aſſiſtant gentleman uſher, grooms of the privy-chamber, gentlemen uſhers who are quarterly waiters in ordinary, pages of the back ſtairs, pages of the bed-chamber, maſter of the robes with groom and clerks, wardrobe-keepers, ſerjeants at arms, &c. the band of muſic, the medical department, houſekeepers, tradeſmen, artiſts, rangers and troopers of the foreſts, ſurveyors general of the king's woods, &c. chief juſtices in Eyre, officers of the royal chapels, chaplains in ordinary, ten prieſts in ordinary, ſixteen gentlemen of the chapel-royal; preachers at the king's chapel, Whitehall, organiſts, &c. ſubordinate to the maſter of the horſe, whoſe ſalary is 1266*l*. 13*s*. 4*d*. the clerk-martial and firſt equerry; the equerries, pages of honour, clerk of the ſtables, equerry of the crown ſtable, and yeomen riders. To the king's hunt belong the maſter of the ſtag-hounds, whoſe annual appointment is 2000*l*. a-year; the huntſman, ſix yeomen prickers, and grand falconer, whoſe yearly ſalary is 1200*l*. The military department of the king's houſhold conſiſts of the yeomen of the king's guards, the honourable band of gentlemen-penſioners, and the troops of the houſhold, comprehending the horſe and foot guards, &c.

Houshold *Days*, are four ſolemn feſtivals in the year, when the king, after divine ſervice, offers a beſant of gold to God on the altar. See Besant.

The houſhold days are Chriſtmas, Eaſter, Whitſunday, and All Saints.

The houſhold days are a part of the twelve collar and offering days.

HOUSING, in *Agriculture*, a term denoting the twiſting or running together of hop-binds above the tops of the poles; by which means great injury is done to the crops.

It is likewiſe employed to ſignify the practice of putting of different ſorts of live-ſtock into ſheds or other covered buildings, in order to protect them during the ſeverity of the winter ſeaſon.

Housing, or *Houſée*, a cover laid over the ſaddle of a horſe, in order to ſave it from the weather, dirt, &c.

The word is formed of the French *houſſe*, which ſignifies the ſame thing; though it anciently denoted a kind of *hood* worn by country people.

The cavaliers appeared with their embroidered houſings.

Housing, *Boot*, is a piece of ſtuff faſtened to the hinder part of the ſaddle that covers a horſe's croup; either for the ſake of ornament to hide the horſe's leanneſs, or to ſave the clothes of the rider from being daubed and ſoiled by the ſweat of the horſe.

Housing, *Shoe*, is a piece of cloth bordered with a fringe, oftentimes put round the ſaddle to cover the croup, and hang down to the lower part of the belly, to ſave the ſtockings of thoſe who ride without boots.

Housing, among *Bricklayers*, a term uſed for a brick which is warped, or is caſt crooked or hollow in burning; in ſuch a caſe, they ſay it is houſing.

Housing, or *Houſe-line*, in *Sea Language*, denotes a ſmall line formed of three fine ſtrands or twiſts of hemp, ſmaller than rope-yarn. It is chiefly uſed to ſeize blocks into their ſtrops, to bind the corners of the ſails, or to faſten the bottom of a ſail to its bolt-rope, &c.

HOUSSA, in *Geography*, a country of Africa, lying N. and S. of the Niger, or Neel-Abeed, and placed in major Rennell's map of Africa S. of the Great Deſert, or Sahara, and between Tombuctoo on the W. and Tocrur on the E., in N. lat. from about 15° to 17° 30′, and E. long. from about 3° to 5°. The inhabitants, according to the account which Mr. Horneman received of them, are negroes, but not quite black; they are diſtinguiſhed from their neighbours by an intereſting countenance, and are repreſented as the moſt intelligent people in the interior of Africa; their ſtature is leſs diſagreeable than that of the negroes, and they are much addicted to pleaſure, dancing, and ſinging. Their diſpoſition is benevolent and mild. They are deſcribed as induſtrious and ſkilful in the culture of the natural productions of their country, and in this reſpect they excel the Fezzaners, who obtain their clothes and houſhold implements from them. Their muſic, compared with that of the Europeans, is imperfect, but the Houſſanian women poſſeſs muſical powers ſufficient to produce tears from their huſbands, and to inflame their courage to the greateſt fury againſt their enemies. The capital of this country is Houſſa, ſituated, in Rennell's map, in N. lat. 16° 30′. E. long. 4° 30′. It lies at a ſmall diſtance N. from Neel-Abeed. Mr. Park was informed by a ſhereef, whom he met with at Benowm, and who had travelled through a number of kingdoms, that he had viſited Houſſa, and that it was the largeſt town he had ever ſeen. Mr. Park was alſo informed by others, that of the chief towns of Jenné, Tombuctoo, and Houſſa, ſituated on or near the banks of the Niger, the laſt was the moſt conſiderable, and that the leaſt of them was much larger than Sego. He was further told, that caravans frequently arrive both at Tombuctoo and Houſſa, from the countries on the Mediterranean, travelling acroſs the Deſert by the way of Fezzan, with European goods and other merchandize.

HOUSTONIA, in *Botany*, named by Gronovius and Linnæus, after Dr. William Houſtoun, F.R.S. who reſided ſeveral years in the Weſt Indies, and viſited the Spaniſh main, from whence he ſent various ſeeds to Miller and other botaniſts of that time, between the years 1728 and 1732, beſides making ſeveral curious obſervations upon Contrayerva, Jalap, and other medicinal plants. He died in Jamaica in 1733. Some engravings, by his own hand, of the parts of fructification of various new genera of plants, in the manner of Plumier, came into Miller's hands, who ſent an impreſſion of them, in 1736, to Linnæus. Moſt of theſe plates were purchaſed, with Miller's herbarium and papers, by ſir Joſeph Banks, who printed and liberally diſtributed an edition of them, with the Latin deſcriptions and remarks of the author, under the title of *Reliquiæ Houſtounianæ*, in quarto, in 1781. A few of the plates were re-engraved, after impreſſions of ſome that had been loſt.—Linn. Gen. 51. Schreb. 68. Willd. Sp. Pl. v. 1. 583. Mart. Mill. Dict. v. 2. Ait. Hort. Kew. ed. 2. v. 1. 235. Juſſ. 197. Lamarck. Illuſtr. t. 79. Gærtn. t. 49.—Claſs and order, *Tetrandria Monogynia*. Nat. Ord. *Stellatæ*, Linn. *Rubiaceæ*, Juſſ.

Gen. Ch. *Cal.* Perianth half ſuperior, of four ſmall, upright, permanent teeth. *Cor.* of one petal, funnel-ſhaped; tube much longer than the calyx, cylindrical, ſlightly dilated at the top; limb in four deep, roundiſh or elliptical, ſpreading ſegments. *Stam.* Filaments four, in the neck of the tube, very ſmall; anthers ſimple. *Piſt.* Germen half inferior, roundiſh, two-lobed, compreſſed; ſtyle ſimple, ſhorter than the tube; ſtigma cloven, acute. *Peric.* Capſule in the bottom of the calyx, ſurrounded by its teeth, roundiſh, didymous, burſting at the top tranſverſely, of two cells, and two valves which are contrary to the partition. *Seeds* few, ſmall, ovate, attached to the partition.

Obſ. Linnæus appears, as Gærtner remarks, to have miſtaken the receptacle covered with ſeeds for one ſingle ſeed, owing probably to the unripe ſtate in which he ſaw it.

Eſſ. Ch. Corolla of one petal, funnel-ſhaped. Capſule of two cells, half ſuperior. Seeds ſeveral, roundiſh.

1. H. *cærulea*. Linn. Sp. Pl. 152. Curt. Mag. t. 370. (Lychnidis, aut potiùs Alſines, cognata diſpermos; Pluk. Phyt. t. 97. f. 9.)—Radical leaves ovate. Stipulas abrupt. Stem repeatedly branched. Flower-ſtalks elongated, ſingle-flowered.—Native of Virginia and other parts of North America. It was brought to Kew in 1785, from the weſt coaſt of that country, by Mr. Menzies, to whom botany is ſo much indebted for various diſcoveries in that quarter, the South ſeas, and New Holland. The *roots* are fibrous and perennial. *Stems* numerous, erect, four or five inches high, and ſometimes much more, repeatedly branched, ſquare, ſmooth, ſlender, leafy, many-flowered. *Leaves* from half an inch to an inch long, entire, ſmooth, rough-edged, rather acute; the radical ones obovate or ſpatulate, ſtalked; ſtem-leaves oppoſite, much narrower. elliptic-lanceolate, ſeſſile. *Stipulas* very ſhort and broad. *Flowers* of a brilliant pale blue, or almoſt white, with a yellow eye, jaſmine-like and very pretty, but ſcentleſs, produced all ſummer long. Each grows on a very long, ſimple, naked, lateral or terminal, ſmooth ſtalk. The two-lobed *germen*, and ſtill more the *capſule*, riſes above the entire part of the calyx; though its lower half be immerſed in the baſe of the latter, all plants of this natural order having, ſtrictly ſpeaking, an inferior germen. Mr. Curtis ſays this ſpecies is quite hardy in England, beſt cultivated in a pot, with plenty of moiſture, and eaſily encreaſed by parting its roots. If paid the leaſt attention to, it flowers perpetually, ſpring, ſummer, and autumn. We have no where ſeen it ſo fine as at Kew.

2. H. *longifolia*. Willd. n. 2. Gærtn. v. 1. 226.—Leaves lanceolate, tapering at each end. Stipulas ovate, pointed, often cloven. Flowers corymboſe.—Native of North America. Gathered near Lancaſter in Pennſylvania, by the Rev. Dr. Muhlenberg. This has more the habit of a *Galium*. It ſeems perennial. The *ſtem* is from three to five inches high, ſquare, ſmooth, leafy, but little branched. *Leaves* linear-lanceolate, tapering at each end, about an inch long, ſmooth, ſomewhat revolute. *Stipulas* pale, ovate or triangular, acute; the lower ones undivided; the upper in two, three, or more ſegments. *Flower-ſtalks* axillary and terminal, forming a leafy corymbus. Teeth of the *calyx* very long; its baſe ſhort. Limb of the *corolla* not much ſpreading.

This ſpecies was confounded by Linnæus and ſome of his correſpondents with the following, from which it differs greatly in the narrowneſs of its leaves. Our Pennſylvanian ſpecimen ſeems a fellow one to what Willdenow deſcribed.

3. H. *purpurea*. Linn. Sp. Pl. 152.—Leaves ovate, roughiſh; the lower ones heart-ſhaped. Stipulas ovate, pointed. Flowers corymboſe.—Native of Virginia; ſaid to have been introduced to the Kew garden, where it flowers moſt part of the ſummer, by Mr. Maſſon, in 1800. The plant is roughiſh in many parts. *Stem* much branched, forked. *Leaves* an inch or more in length, and half an inch broad, ovate or heart-ſhaped. *Stipulas* much as in *H. longifolia*. *Infloreſcence* alſo ſimilar, but the ſtalks are rough, more numerous and more divided. *Calyx* and *corolla* ſhaped as in the laſt.

That beautiful plant the *Bouvardia triphylla* of Saliſ. Parad. t. 88; Hort. Kew. ed. 2. v. 1. 245; which is *Houſtonia coccinea* of Andr. Repoſ. t. 106, and has been referred to *Ixora* by Jacquin and Cavanilles, was long miſtaken by our cultivators for *Houſtonia purpurea*, and was once contended by ſome to be an *Hamellia*. We may now hope it will reſt in peace; yet the ignorant, who have learned to call it by a wrong name, will perhaps not eaſily adopt a new one. So important is it for thoſe who direct the public information, to be circumſpect before they decide, and never to alter but with ſufficient reaſons.

HOUT or Wood *bay*, in *Geography*, a bay on the S. coaſt of Africa, N.N.W. from the Cape of Good Hope. S. lat. 34° 5′. E. long. 18° 19′. This bay is contiguous to Chapman's bay; the latter communicating, by a defile of the mountains, about 2700 yards in length, with Vis or Fiſh bay cloſe to Simon's bay; and the former, by another defile, with the great road leading from cape Town to Simon's bay. Hout bay affords ſafe and convenient anchorage for eight or ten ſhips; and has a rivulet of freſh water falling into it from the back part of Table mountain; but the getting out of the bay is ſuppoſed to be very difficult and precarious, on account of the eddy winds from the ſurrounding mountains when they are moderate in the offing, or from the ſouth-eaſterly winds ſetting into the entrance, as well as from the conſtant weſterly ſwell and wind prevailing from that quarter in the winter ſeaſon. Hout bay is now defended with a battery and a block-houſe.

HOU-TCHEOU, a city of China, of the firſt rank, in the province of Tche-kiang, ſituated on a lake from which it takes its name. The quantity of ſilk manufactured here is almoſt incredible; and it is alſo the chief place in China for making writing pencils. Its diſtrict contains ſeven cities, one of which is of the ſecond, and ſix of the third claſs. N. lat. 30° 52′. E. long. 119° 32′.

HOUTEVILLE, Claude Francis, in *Biography*, was born at Paris in 1688. He became a member and ſecretary of the French academy, and ſecretary to cardinal Dubois, whoſe friendſhip obtained for him the abbey of St. Vincent du Bourg-ſur-mer, in the dioceſe of Bourdeaux. This was in the year 1723, and in the ſame year he was admitted a member of the French academy. He died in 1742, aged 54. His principal work is entitled "The Truth of the Chriſtian Religion proved by Facts," three vols. 4to.

HOUTTUYNIA, in *Botany*, received its name in compliment to Dr. Houttuyn, of Amſterdam, a collector and merchant of natural curioſities, one of the people who ſubſcribed towards the expence of ſending Thunberg to Japan, by which he enriched both his collection and his purſe, in the true ſpirit of a Dutch virtuoſo and patron. Thunb. Jap. 12. Act. Holm. ann. 1783. 149. t. 5. Murray in Linn. Syſt. Veg. ed. 14. 519. Schreb. 614. Willd. Sp. Pl. v. 2. 290. Mart. Mill. Dict. v. 2. Juſſ. 25. Lamarck. Illuſtr. t. 759—Claſs and order, *Heptandria Trigynia*. Nat. Ord. *Piperitæ*, Linn. *Aroideæ*, Juſſ.

Gen. Ch. *Cal.* Spatha of four ovate, concave, obtuſe, coloured, ſpreading leaves; ſpadix about as long as the ſpatha, oblong, covered with flowers; perianth none. *Cor.* none. *Stam.* Filaments generally ſeven, ſhort, equal; anthers vertical, ovate, two-lobed. *Piſt.* Germen roundiſh, ſomewhat triangular; ſtyles three, awl-ſhaped, ſhort; ſtigmas recurved, acute, downy on the upper ſide.—*Fruit* unknown.

Eſſ. Ch. Spatha of four leaves. Spadix covered with flowers. Corolla none.

1. H. *cordata*. Thunb. Jap. 234. t. 26. *Doku Dami*, or *Sjunjak*, of the Japaneſe. Found by Thunberg, very abundantly, in ditches by the way ſides, and about towns, between Miaco and Jedo in Japan, flowering in May and June. The *root* is fibrous and annual. *Stem* herbaceous, erect, from a ſpan to a foot high, ſimple, or ſlightly branched, rather zigzag, furrowed, leafy, ſcarcely downy; its lower joints throwing out numerous whorled fibres. *Leaves* alternate, ſtalked, heart-ſhaped, broad, pointed, entire, veiny, ſmooth, finely dotted; paler beneath. *Stipulas* broad, ſheathing, united to the footſtalks and claſping the ſtem. *Flowers* few, ſtalked, folitary, oppoſite to ſome of the upper leaf-ſtalks. Leaves of the *involucrum* white, rather above half an inch long. *Flowers* purpliſh, with yellow anthers.

One of profeſſor Thunberg's own ſpecimens, (indeed no other botaniſt, as far as we know, has gathered the plant,) ſhews very plainly the three recurved ſtigmas, with the ſtyles, in each flower, and has enabled us to correct the character and claſſification of the genus. The *Houttuynia* ſeems to occupy in Japan the place of our *Sagittaria*, to which its flowers bear a not very remote reſemblance, however different in botanical characters. The leaves look ſomewhat like thoſe of *Ariſtolochia Clematitis*.

HOW, in *Agriculture*, a term which frequently denotes a ſmall round hillock, or ſmall hill of the artificial kind.

How, in *Geography*, a town of Poland, in the palatinate of Lenciez; 32 miles N.E. of Lenciez.

HOWAN Sound, a ſtrait of the ſea, between the iſlands of Egilſha and Rowſa, two of the Orkney iſlands.

HOWARD, Thomas, in *Biography*, earl of Surrey, and duke of Norfolk, an eminent commander in the reign of Henry VIII., was born in 1473. He was brought up to arms, and ſoon after the acceſſion of Henry was decorated with the knighthood of the garter. He ſerved with his brother ſir Edward, againſt ſir Andrew Barton, a Scotch free-booter, or pirate, who periſhed in the action. When his brother, ſir Edward, was killed in an action near Breſt, in 1513, he was appointed to the office in his ſtead, and in the capacity of high admiral he effectually cleared the channel of French cruiſers. The victory of Flodden-field, in which the king of Scotland was ſlain, was chiefly owing to his valour and good conduct. For this his father was reſtored to the title of duke of Norfolk, and the title of earl of Surrey was conferred on him. In 1521 he was ſent to Ireland as lord-lieutenant, chiefly for the purpoſe, it was thought, of having him out of the way during the proceedings againſt his father-in-law, the duke of Buckingham. Here he was very inſtrumental in ſuppreſſing the rebellion, and having ſerved there two years, he returned, and had the command of the fleet againſt France. By the death of his father, he ſucceeded to the title and eſtates as duke of Norfolk. Notwithſtanding his great ſervices, Henry, at the cloſe of his tyranical life and reign, cauſed the duke to be ſent to the Tower on a charge of high treaſon, and his ſon to be beheaded in his preſence. The death of the king ſaved the duke's life. (See Henry VIII.) He was, however, detained priſoner during the whole of the reign of Edward VI., but one of the firſt acts of Mary, after her acceſſion to the throne, was to liberate this faithful ſervant of her late father. He was, after this, the principal inſtrument in ſuppreſſing the rebellion excited by ſir Thomas Wyatt. He died in Auguſt 1554, having paſſed his eightieth year. Hume's Hiſt.

Howard, Henry, earl of Surrey, ſon of the preceding, a nobleman of conſiderable accompliſhments, and one of the early Engliſh poets, was born about the year 1520. In his youth, he reſided at Windſor as companion to the young duke of Richmond, natural ſon to Henry VIII., whom he afterwards accompanied to Wolſey's new college at Oxford. He then made the tour of Europe, under the impreſſion of a romantic paſſion for the daughter of the earl of Kildare, whom he characterizes with the epithet of "Fair Geraldine." In the ſpirit of chivalry, he publiſhed at Florence a general challenge at tilting to all perſons who ſhould diſpute the ſupremacy of her beauty. He came off victorious, and as a reward, was preſented with a ſhield by the grand duke of Tuſcany. On his return to England, about 1541, he was decorated with the order of the garter. In 1542 he acted as lieutenant-general in the army with which his father invaded Scotland. He accompanied the king in his expedition to France in 1544, and was field-marſhal of the army before Boulogne. After ſerving his country with great valour, he fell a victim to the jealouſy of Henry VIII., who pretended to ſuſpect him of a deſign to marry his daughter Mary. He and his father, as we have already ſeen, were ſent to the Tower, and the ſon was beheaded on Tower-hill, in the year 1547, leaving behind him two ſons and three daughters. His ſonnets are printed in Anderſon's collection of Britiſh Poets. His eldeſt ſon, Thomas, was the duke of Norfolk, who was ſo conſpicuous in the reign of Elizabeth for his negociations with Mary, queen of Scots, terminating in his ruin. The earl of Surrey tranſlated the ſecond and fourth books of Virgil's Æneid, which were publiſhed in 1557. According to Warton, "Surrey, for juſtneſs of thought, correctneſs of ſtyle, and purity of expreſſion, may juſtly be pronounced the firſt Engliſh claſſical poet."

HOWARD, CHARLES, lord Effingham, and earl of Nottingham, a diſtinguiſhed naval commander, was born in 1536; he was ſon of lord William of Effingham, and grandſon to Thomas, ſecond duke of Norfolk. In his youth he ſerved in ſeveral expeditions under his father, then lord-admiral, and, in 1559, he was ſent as ambaſſador to France, and after his return he was elected knight of the ſhire for Surrey. In 1568 he was appointed general of the horſe. The ſame year he diſplayed great valour in the north, againſt the rebels commanded by the earls of Northumberland and Weſtmoreland. The following year he had the command of a ſquadron, with which he eſcorted, from Zealand to Spain, Anne of Auſtria, daughter of the emperor Maximilian, who was betrothed to Philip of Spain. In 1572 he ſucceeded his father as lord Effingham, and not long after was made knight of the garter. He had, as we have ſeen in ſome preceding articles, the important command of the Engliſh fleet when the Spaniſh Armada entered the channel, and by his great ſkill and prudence contributed principally to its deſtruction. For this important ſervice he was created earl of Nottingham, and enjoyed the queen's confidence to her death. (See ELIZABETH.) In the rebellion excited by the earl of Eſſex, lord Nottingham commanded the force which inveſted Eſſex-houſe, and brought him to ſubmiſſion. At the coronation of king James, the earl officiated as lord high-ſteward, and he was ſoon after appointed ambaſſador to the court of Spain. His laſt ſervice in the capacity of admiral, was the convoying to Fluſhing of the princeſs Elizabeth, married in 1613 to the elector palatine. After his return, he loſt the king's favour, and reſigned the poſt to the duke of Buckingham. He died in 1614. Biog. Brit. Hume.

HOWARD, *ſir* ROBERT, an Engliſh writer, was the ſon of Thomas, earl of Berkſhire, and educated at Magdalen college, Oxford. He ſuffered conſiderable loſſes during the civil wars, but at the Reſtoration he was knighted, and made auditor of the exchequer. He was a zealous friend of the Revolution, and died about the year 1700. As an author, he wrote ſeveral plays: the Hiſtory of the Reigns of Edward and Richard II.: the Hiſtory of Religion, 1694.

HOWARD, JOHN, born at Hackney, or Enfield, in 1727, was ſon of a carpet-warehouſeman, and upholſterer in London. The father died during the infancy of his ſon, who was left in the hands of guardians, by whom he was apprenticed to a grocer. He did not ſerve his time out, but bought his indentures, and indulged his curioſity in a tour to France and Italy. Upon his return, he fell into a weakly ſtate of health, which, with his attachment to reading and the ſtudy of nature, induced him to withdraw into privacy in the country. From a motive of gratitude, he married the perſon with whom he lodged, and who had carefully attended him, though ſhe was ſickly, and twice his age, and even remonſtrated againſt the inequality of ſuch an union. He paſſed three years with her in conjugal harmony, and upon her death, in 1756, ſat out upon another tour to the continent. In this, his leading object was to view the ruins of Liſbon, lately deſolated by an earthquake. He was defeated in his plan by the capture of the veſſel in which he ſailed, and by being carried a priſoner into France. The ſufferings which he underwent, and to which he was witneſs in others, made a deep impreſſion on his mind; this was probably the principal cauſe of the philanthropical exertions which afterwards employed ſo large a portion of his life. Upon his liberation, he laid the ſtate of his fellow-ſufferers before the commiſſioners of the ſick and wounded, who received his information with gratitude. In 1758 he married the eldeſt daughter of Mr. Serjeant Leeds, of Croxton, Cambridgeſhire. His principal reſidence for ſome years was at Cardington, near Bedford, where he put in practice thoſe ſchemes for the good of his poor neighbours and tenants, in which he ever took delight. He built upon his eſtate a number of very neat and comfortable cottages, to each of which he annexed a little ground for a garden. Theſe he peopled with ſober and induſtrious tenants, over whoſe welfare he watched with the vigilance of a parent. In 1765 his domeſtic happineſs was irreparably injured by the death of his wife, ſoon after ſhe had borne him her only child. The care of his ſon and his uſual benevolent occupations continued to employ him till the year 1773, when he was ſelected to ſerve the office of high-ſheriff for the county of Bedford. In the courſe of his official duties he found that a multitude of abuſes prevailed, which he knew not how to remedy; he determined, however, to obtain every poſſible information on the ſubject. He began by viſiting moſt of the county gaols in England; and on a ſecond journey he extended his reſearches into town-priſons and houſes of correction, and ſo diligently did he purſue his object, that he was enabled, in the month of March 1774, to lay before the houſe of commons a large maſs of information, for which he received the public thanks, and on the credit of his teſtimony, two bills were paſſed during the ſame ſeſſion of parliament, one, "For the Relief of acquitted Priſoners in Matters of Fees:" the other, "For preſerving the Health of Priſoners." The heads of theſe bills, with the ſeveral regulations contained in them, Mr. Howard procured to be printed, and ſent to every keeper of a gaol throughout England. He now felt the high importance of the buſineſs in which he had engaged, and reſolved to devote himſelf and his fortune to the improvement of this part of civil polity. With this view he made two tours on the continent, travelled into Scotland and Ireland, and the fruit of his reſearches was given to the public in 1777, under the title of "The State of the Priſons in England and Wales, with Preliminary Obſervations, and an Account of ſome Foreign Priſons." As ſoon as this work appeared, the world was aſtoniſhed at the maſs of valuable materials accumulated by a private, unaided individual, through a courſe of prodigious labour, and at the conſtant hazard of his life, in conſequence of the infectious diſeaſes prevalent in the ſcenes of his enquiries. He was, from this moment, looked on as one of the extraordinary characters of the age, raiſed up by providence for the purpoſe of meliorating the condition of that wretched part of the community for whom he intereſted himſelf. He was anxious to correct their vices, which he thought would be beſt effected by gentle but ſtrict diſcipline, accompanied with all the comforts of which their wretched ſituation was ſuſceptible. His zeal was ſeconded by the exertions of parliament, and a bill was brought in for the eſtabliſhment of houſes of correction, according to his ideas. He now made another tour on the continent, and took a ſtill more accurate view of all the priſons in every part of England, Wales, Scotland, and Ireland, including in his obſervations whatever related to hoſpitals. He every where noted down the ſtructure and regulations of theſe ſeveral kinds of buildings, and procured plans and draughts where he thought they might ſuggeſt ſomething uſeful for imitation. Theſe reſearches furniſhed him with materials for an appendix to his former work, which was printed in the year 1780. About this period he accepted the office of one of the three ſuperviſors appointed for eſtabliſhing penitentiary houſes. He made it a condition of his acceptance that Dr. Fothergill ſhould be one of his aſſociates, but the death of the doctor, and ſome difference of opinion concerning the ſituation of the firſt of theſe buildings, cauſed him, in 1781, to reſign his office, but it was only to reſume his far greater exertions in the ſame noble cauſe. He travelled through the whole of the northern kingdoms of Europe, and reviſited the priſons of his own country: he ſeemed reſolved to take no repoſe while any thing remained in which he thought his farther labours might ſerve the intereſts of humanity. The progreſs of contagion, in priſons and hoſpitals, had led him to conſider all the means uſed for checking it, and he expected to find theſe practiſed in their fulleſt extent in the prevention of the plague; he therefore reſolved to examine all the lazarettos in Europe. Perſonal riſk never, in his eſtimation, ſtood in the way of duty: he did not heſitate to expoſe himſelf to all the dangers which attended ſo near an approach to the moſt alarming peſtilence. He ſat out in 1785, unaccompanied by a ſervant, not thinking it juſtifiable to expoſe any human being to the dangers which, for the public good, he was willing to undergo. He took his way by the ſouth of France, through Italy, to Malta, Zante, Smyrna, and Conſtantinople. From the laſt named city he returned to Smyrna, where he knew the plague then prevailed, for the expreſs purpoſe of going to Venice with a "Foul Bill," as it is called, that he might be ſubjected to all the rigour of a quarantine in a lazaretto, in order that he might practically know its rules. Such an enterpriſing and heroic conduct in the great cauſe of humanity excited the attention of almoſt every thinking individual of Europe. On his return by Vienna, the emperor Joſeph expreſſed a deſire of ſeeing him: the interview paſſed as between an enlightened ſovereign deſirous of information, and a plain independent gentleman, above the awe of rank or the vanity of being noticed. During his abſence on this journey, a ſubſcription was entered into for the purpoſe of erecting a ſtatue, and it was ſoon filled with names of the firſt diſtinction. As ſoon as he heard of the ſcheme, he expreſſed ſuch a decided averſion from what he denominated being "dragged out in public," that it was reluctantly abandoned. On his return he reviſited once more the priſons, bridewells, hoſpitals, and priſon-hulks of his own country, which occupied his attention during the courſe of two years. The year 1789 was chiefly devoted by him to the methodizing and printing the important matter which he had collected ſince his laſt publication. This appeared in a quarto volume, entitled "An Account of the principal Lazarettos in Europe, with various Papers relative to the Plague, &c." At the cloſe of this publication he declared his intention of again quitting his native country, for the purpoſe of reviſiting Ruſſia and Turkey, and extending his travels in the Eaſt. He quitted England in the ſummer of 1789, and proceeded through Germany, to Peterſburg and Moſcow; at all places the priſons and hoſpitals were thrown open to him, as if the governments of the earth were ready to ſecond his humane and benevolent deſigns, and hailed his preſence as that of a general cenſor of that part of the police, whoſe authority was recognized in every civilized country. He next proceeded to the new Ruſſian ſettlements on the Black ſea, and took his ſtation at the town of Cherſon. At this place a fever of a moſt malignant kind prevailed; among the victims of which was a young lady whom he had been requeſted to viſit, being ſuppoſed to poſſeſs medical ſkill of a ſuperior kind in thoſe caſes. From her he probably received the contagion which carried him off on the 20th of January 1790, about the age of ſixty-three. He was buried in the neighbourhood of Cherſon, and all honours were paid to his memory by prince Potemkin and other men in office. For a more full and very intereſting account of this gentleman, who has been frequently characterized, and juſtly ſo, as "The nobleſt of all the Howards;" the reader is referred to Dr. Aikin's "View of the Character and public Services of the late John Howard, eſq. LL. D. F. R. S." 1792. Dr. Aikin expreſſes himſelf in the following terms in the General Biography: "The bare recital of what Mr. Howard did in the cauſe of humanity, is ſufficient to place him among the greateſt benefactors of mankind, as well as the moſt extraordinary private characters recorded in biography. He was, indeed, ſingularly calculated for the taſk which he undertook. Accuſtomed to the moſt rigorous temperance, ſo as to diſcard from his diet animal food and fermented liquors, he found no difficulty in living in the pooreſt countries. In all other reſpects his mind was equally maſter of his body, and he incurred hardſhips of every kind without repugnance. In temper he was calm and repoſed, but firm and reſolute; proof againſt every allurement or intimidation that might divert him from his purpoſe. Economical in private expences, he knew no bounds in his expenditure on objects of public utility, and regarded money only as an inſtrument of beneficence. In honour, integrity, and attachment to principles, he was not ſurpaſſed by any human being. His talents were rather of the uſeful than the ſhining kind, but peculiarly adapted for that collection of facts and obſervations in which he employed himſelf. The teſtimony of public reſpect which he refuſed when living, has been conferred upon his memory, and his monumental ſtatue was one of the firſt of thoſe by which the cathedral of St. Paul's has been made a receptacle of national worthies."

We cannot cloſe this article without ſubjoining the eloquent eulogium pronounced upon Mr. Howard, by Mr. Burke in his "Speech at Briſtol, previous to the election in 1780." Having occaſion to mention him, he adds, "I cannot name this gentleman without remarking, that his labours and writings have done much to open the eyes and hearts of mankind. He has viſited all Europe,—not to ſurvey the ſumptuouſneſs of palaces, or the ſtatelineſs of temples; not to make accurate meaſurements of the remains of ancient grandeur, nor to form a ſcale of the curioſity of modern art; not to collect medals, or collate manuſcripts;—but to dive into the depths of dungeons; to plunge into the infection of hoſpitals; to ſurvey the manſions of ſorrow and pain; to take the gage and dimenſions of miſery, depreſſion, and contempt; to remember the forgotten, to attend to the neglected, to viſit the forſaken, and to compare and collate the diſtreſſes of all men in all countries. His plan is original; and it is as full of genius as it is of humanity. It was a voyage of diſcovery; a circumnavigation of charity. Already the benefit of his labour is felt more or leſs in every country; I hope he will anticipate his final reward, by ſeeing all its effects fully realized in his own. He will receive not by retail, but in groſs, the reward of thoſe who viſit the priſoner; and he has ſo foreſtalled and monopolized this branch of charity, that there will be, I truſt, little room to merit by ſuch acts of benevolence hereafter."

HOWARD, SAMUEL, brought up in the king's chapel, took his degree of doctor of muſic at Cambridge at the time of the Inſtallation of the duke of Grafton as chancellor of that univerſity. Dr. Howard had ſtudied much under Dr. Pepuſch at the Charter-houſe, and was well acquainted with the mechanical rules of counterpoint. His overture in the "Amorous Goddeſs," a happy imitation of Handel's overture in "Alcina," particularly the muſette and minuet, was long very popular in the theatres and public gardens. But his ballads, which were long the delight of natural and inexperienced lovers of muſic, had the merit of facility; for this honeſt Engliſhman preferred the ſtyle of his own country to that of any other ſo much, that he never ſtaggered in his belief of its being the beſt in the world, by liſtening to foreign artiſts or their productions, for whom and for which he had an invincible averſion.

He began to flouriſh about the year 1740, and from that time till Arne's Vauxhall ſongs were publiſhed under the title of "Lyric Harmony," they were the moſt natural and pleaſing which our country could boaſt.

After the deceaſe of Michael Chriſtian Feſting, Dr. Howard took the lead in managing the affairs of the muſical fund; but not with equal addreſs and intelligence.

He was a dull, vulgar, and unpleaſant man; and by overrating his own importance, and reigning paramount over his equals, he rendered the monthly meetings diſagreeable, and cooled the zeal of many well-wiſhers to the ſociety.

He long laboured under a dropſy, yet walked about with legs of an enormous ſize, during ſeveral years. But it was not this diſorder which put an end to his exiſtence, at laſt, but repeated paralytic ſtrokes. He died about the year 1783.

HOWARD'S *Point*, in *Geography*, a cape on the N. W. coaſt of the iſland of Egmont, or New Guernſey. S. lat. 10° 42'. E. long. 164° 18'.

HOWARD, a townſhip of America, in the county of Suffolk, Upper Canada, W. of Oxford; watered on the N. by the Thames and on the S. by lake Erie.

HOWASSE, a town of Hindooſtan, in Malwa; 10 miles N.E. of Tandla.

HOWDEN, anciently called *Hoveden*, a market town in the diviſion of Howdenſhire, in the Eaſt Riding of the county of York, England, is 20 miles S.E. of the city of York, 25 W. of Hull, and 184 N. of London. In the year 1801 the town contained 325 houſes and 1552 inhabitants. In the reign of Edward the Confeſſor this town, with the church and lands around it, belonged to the monaſtery of Peterborough. William the Conqueror, however, ſeized them, and gave the whole to the biſhop of Durham: in conſequence of which the biſhop built a palace here. And ſome of them made it their principal reſidence. The following prelates died here: Hugh Pudſey in 1195: Walter de Kirkham in 1260; and Walter de Skirlaw in 1405. Leland deſcribes the biſhop's palace as built partly of timber and partly of brick and ſtone. What remains is now converted into a farm houſe, near which are the ruins of ſeveral large buildings, and a long range of granaries. King Henry III. granted the biſhops the following privileges attached to this manor: the goods of all perſons who committed felo-de-ſe; of wrecks caſt on the ſhores of the Ouſe; of tollage and laſtage; of having a clerk of the market; and a coroner, &c. This town has been much improved lately, in the erection of new buildings, paving the ſtreets, and in other reſpects. In the market place is a large edifice called the Moot-hall; in which is the council houſe, a place for keeping courts. The biſhops of Durham are required by ancient cuſtom to maintain a bull-ring in the market place, and to provide ropes for ſecuring the bulls when baited. In the year 1791 a large work-houſe was built here by ſubſcription. The Domeſday ſurvey notices a church at the place; but the preſent building is of different eras. The tower was built by biſhop Skirlaw about the year 1390, and the ſame prelate alſo erected a chapter-houſe on the ſouth ſide of the choir. This church is collegiate, and is built in a cruciform ſhape, with a nave, tranſepts at the eaſtern end, or chancel, and tower in the centre. It diſplays ſome intereſting ſpecimens of ancient eccleſiaſtical architecture. It is much to be regretted that the inhabitants have ſuffered the elegant chapter-houſe to fall in ruins: and the chancel part is alſo in a ſhameful dilapidated ſtate. Here are a weekly market on Saturdays, and five annual fairs, one of which, commencing on the 25th of September, ending on the 3d of October, is conſidered the greateſt mart for horſes in England. In the pariſh are two chapels of eaſe, one at Barmley, and the other at Laxton. A chapel for Methodiſts, and another for Independents, are eſtabliſhed here. This place gave birth to Roger of Hoveden, who was monk of the abbey. Savage's Hiſtory of Howden Church, 12mo. 1799, and Hutchinſon's Hiſtory, &c. of Durham.

HOWE, JOHN, in *Biography*, a learned Engliſh nonconformiſt divine, was born at Loughborough, in Leiceſterſhire, in the year 1630. His father, who was miniſter of the place, being ejected by archbiſhop Laud, on account of connecting himſelf with the Puritans, removed with his ſon to Ireland, where they continued, till the rebellion in that country obliged them to return to England, when they ſettled in Lancaſhire. The ſon received a good claſſical education, and was ſent at an early age to Chriſt's college, Cambridge. He continued at Cambridge till he took his degree of B. A., and then removed to Oxford, where he was appointed bible-clerk of Brazen-Noſe college in 1648 In this ſituation he ſo diſtinguiſhed himſelf in learning and piety, that he was elected fellow of Magdalen college. In 1652 or 3, he became a preacher, and was ordained at the church of Winwick, Lancaſhire, after which he was choſen miniſter of Great Torrington in Devonſhire, where he diſcharged the functions of his office in the moſt exemplary manner. Having occaſion to take a journey to London, he went as a hearer to the chapel at Whitehall. Cromwell was preſent, and, ſtruck with his demeanor and perſon, ſent a meſſenger to inform him that he wiſhed to ſpeak with him when the ſervice was over. In the courſe of the interview he deſired him to preach before him the following Sunday: he requeſted to be excuſed: the protector would not be denied, and even undertook to write to his congregation a ſufficient apology for his abſence from them longer than he intended. This led to the appointment of Mr. Howe to the office of his domeſtic chaplain, and he accordingly removed with his family to Whitehall. He was ſoon appointed lecturer of St. Margaret's church, Weſtminſter, where he was much admired and followed as a preacher. In this ſituation of importance and influence Mr. Howe embraced every occaſion that offered of promoting the intereſts of religion and learning, and was always ready to do kind offices to men of merit among the royaliſts. He was ſo zealous in behalf of the intereſts of others, that Cromwell once aſked him if he never meant to think of himſelf; "I wonder," ſays he, "when the time is to come, that you will move for any thing for yourſelf, or your family." To ſome of the peculiar notions of Cromwell Mr. Howe could not aſſent, and in one particular inſtance he thought it right to preach againſt them in his preſence, becauſe he believed they might lead to practical ill conſequences. The friends of the preacher were alarmed for him, and one of them predicted, that he would find it difficult, if not impoſſible, to regain his favour. "I have," ſaid the worthy man, "diſcharged my conſcience, and the event muſt be left to God." From this period the friendſhip of Cromwell was leſs ardent, and his manners cool and reſerved, but he never mentioned the ſubject to him. Upon the death of Oliver, he was continued by his ſon Richard in the ſame ſituation, as domeſtic chaplain at Whitehall, and upon the depoſition of Richard, he returned to his people at Torrington. In 1662, he was ejected from his living under the act of Uniformity; but after he had been ſilenced by the law, he continued to preach occaſionally in the private houſes of his friends and acquaintance, till a proceſs was taken out againſt him. He was ſummoned before the biſhop of Exeter, who did what he could, as a friend, to perſuade him to conform, but when he found that his admonitions were in vain, the prelate diſmiſſed him with ſtrong aſſurances of his continued regard. In 1671, Mr. Howe removed to Ireland, to become chaplain to lord Maſſarene, who lived at Antrim, by whom he was received and treated with great reſpect and attention. On account of his learning, and true Chriſtian temper, he acquired the particular friendſhip of the biſhop of Antrim, who, together with his metropolitan, gave him leave to preach in the pariſh church every Sunday in the afternoon, without ſubmitting to the terms of conformity. In the year 1685, the Diſſenters being cruelly perſecuted in every corner of the kingdom, Mr. Howe accepted of an invitation from lord Wharton to accompany him on his travels into foreign countries. During theſe travels he had the ſatisfaction of ſeeing moſt parts of Europe, and of converſing freely, not only with a number of learned Papiſts, but ſeveral eminent Proteſtant divines, both Lutherans and Calviniſts. In 1686, he ſettled at Utrecht, where he took his turn in preaching at the Engliſh church in the city, and aſſiſted the Engliſh ſtudents in the univerſity, by his inſtruction and advice in the proſecution of their ſtudies. Here he became acquainted with ſeveral eminent perſons of his own country, and among others with Dr. Burnet, afterwards biſhop of Saliſbury, with whom he was accuſtomed to ſpeak freely upon a variety of topics. In a converſation they once had reſpecting nonconformity, Dr. Burnet told him that it would not laſt long; but that when Mr. Baxter, Dr. Bates, and himſelf (Mr. Howe) were laid in their graves, it would ſink and come to nothing. Mr. Howe ſaid it could not be ſo, becauſe it did not depend on perſons but principles, which, when adopted on grounds approved of after ſerious and ſincere enquiry, would not be laid aſide by men of conſcience. While he continued in Holland, Mr. Howe was admitted to frequent audiences by the prince of Orange, afterwards king William III. of England, who always maintained a ſincere reſpect for him. Mr. Howe returned home in 1687 upon king James's declaration for liberty of conſcience, but ſcarcely was he quietly ſettled when he was called on by his brethren to conſider what was to be done in that criſis, and he without heſitation gave his opinion againſt the king's diſpenſing power. After the Revolution he diſcharged the duties of his paſtoral office with unwearied diligence, labouring moſt zealouſly to promote the intereſts of real practical religion, and to diffuſe a ſpirit of candour, charity, and mutual forbearance, among his diſſenting brethren. He died in 1705, when he had nearly completed his ſeventy-fifth year. Mr. Howe was a perſon of diſtinguiſhed piety and virtue, of eminent intellectual endowments, and of extenſive learning. According to Granger, "He was one of the moſt learned and polite writers among the Diſſenters. His reading in divinity was very extenſive: he was a good Orientaliſt, and underſtood ſeveral of the modern languages." His works are numerous and truly excellent; the whole have been collected and printed in two volumes folio, 1724, with a life of the author prefixed, to which the reader is referred for more particulars than can be given in this article. Perhaps the principal of his pieces are "The Bleſſedneſs of the Righteous laid open," and "The Living Temple: or a deſigned Improvement of that Notion that a good Man is the Temple of God." Biog. Brit. Neal's Hiſtory of the Puritans.

HOWE, RICHARD, *Earl*, born in 1725, was the ſecond ſon of lord viſcount Howe. He was educated at Eton, which he left when he was only fourteen years of age, to enter the ſervice of his country on board the Severn, commanded by the honourable captain Legge, which made a part of commodore Anſon's ſquadron deſtined for the ſouth ſeas. At twenty years of age he was appointed to the command of a ſloop of war; in this he beat off two large French frigates after a gallant action, for which he was made poſt-captain. He was now appointed to a frigate, and afterwards made captain of admiral Knowles's own ſhip of eighty guns in Jamaica, with which, at the peace in 1748, he returned to England. On the renewal of the war he was appointed to the Dunkirk of ſixty guns, making part of admiral Boſcawen's ſquadron, and he captured, off Newfoundland, the Alcide French man-of-war of ſixty-four guns. In 1757, he ſerved under admiral Hawke, and in the following year was appointed commodore of a ſquadron, with which he deſtroyed a number of ſhips and magazines at St. Malo. Prince Edward, afterwards duke of York, ſerved on board his ſhip, and on the ſixth of Auguſt, of the ſame year, he took Cherbourg, and deſtroyed the baſon. About this time, by the death of his brother, he became lord Howe, and ſhortly after had a conſiderable ſhare in the victory over the French fleet commanded by Conflans. When admiral Hawke preſented him to the king, his majeſty ſaid, "your life, my lord, has been one continued ſeries of ſervices to your country." On the return of peace he was appointed a lord of the admiralty, and afterwards treaſurer of the navy. In 1770 he was promoted to the rank of rear-admiral of the blue and commander-in-chief in the Mediterranean. In 1775 he roſe in ſucceſſion to vice-admiral of the blue: at this time, lord Hawke gave the following ſeaman-like teſtimony to his merit in the houſe of lords, "I adviſed his majeſty," ſaid he, "to make the promotion, I have tried my lord Howe on important occaſions: he never aſked me how he was to execute any ſervice, but always went and performed it." In the conteſt with America, it was the policy of miniſters to employ, in high commands, officers whoſe public principles had led them to be favourers of popular rights, and the oppoſers of coercive meaſures. Among theſe none ſtood higher than lord Howe, and his brother the general. Theſe, by embarking in the cauſe, were probably actuated with the perſuaſion that they could ſettle the differences without having recourſe to the ſword. Lord Howe went out with limited inſtructions, and every attempt at pacific meaſures proved to be in vain. He was now obliged, by his naval character, to follow ſuch a plan as would do honour to his profeſſion. When the French joined the American cauſe, lord Howe had an opportunity of exhibiting his great talents as a commander; in 1778, through the inattention of the adminiſtration, he was left with a force very inferior to that of the enemy, and the Engliſh fleet was brought into a ſituation of much danger, but by the ſkilful exertion of his lordſhip, the French thought it prudent to ſail away, without putting their ſtrength to a trial. The enemy's fleet now inveſted Rhode Iſland, but by the manœuvres of lord Howe its plans were again defeated. Diſguſted, probably, with the cauſe in which he never cordially embarked, and deteſting the principles of an adminiſtration who were deſirous of deſtroying the rights of their countrymen acroſs the Atlantic, lord Howe reſigned in 1778, and remained unemployed till 1782, when, upon the change of adminiſtration, he was advanced to the rank of admiral of the blue, created a viſcount of Great Britain, and appointed to the command of a fleet fitted out for the relief of Gibraltar, which he performed in the teeth of the combined fleets of France and Spain, who ſhunned an action, though far ſuperior in force and numbers. At the concluſion of the war he was made firſt lord of the admiralty, an office which he held with a ſhort intermiſſion by a change of adminiſtration, till 1788, when he was created an Engliſh earl. In 1793, when the war with France broke out, his lordſhip, at the king's particular deſire, accepted the command of the channel fleet, and on the glorious 1ſt of June, as it is now called, he obtained a moſt deciſive victory over the French Fleet, took ſeven men of war, and rendered the others incapable of farther oppoſition. On the part of the Britiſh not a ſhip was deſtroyed, or taken, or even much injured, and this vaſt ſucceſs was obtained with the loſs of but few men, though the ſlaughter among the enemy's crews was very great. The gratitude and enthuſiaſm of the nation was proportioned to the importance of the ſervice, and the 1ſt of June is conſigned, by the epithet already noticed, to futurity, among the moſt ſplendid days of our national calendar. In 1795 lord Howe was appointed general of the marines, and in 1797 he reſigned his naval command, and was decorated with the order of the garter. His lordſhip died in 1799, at the age of ſeventy-three, having ſerved his country with the higheſt reputation for a long period of almoſt threeſcore years. Lord Howe was ever diſtinguiſhed by cool and ſteady valour, ſound judgment, and conſummate ſeamanſhip. Month. Mag. Gent. Mag.

Howe, *The*, in *Geography*, a ſmall iſland in the Engliſh channel, near the N.W. coaſt of the iſland of Guernſey.

Howe's *Foreland*, the northern point of a peninſula on the N.E. coaſt of Kerguelen's land. S. lat. 48 48'. E. long. 69 28'.

Howe's *Iſland*, an iſland in the South Pacific ocean. S. lat. 31° 36'. W. long. 159° 4'.

Howe's *Iſland*, an iſland in the South Pacific ocean, diſcovered by Captain Wallis in 1767, on which a few cocoa-nut trees were growing. It is about ten miles long and four broad. S. lat. 16° 46'. W. long. 154° 8'. Captain Cook obſerved it in his paſſage from Ulietea to the Friendly iſles, in 1774, and found it to be a low reef-iſland of a circular form, about four leagues in compaſs, compoſed of ſeveral ſmall patches connected by breakers, the largeſt lying on the N.E. part. It appeared to have no inhabitants.

Howe's, or *Lord Howe's Iſland*, one of the cluſter, called Queen Charlotte's iſlands, ſeparated from Egmont iſland by a paſſage extending about 11 leagues, and about four miles broad. Lord Howe's iſland lies in S. lat. 11° 10'. E. long. 164° 43'; and Cape Byron, the N. E. point of Egmont iſland, in S. lat. 10° 40'. E. long. 164° 49'. Both theſe iſlands appear to be fertile, and have a pleaſant appearance, being covered with tall trees of a beautiful verdure. The inhabitants of Egmont iſland are extremely nimble, vigorous, and active, and ſeem to be almoſt as well qualified to live in the water as upon the land, as they were in and out of their canoes almoſt every minute.

Howe's *Sound*, a bay or inlet in the gulf of Georgia. The entrance is in N. lat. 49° 23'. E. long. 237°.

HOWELL, James, in *Biography*, born in Carmarthenſhire about 1596, was educated at Jeſus college, Oxford, and at the cloſe of his ſtudies he came to London to ſeek employment, being unable, through ſtraightened circumſtances, to remain at the univerſity the uſual period. Through the intereſt of ſir Robert Manſel he was appointed ſteward to a patent glaſs manufactory, it being requiſite to ſend an agent abroad to procure the beſt materials and workmen. He left England in 1619, and viſited many commercial towns in Holland, Flanders, France, Spain, and Italy. In this journey he laid in a large ſtock of knowledge of men and things, and obtained an acquaintance with modern languages very unuſual at that period. His love of literature did not prevent him from performing his duty to his employers. He negociated a ſupply of the beſt barilla, at a cheap rate, from Alicant, and engaged ſome able workmen at Venice and other places. He returned to London in the winter 1621; in the following year he went to Spain, and during his abſence was choſen fellow of Jeſus college. In 1624 he had acquired ſuch reputation that he was made ſecretary to lord Scrope, preſident of the North, and in 1627 was choſen member of parliament for Richmond, Yorkſhire. In 1630 he accompanied Robert, earl of Leiceſter, who was appointed ambaſſador extraordinary to the court of Denmark, in quality of his ſecretary, and diſplayed his oratorical talents in Latin ſpeeches before the king of Denmark and ſome German princes. He was afterwards employed in ſtate affairs, and in 1640 became clerk of the council; but in 1643 his papers were ſeized by order of parliament, and he was committed to the Fleet, where he ſupported himſelf by his pen. His writings were numerous, but chiefly of a temporary kind. He is chiefly known as an author by A Collection of Letters, in one volume, octavo, containing much of the hiſtory of the times. In the reign of Charles I. he was eſteemed a royaliſt, but his remarks upon the fatal cataſtrophe which terminated that inglorious reign ſhew that he felt nothing for the fate of the monarch. He flattered Cromwell, and by his bending temper he was made hiſtoriographer to Charles II. He died in 1666, and the following inſcription is to be ſeen on his tomb in the Temple church: "Jacobus Howell, Cambro-Britannus, Regius Hiſtoriographus (in Anglia primus); qui poſt varias peregrinationes tandem naturæ curſum peregit, ſatur annorum et famæ, domi foriſque: huc uſque erraticus, his fixus. Biog. Brit.

HOWILEMUR, in *Geography*, a town of Perſia, in the province of Ghilan; 90 miles N.W. of Reſhd.

HOWITZERS, in *Artillery*, are a kind of mortars, invented by the Germans about the year 1593 or 1594, which are mounted upon carriages like travelling gun-carriages, and have their trunnions placed nearly in the middle. The conſtruction of howitzers is as various as that of mortars, excepting the chambers, which are all cylindric. They are diſtinguiſhed by the diameter of the bore, *e. g.* a ten inch howitzer is that, the diameter of which is 10 inches. Howitzers are capable of doing great execution, by firing ſhells and grapes of ſhots, in a ſiege where the diſtance is ſmall, and in the field, if they were placed in the flanks or between the battalions. They are alſo more eaſily carried from one place to another than mortars. For the dimenſions of different howitzers, and remarks on their conſtruction, the reader may conſult the article Cannon.

HOWKER, or Hooker, a veſſel much uſed by the Dutch; built ſomething like a pink, but rigged and maſted like a hoy.

Howkers carry from 50 to 200 ton; and with a ſmall number of hands will go to the Eaſt Indies. They are commonly navigated with two maſts, *viz.* a main-maſt and a mizen-maſt. They tack ſoon and ſhort, will ſail well, and lie near the wind, and live almoſt in any ſea.

HOWLE, in *Ship-Building*. When the foot-hooks of a ſhip are ſcarfed into the ground-timbers, and bolted, and then the plank laid on them up to the orlop, the carpenters ſay, they begin to make the ſhip howle.

HOWSTACK, in *Geography*, one of the ſmaller Shetland iſlands, near the E. coaſt of Mainland. N. lat. 60° 23′. W. long. 1° 10′.

HOWTH, a peninſula on the W. coaſt of Ireland, which ſtretches to the eaſtward, on the north of Dublin bay. The hill of Howth is an important guide to the mariner, and a light-houſe has been erected on it in a conſpicuous ſituation. As, however, the bay of Dublin is often difficult of acceſs, and as the bar is a great impediment to the ſailing of the packets at a fixed hour, the attention of government has been directed to the forming of an harbour on the north ſide of the peninſula of Howth; and a very fine pier is now (1811) erecting for this purpoſe under the direction of able engineers. It is expected that this new harbour will not only anſwer as a much better ſtation for the packet-boats, but will alſo contribute to improve the trade of Dublin. The pier commences nearly under the ſmall town of Howth, and extends towards Ireland's eye. The *point* of Howth is in N. lat. 53° 21′. W. long. 6° 3′.

Howth, a ſmall poſt-town of the county of Dublin, province of Leinſter, Ireland, on the northern ſide of the peninſula noticed in the laſt article. It is ſeven miles from Dublin.

HOXTER, a town of Weſtphalia, belonging to the abbey of Corvey, three miles N.W. of it, but given to the king of Pruſſia in 1802.

HOY, one of the larger Orkney iſlands, about 11 miles long and more than three broad, ſeparated from Pomona by a channel about a mile and a half wide. Round the coaſt are ſeveral bays, in which there is good fiſhing. The principal places are Hoy and Southwalls. N. lat. 58° 43′. W. long. 3° 7′.

Hoy, a ſmall veſſel or bark, uſually rigged like a ſloop, and employed for carrying paſſengers and luggage from one place to another, particularly on the ſea-coaſt. In Holland the hoy has two maſts; in England it has but one, when the main-ſail is ſometimes extended by a boom, and ſometimes without it.

Hoy *Head*, in *Geography*, a cape on the W. coaſt of the iſland of Hoy. N. lat. 58° 48′. W. long. 3° 12′.

HOYA, in *Botany*, named by Mr. Brown in honour of Mr. Thomas Hoy, F.L.S. an experienced botaniſt, and able cultivator. Brown Tr. of the Wernerian Society, v. 1. 26. Aſclep. 15. Prodr. Nov. Holl. v. 1. 459.—Claſs and order, *Pentandria Digynia*. Nat. Ord. *Contortæ*, Linn. *Apocineæ*, Juſſ.

Eſſ. Ch. Corolla wheel-ſhaped, five-cleft. Crown of the ſtamens in five depreſſed fleſhy leaves, whoſe inner angle extends into a tooth over each anther. Anthers terminated by a membrane; maſſes of pollen attached by their baſe, converging, compreſſed. Stigma pointleſs. Follicles ſmooth. Seeds comoſe.

A genus of twining or decumbent ſhrubs, with oppoſite leaves, and many-flowered umbels ſtanding between the foot-ſtalks. Two ſpecies only are defined by Mr. Brown, though he ſuſpects the firſt of them may prove, when properly examined, to comprehend ſeveral hitherto confounded.

1. H. *carnoſa*. (Aſclepias carnoſa; Linn. Suppl. 170. Willd. Sp. Pl. v. 1. 1264. Sims in Curt. Mag. t. 788. Sm. Exot. Bot. v. 2 21. t. 70. Stapelia chinenſis; Lour. Cochinch. 205.)—Leaves elliptic-oblong, fleſhy. Corolla downy. Leaflets of the crown furrowed underneath.—Native of various parts of Aſia, as well as of New Holland, within the tropics. The late Hon. Mrs. Barrington received the living plant from the ſtraits of Sunda, and it flowered in her ſtove for ſeveral ſucceſſive ſeaſons, from May to July. The whole ſhrub is ſucculent and ſmooth. *Stem* climbing, round, downy above. *Leaves* two or three inches long, ſlightly revolute, pale beneath, on thick ſtalks. *Flowers* extremely beautiful and ſingular, in large globoſe umbels, ſmelling like a mixture of honey and the Peruvian Heliotrope. They are bluſh-coloured, with a purple centre; their corolla downy; the ſtar-like crown ſmooth and poliſhed, like porcelain.

2. H *viridiflora*. (Aſclepias volubilis; Linn. Suppl. 170. Watta-kaka-codi; Rheede Malab. v. 9. 25. t. 15.)—Leaves ovate, pointed, membranous, ſmooth, as well as the corolla. Crown without furrows. *Brown*. Native of woods in Ceylon. *Koenig*. Smooth in all its parts. *Leaves* ovate or heart-ſhaped. *Flowers* green, without ſcent.

Hoya, in *Geography*, a principality of Germany, bounded on the N. by the county of Delmenhorſt, the territory of Bremen, and the Weſer, on the E. by the principalities of Luneberg and Calenberg, on the ſouth by the principality of Minden, and on the W. by the county of Diepholz; about 32 miles long and 29 broad. In this diſtrict the heaths are large and the ſoil is ſandy; nevertheleſs it contains ſome good paſtures and arable lands, producing wheat, rye, barley, oats, flax, and buck-wheat. On the ſides of the rivers are good meadows. The chief rivers are the Weſer and the Aller. The inhabitants are partly employed in agriculture and breeding of cattle, and rearing of bees, and partly in manufacturing linen, woollen, ſtockings, &c. Moſt of the peaſants are bondſmen. The country comprehends 54 pariſhes, in which Lutheraniſm is profeſſed. Hoya was annexed to the dominions of the elector of Hanover in 1705; a ſmall part excepted, which belonged to Heſſe-Caſſel. It contains 17 ſmall towns, beſides the capital of the ſame name, ſituated on the Weſer. N. lat. 52° 51′. E. long. 9° 12′.

Hoya, *La*, a town of Mexico, in the province of New Biſcay; 90 miles N.W. of Parral.

HOYACHU, in *Botany*, the name given by the Chineſe to the acacia tree. They make great uſe of this tree in arts and medicine. They have a way of ſtriking a fine yellow upon paper with its flowers; and they give the ſeeds in ſeveral diſeaſes, in ſome of which, as in the dyſentery and hæmorrhages, they are of great ſervice. But, beſide theſe, they make an odd medicine of them, which they take with great readineſs for purpoſes it can never anſwer. They pick out the ſeeds carefully from the pods, as ſoon as ripe; they put theſe into a flat veſſel, and cover them with ox's gall; this is to be ſet for a hundred days to dry, in a place where the ſun does not come; after this, one of theſe ſeeds is to be ſwallowed every day before the firſt meal; and, by continuing this a proper time, they ſay the eye-ſight, if loſt, is reſtored, and their gray hairs become black. Obſerv. ſur les Coûtumes de l'Aſie, p. 240.

HOYER, in *Geography*, a town of Denmark, in the duchy of Sleſwick, with a harbour for ſmall veſſels, ſituated on the coaſt of the North ſea, celebrated for its oyſter fiſhery; 6 miles W. of Tondern.

HOYERSWERDA, a town of Luſatia, on the river Elſten; 34 miles N.N.E. of Dreſden. N. lat. 51° 26′. E. long. 14° 16′.

HOYLAND, a town of Norway, in the dioceſe of Drontheim; 92 miles N.N.E. of Drontheim.

HOYLE Lough, one of the many large lakes in the county of Weſtmeath, province of Leinſter, Ireland, and remarkable for the circumſtance of two rivers flowing in oppoſite directions from it. This lake is about 3 miles N. from Mullingar.

HOZA, a town of Lithuania, in the palatinate of Troki; 8 miles N. of Grodno.

HOZARDARA, a mountain of Perſia, in the province of Irak; 21 miles S. of Iſpahan.

HOZIER, Peter d', *Seigneur* de la Garde, in Provence, a gentleman diſtinguiſhed by his genealogical and hiſtorical reſearches, was born at Marſeilles in 1592. He received a good education, and then entered into the army under the count de Crequi, the genealogy of whoſe family he drew up. His ſucceſs in this attempt cauſed him to be employed by ſeveral other noble families in a ſimilar ſervice. To favour his purſuits, he obtained, in 1620, a place among the gentlemen of the king's houſhold. He was raiſed to other poſts of honour, and in 1628 the order of St. Michael was conferred on him by Lewis XIII. He was, immediately after this, penſioned by the court, expreſsly for the purpoſe of affording him leiſure for his curious reſearches concerning the illuſtrious families of the kingdom, of which, by his long labours, he had acquired a particular knowledge. In 1642, he was made maitre-d'hôtel to his majeſty, and in 1654 was raiſed to the dignity of counſellor of ſtate. He died at Paris in 1660. He was author of "A Hiſtory of Britanny," in folio, and a number of genealogies, ſome of which were printed, and others left in MS. His private character was highly eſtimable; and ſo good was his memory, that he was able to anſwer at once any queſtion concerning arms, contracts, affinities, dates, &c. relative to all the families which had been the ſubjects of his enquiries, ſo that it was ſaid jokingly, "that he muſt needs have been preſent at all the marriages and baptiſms in the univerſe." He left a ſon Charles-Renè d', who ſucceeded him in the office of judge of arms, and was honoured by the duke of Savoy with the knighthood of St. Maurice. He died at Paris in 1732, and had been diſtinguiſhed by his knowledge of heraldry. He had written ſeveral works by order of Lewis XIV., particularly "Le Nobiliaire de Champagne." The nephew of this gentleman, Lewis Peter d'Hozier, was alſo his ſucceſſor in office: he died in 1767. During the period of his adminiſtration appeared "L'Armorial ou Regiſtres de la Nobleſſe de France," in ten vols., folio. Moreri.

HOZING *of* Dogs, the cutting out the balls of their feet. See Expeditation.

HOZOW, in *Geography*, a town of Poland, in the palatinate of Kiev; 30 miles S.W. of Bialacerkiev.

HRADEK, a town of Bohemia, in the circle of Konigingratz; 12 miles S.E. of Konigingratz.

HRADISCH, or Hradista, a town of Moravia, capital of a circle of the ſame name, ſeated on an iſland in the river Moraw, famous for its excellent wine and fruit; 30 miles S. of Olmutz. N. lat. 49° 5'. E. long. 17° 24'.

HRADITZ, a town of Bohemia, in the circle of Rakonitz; 15 miles S.W. of Rakonitz.

HRASGRAD, a town of European Turkey, in Bulgaria; 32 miles S. of Ruſcek.

HREBNIA, a town of Lithuania, in the palatinate of Minſk; 16 miles S.S.E. of Minſk.

HRESK, a town of Lithuania, in the palatinate of Novogrodek; 10 miles N.N.E. of Sluck.

HROZOW, a town of Lithuania, in the palatinate of Novogrodek; 18 miles N. of Sluck.

HUA. See Faifo.

HUACRE-CHUCO, a town of Peru, in the audience of Lima, and juriſdiction of Guamalies.

HUAHEINE, or Huahene, one of the Society iſlands, in the South Pacific ocean, ſituated in S. lat. 16° 43', W. long. 150° 52', firſt diſcovered by Cook in 1769, and viſited again in 1777, when he left Omai, after his viſit to England, in poſſeſſion of a houſe and land, which he took care to provide for him. This iſland is diſtant from Otaheite about 31 leagues, in the direction of N. 58° W., and is about ſeven leagues in compaſs. Its ſurface is hilly and ununeven, and it has a ſafe and commodious harbour, called by the natives "Owalle," or "Owharre," lying on the W. ſide, under the northernmoſt high land, and within the north end of the reef, which paſſes along that ſide of the iſland. This harbour may be entered by two inlets or openings through the reef, about 1½ mile diſtant from each other: the ſouthernmoſt being the wideſt, and having on the ſouth ſide of it a very ſmall ſandy iſland. The productions of this iſland are much the ſame with thoſe of Otaheite, but about a month forwarder. Of the cocoa-nuts the inhabitants make a food which they called "Poe," by mixing them with yams; they ſcrape both fine, and having incorporated the powder, they put it into a wooden trough, with a number of hot ſtones, by which they make a kind of oily haſty-pudding, which the Engliſh ſailors liked very well, eſpecially when fried. The inhabitants are nearly the ſame with thoſe of Otaheite, with regard to perſon, dreſs, language, and other circumſtances pertaining to their diſpoſition and character. They are, however, of a larger ſize, and of a ſtouter ſtructure. Mr. (ſir Joſeph) Banks meaſured one of theſe men, and found him to be ſix feet three inches and a half high; but they are invincibly lazy. The women were fairer than thoſe of Otaheite, and in general more handſome. Perſons of both ſexes ſeemed to be leſs timid and leſs curious. Although they were not ſtrictly honeſt, yet it is acknowledged, to their honour, that when they underſtood that one of their number had been detected in the act of ſtealing, they manifeſted ſtrong ſigns of diſapprobation, and preſcribed a good beating for the thief, which was immediately adminiſtered. In this iſland they obſerved a kind of cheſt or ark, the lid of which was nicely ſewed on, and thatched very neatly with palm-nut leaves, it was fixed upon two poles, and ſupported on little arches of wood neatly carved; the poles ſerved to remove it from one place to another. In one part of it was a ſquare hole, in the middle of which was a ring, touching the ſides, and leaving the angles open, ſo as to form a round hole within a ſquare one. See Ark.

HUALE, a town of Arabia, in the province of Hadſjar, on the W. coaſt of the Perſian gulf. N. lat. 25° 49'. E. long. 50°.

HVALSOE, a ſmall iſland on the North ſea, near the coaſt of Norway. N. lat. 69° 40'.

HUANACO, in *Zoology*, a Peruvian animal of the camel tribe. See Camelus *Huanacus*.

HUARTE, John, in *Biography*, a native of French Navarre, who was diſtinguiſhed in the ſeventeenth century by a Spaniſh work of great merit, entitled, "A Trial of the Wits, or a Treatiſe on the different Kinds of Genius among Men, with Rules and Directions, ſhewing to what Kind of Study any Perſon is beſt adapted." The book has been tranſlated into Engliſh. Moreri.

HUBAIAN, in *Geography*, a town of Perſia, in the province of Farſiſtan; 50 miles E. of Baiza.

HUBALD, Hucbald, or Hugbald, in *Biography*, a monk of St. Amand, in Flanders, who preceded Guido more than one hundred years, was contemporary with Remi, and author of a treatiſe on muſic, which is ſtill ſubſiſting in the king of France's library, under the title of "Enchiridion Muſicæ," No. 7202, tranſcribed in the eleventh century. In this work there is a kind of gammut, or expedient for delineating the ſeveral ſounds of the ſcale, in a way wholly different from his predeceſſors; but the method of Guido not only ſuperſeded this, but, by degrees, effaced the knowledge and remembrance of every other that had been adopted in the different countries and convents of Europe. However, the aukward attempts at ſinging in conſonance, which appear in this tract, are curious, and clearly prove that Guido neither invented, nor, rude as it was before his time, much contributed to the improvement of this art.

Hubald places the whole force of his *diaphonics*, or harmony, upon fourths and fifths.

The good monk ſays, if to theſe two parts two more are added in the octave, the harmony will be complete: and then writes, after his manner, the ſame fragment of melody over again, with a very ſmall change at the end in the accompaniment, which he calls *organum*; which ſee. It is eaſy for a profeſſed muſician to divine what a ſtrange effect ſuch a combination of ſounds would have. At length, however, growing ſtill more daring in his experiments, in the eighteenth chapter the queſtion is, "How much higher the principal melody may go than the *organum*," and the ingenious monk determines the point by allowing that while one voice remains in the ſame tone, the other may wander about at its pleaſure. The ſucceſſion of four 3ds in the next example, renders it more like muſic of this world, in point of harmony, than any of the reſt. And, indeed, a very few alterations in the under part would make the whole fragment ſupportable to modern ears.

Hubald, the reſpectable author of theſe curious ſpecimens of crude harmony, was not only a muſician but a poet; and an idea may be formed of his patience and perſeverance, if not of his genius, from a circumſtance related by Sigebert, the author of his life, by which it appears that he vanquiſhed a much greater difficulty in poetry than the lippogrammiſts of antiquity ever attempted: for they only excommunicated a ſingle letter of the alphabet from a whole poem: but this determined monk compoſed three hundred verſes in praiſe of *baldneſs*, which he addreſſed to the emperor Charles the Bald, and in which he obliged the letter C to take the lead in every word, as the initial of his patron's name and infirmity, as thus:

> "Carmina Clariſonæ Calvis Cantate Camœnæ."

Theſe examples will ſufficiently indicate the infant ſtate of counterpoint previous to the time of Guido, and enable the reader to judge whether it was much improved by his diſcoveries.

Hubald died in 930, at the age of ninety. See COUNTERPOINT.

HUBARA, or HOUBARA *of Buffon*, in *Ornithology*, the ruffed buſtard of Latham. See OTIS.

HUBARLIK, in *Geography*, a town of Pruſſian Lithuania; 25 miles E. of Bialacerkiev.

HUBBARDSTON, a townſhip of America, in Worceſter county, Maſſachuſetts, incorporated in 1767; containing 1113 inhabitants; 60 miles W. of Boſton.

HUBBER, a ſmall iſland in the Baltic, between the iſland of Uſedom and the continent. N. lat. 54° 38'. E. long. 13° 40'.

HUBBERTON, a townſhip in Rutland county, Vermont, containing 642 inhabitants; 50 miles N. of Bennington.

HUBELI, a town of Hindooſtan, in the country of Sanore; 20 miles N.W. of Sanore. N. lat. 25° 53'. E. long. 75° 24'.

HUBER, JOHN-JAMES, in *Biography*, a celebrated anatomiſt, was born at Baſle in 1707. He was a pupil of the great Haller at Berne in 1730; after which he ſtudied at Straſburgh, and in 1733 took the degree of M.D. at his native place. He viſited Paris in 1735, and in the ſame year was appointed phyſician to the court of Baden Dourlach. At the requeſt of his preceptor, Haller, who had removed to Göttingen he examined the Graubund mountains in Switzerland, and tranſmitted to him his collection of plants found in that diſtrict, previous to the publication of Haller's work on the botany of Switzerland. The author acknowledged the ſervices of Huber in his preface, and invited him to Göttingen, in 1738, to be diſſector. He ſpeedily roſe to conſiderable reputation, being made extraordinary profeſſor of anatomy in that city in 1739; profeſſor in the Caroline college at Caſſel, with the rank of court-phyſician, in 1742; and counſellor of ſtate and body-phyſician to the prince, in 1748; which office he continued to fill during thirty years, and died in 1778. He had the honour of being elected, without his knowledge, into the moſt celebrated of the learned ſocieties of Europe. The chief objects of his reſearch were the ſtructure and ramifications of the ſpinal marrow, and the nerves originating from it; the ſuppoſed influence which the imagination of the mother has over the child; and the cauſe of miſcarriages. His principal works are entitled, "Commentatio de Medulla Spinali, ſpeciatim de Nervis ab ea provenientibus," cum icon. Goett. 1741, 4to. "Commentatio de Vaginæ Uteri ſtructura rugoſa, necnon de Hymene," 1742, 4to. He publiſhed a letter in the Philoſ. Tranſactions, vol. 46. "De cadavere aperto in quo non exiſtit veſica fellea, et de Sterno gibboſo." Gen. Biog.

HUBERT, MATTHEW, was born of humble parents, at Chatillon, on the Maine, in the year 1640. He was educated for the church, and was admitted into holy orders as ſoon as he had attained the proper age. His eloquence as a preacher cauſed him to be noticed, and followed by vaſt crowds. His popularity did not produce in his mind any ill effects: he was diſtinguiſhed for piety, humility, and a general kindneſs and ſuavity of manners. He was not aſhamed, at the higheſt pitch of his popularity, of his low origin, or of the obligations he had been under to his friends. Meeting once, in company, with a perſon of diſtinction, who obſerved to him that he recognized in Hubert an old fellow-ſtudent; he replied, with emotions of pure and unfeigned gratitude, "That is a circumſtance which I can never forget, for you had the goodneſs not only to furniſh me with books, but to beſtow on me a part of your clothes." He died in 1717 at the age of 77. Six volumes of his ſermons were publiſhed by father Monteuil in 1725, which were, at one time, as much read in the cloſet, as they had been admired from the pulpit. Moreri.

HUBERT, *St.*, anciently *Andainum*, or *Andagium*, in *Geography*, an ancient town of France, in the department of the Forêts, ſituated in the foreſt of Ardennes, on the ſmall river Homme. It took its name from an abbey of Benedictines, where the remains of St. Hubert were depoſited in 825, in compliance with the decree of a council, held at Aix-la-Chapelle; 25 miles N.W. of Arlon. N. lat. 50° 1'. E. long. 5° 27'.

HUBERT, *St.*, *Order of*, an order of knighthood, inſtituted, in the duchy of Juliers, by Gerard V., duke of Juliers, in memory of a victory gained by him over Arnold of Egmont, on St. Hubert's day, in the year 1447. In 1709 it was revived by John-William, elector-palatine of the Rhine. The reigning elector-palatine is grand maſter. It was alſo uſed at Wurtemberg, where the reigning duke of Wurtemberg was grand maſter. The collar of the order is a chain of gold, to which is pendent a croſs pattée, ſet with jewels, from the angles of which iſſue rays of gold; on the centre is a medallion of gold enamelled, with a portrait of St. Hubert, kneeling before a crucifix, placed between the horns of a ſtag ſtanding in a wood, all proper. The knights alſo wear, on the left ſide of their coat, a circle ſurrounded with rays, embroidered in gold; and in the middle of it, on a red ground, ſome German words, ſignifying "Keep firm in the Faith." At all times, except feſtival days, they wear the croſs tied to a red ribbon, which paſſes ſcarf-wiſe from the left ſhoulder to the right thigh.

HUBKOW, in *Geography*, a town of Poland, in Volhynia; 64 miles N.W. of Zytomiers.

HUBNER, John, in *Biography*, a German hiſtorian and geographer, born in 1668, was celebrated likewiſe as an inſtructor of youth, and became rector of the ſchool of Hamburgh. He died in 1732, and is known to poſterity by ſeveral uſeful compendiums in hiſtory, geography, &c., which have been tranſlated into ſeveral languages. His chief works are, "Bibliotheca Hiſtorica Hamburgenſis;" "Muſæum Geographicum." Moreri.

HUBS, in *Rural Economy*, a term applied in ſome diſtricts to the names of wheels of certain kinds.

HUCAMYBUFF, in *Agriculture*, a term applied in ſome places to ſuch coarſe tufty graſs as remains after eating down the more luxuriant paſture lands by live ſtock, and which is afterwards mown and made into rough ſort of hay. This ſort of work is in other diſtricts often denominated *hobbing*. It is often pronounced *hogamybuff* by the farmers.

HU-CHOUI-LO-TCHUAN, in *Geography*, a town of Corea; 600 miles E.N.E. of Peking. N. lat. 42° 27′. E. long. 128° 51′.

HUCH, or Hucho, in *Ichthyology*. See Salmo *Hucho*.

HUCKABACK, in *Commerce*, is a kind of linen, on which the figures are raiſed.

HUCKESWAGEN, in *Geography*, a town of the duchy of Berg; 24 miles E.S.E. of Duſſeldorp.

HUCKLE Bone, the hip-bone. See Coxæ *Oſſa*.

HUCQUELIERS, in *Geography*, a town of France, in the department of the ſtraits of Calais, and chief place of a canton, in the diſtrict of Montreuil; nine miles N.E. of it. The place contains 710, and the canton 11,967 inhabitants, on a territory of 242½ kiliometres, in 24 communes.

HUCKSTER, one that ſells proviſions or ſmall wares by retail.

HUD Sheaf, in *Agriculture*, the name by which the ſheaf that covers the top of the hattock is frequently known. See Hudder.

HUDDE, John, in *Biography*, a burgomaſter of Amſterdam, who flouriſhed in the ſeventeenth century, and died in 1704, was eminent in his character of a magiſtrate, and poſſeſſed a commanding genius for mathematical ſtudies. Much was expected from his talents as a man of ſcience, but he was diverted from the purſuit by ſtate affairs. He was nevertheleſs the author of ſeveral excellent little pieces "On the Reduction of Equations;" "De Maximis et Minimis," and his "Commentary on the Geometry of Deſcartes," &c. Moreri.

HUDDELGUR, in *Geography*, a town of Hindooſtan, in Oriſſa; 15 miles N. of Boad.

HUDDER, in *Agriculture*, a name given, in many counties, to the ſheaf by which the hattock is covered and protected at top from the effects of rain, &c.

HUDDERSFIELD, or Huthersfield, in *Geography*, a market-town and pariſh in the Weſt Riding of Yorkſhire, England, is a large improving place, noted for being the centre of a manufacturing diſtrict. The pariſh conſiſts of the following hamlets, or townſhips; Quarmby with Lindley, Longwood, Golcarr, and part of Scamandan, Slaughthwaite, and Marſden, all of which are chiefly occupied by perſons engaged in different branches of the woollen manufacture. The goods made here conſiſt chiefly of narrow plain cloths, both fine and coarſe, with ſome broad cloths, elaſtics, beaverettes, kerſeymeres, &c. For the diſplay and ſale of theſe, a commodious building, of a circular form, called the Cloth-hall, was erected here, in 1765, by ſir John Ramſden, who poſſeſſes nearly the whole of the land on which the town is built, and alſo a great many houſes. The building conſiſts of two ſtories, and is divided into two courts. All the windows open to theſe areas. A market is held here every Tueſday, which commences early in the morning, and is cloſed at half paſt twelve o'clock at noon. The reſort of manufacturers, wool-ſtaplers, &c. to this mart, is very numerous, many of whom come from Leeds, Halifax, Wakefield, and other places in the vicinity. Beſides the market here are three annual fairs. The police of the town is under a conſtable and his deputy, who are annually choſen, or rather appointed, by the Ramſden family at their court-leet held at Almonſbury. Huddersfield is 14 miles weſt of Wakefield, and 188 from London. In the year 1800 it contained 1398 houſes, and 7268 inhabitants. In the vicinity of the town are the following ſeats: Whitley-hall, belonging to the Beaumont family; Kirklees-hall, the property of ſir George Armytage, bart.; Fixly-hall, the ſeat of Thomas Thornhill, eſq.; and Millsbridge, belonging to W. Radcliffe, eſq. Weſt of Almonſbury is an eminence called Caſtle-hill, on the ſummit of which is an ancient entrenchment, ſuppoſed by ſome topographers to have been the Roman Cambodunum; but Mr. Watſon, in his Hiſtory of Halifax, attributes it to the Saxons, and thinks, that Slack, to the north of Huddersfield, was the ſcite of that ſtation. The Roman road from Mancheſter, Mancunium, to York, Eboracum, paſſed near Almonſbury, and the name, and contiguity to the Roman road, are againſt Mr. Watſon's conjectures.

Huddersfield *Canal*, is an inland navigation in Yorkſhire and Lancaſhire, begun in purſuance of acts of parliamen paſſed in the years 1793 and 1800, of which we gave an account in our article Canal, and have here only to add, that the locks are 72 feet long and nine feet wide, and generally riſe about ten feet: there is a tunnel of about 200 yards long, S.E. of Scout Mill, near Aſhton-under-line: an aqueduct of caſt-iron, 50 or 60 feet long, having a ſtone bridge of one arch by its ſide for the towing-path: theſe were erected in 1801 and 1802. At Wright's Mill the canal croſſes the Tame, to its weſtern ſide, juſt after it has entered Yorkſhire, on a two-arch ſtone aqueduct. The canal has been now a long time completed, and is uſed, from its weſtern end, about eight miles to Woolroyd, and from its eaſtern end to Diglee in Sadleworth; and at this time, the great tunnel 3¼ miles long and 250 yards beneath Pule hill on the grand ridge, is, we believe, very nearly finiſhed. The bridges on this canal have been imprudently conſtructed, many of them, even under the public roads, without towing-paths under them, and muſt be taken down and widened. On the 29th of November, 1810, a ſecond accident happened to the reſervoirs of this canal, when the Driggle reſervoir on Stanedge, containing 28 acres, burſt, and inundated the vallies below.

HUD-SJERA, a town of Arabia Felix, in the province of Yemen; 36 miles W.N.W. of Sana.

HUDSON, HENRY, in *Biography*, a diſtinguiſhed naval commander, of whom nothing is known till about the year 1607. At this period he was ſent out on an expedition, by ſome London merchants, in a ſmall veſſel for exploring a north-eaſt paſſage to Japan and China. This daring adventurer ſet ſail on the 1ſt of May with a crew of only ten men and a boy, beſides himſelf, and proceeded beyond the 80th degree of latitude in the North ſea, when, being ſtopped by the ice, they returned and arrived at England in the following September. In a ſecond voyage he landed at Nova Zembla, but proceeded no farther eaſt, and returned in Auguſt. In 1609 he was fitted out for a third voyage by ſome merchants of the Dutch-Eaſt-India-company, and after another unſucceſsful attempt to the eaſtward he ſteered for the American coaſt, and went down as far as Cheſapeak-bay. His crew, diſſatisfied with their want of ſucceſs, prevented him from endeavouring to find a weſterly paſſage through Davis's ſtrait, and he returned in November. In a fourth voyage he came, June 4th 1610, within ſight of Greenland, and proceeding weſtward, he reached, in ſixty degrees of latitude, the mouth of the ſtrait bearing his name. Through this he advanced along the coaſt of Labrador, to which he gave the name of Nova Britannia, till it iſſued in the vaſt bay which perpetuates the memory of Hudſon. At firſt he thought he had diſcovered the long ſought paſſage to the north-weſt, but experience taught him that it was only a bay, and he reſolved to winter in it. They found proviſions during the winter ſeaſon, but at the approach of ſpring they were reduced to the utmoſt difficulties. The commander forgot his own ſufferings in the hope of making new diſcoveries, but his crew, not having the ſame motives for patience and perſeverance, began to mutiny, and he threatened to ſet them on ſhore. They, on the other hand, willing to anticipate the execution of his purpoſe, ſeized Mr. Hudſon, his ſon, and ſeven others, who were moſt attached to him, and putting them on ſhore at the weſt end of the ſtraits, left them to periſh by the waves, or other hardſhips. Such was the end of Henry Hudſon, a man illuſtrious in the annals of naval diſcovery.

HUDSON, JOHN, was born in 1662 at Widehope, near Cockermouth, where he received the early part of his education, and at the age of fourteen he was admitted into Queen's college, Oxford. In 1684 he took his degree of M.A. and then removed to Univerſity college, of which, in two years after, he was choſen fellow. In 1701 he was elected head-keeper of the Bodleian library, againſt the competition of the learned Wallis, afterwards Arabic profeſſor. He now took his degree of D.D., and in 1712 he was made principal of St. Mary-hall. He employed the advantages of his ſituation in editing ſeveral of the moſt valuable authors of antiquity. Of theſe the following may be mentioned, "Velleius Paterculus;" "Thucydides;" "Geographiæ Veteris Scriptores Græci Minores;" "Dionyſius Halicarnaſſus;" and "Longinus." The editions of Dr. Hudſon are valued for their elegance and correctneſs. He never poſſeſſed any eccleſiaſtical preferment, and died at St. Mary-hall in Nov. 1719. Biog. Brit.

HUDSON, THOMAS, a portrait painter, who enjoyed for many years the principal repute and practice of the profeſſion in London, after Richardſon, under whom he ſtudied, and Jervas were gone. Yet, though confeſſedly the beſt of his time, it is but ſmall praiſe to ſay ſo of him; he will be longer remembered as the maſter of an illuſtrious pupil who ſoon eclipſed him, when he began to appear before the public, and who yet remains unrivalled, ſir Joſhua Reynolds.

Hudſon certainly improved upon the taſte of the artiſts who immediately preceded him, and who had fallen in ſucceſſion from Kneller, into the utmoſt imbecility of practice as well as feeling in the art. For a while his ſucceſs was interrupted by Vanloo and Liotard, but the Engliſh gentry in general were faithful to their compatriot, and were content with his honeſt ſimilitudes, with fair tied wigs, velvet coats and white ſattin waiſtcoats, duly gilt and embroidered.

When Reynolds began to practiſe and gain fame, Hudſon was advanced in years, and having acquired an independency of fortune, he retired and left the field to his youthful rival, after having finiſhed his moſt capital performance, the family piece of Charles duke of Marlborough.

He went to reſide at a beautiful villa which he built at Twickenham, where he died in 1779, at the age of 78. He was twice married, firſt to the daughter of his maſter Richardſon, and afterwards, towards the cloſe of his life, to a Mrs. Fiennes, a gentlewoman of good fortune, to whom he bequeathed his villa, with an excellent collection of cabinet pictures and drawings by the old maſters.

HUDSON, WILLIAM, one of the earlieſt Linnæan botaniſts in England, was born in Weſtmoreland, about the year 1730. He ſerved his apprenticeſhip to an apothecary in Panton ſtreet, Haymarket, to whoſe buſineſs he ſucceeded, and with whoſe widow and daughters he continued to reſide. His acquaintance with the amiable and learned Mr. Benjamin Stillingfleet, greatly advanced his taſte and information in natural hiſtory. This gentleman directed his attention to the writings of Linnæus, and gave his mind that correct and ſcientific turn, which cauſed him to take the lead as a claſſical Engliſh botaniſt, and induced him to become the author of the *Flora Anglica*, publiſhed in 1762, in one volume octavo. The plan of this book was, taking Ray's *Synopſis* as a ground-work, to diſpoſe his plants in order, according to the Linnæan ſyſtem and nomenclature, with ſuch additions of new ſpecies, or of new places of growth, as the author or his friends were able to furniſh. The ſynonyms of the moſt valuable authors, ſince the time of Ray or Dillenius, were ſuperadded, as well as deſcriptions of new or rare plants; and even new ſpecific characters, wherever the Engliſh ſpecimens did not well anſwer to the definitions in Linnæus. Some few generic alterations were alſo hazarded; but for the moſt part the Linnæan definitions in this department were relied on. Many ſynonyms alſo were copied from Linnæus or other writers, as appears by errors of the preſs retained in the tranſcribing. Of this too common fault we have had occaſion to take notice on ſome other occaſions, but we by no means intend to aſſert that Mr. Hudſon conſulted none of the authors he quoted. On the contrary, we believe ſuch blind tranſcription was more rarely practiſed by him than by many other writers. The particular places of growth of the rarer ſpecies were given in Ray's manner, in Engliſh, though the reſt of the book was Latin. The elegant preface was written by Mr. Stillingfleet, and probably the conciſe, but not leſs elegant, dedication to the late duke of Northumberland, "*artium, tum utilium, tum elegantiorum, judici et patrono.*"

This publication gave Mr. Hudſon a conſiderable rank as a botaniſt, not only in his own country, but on the continent, and derived no ſmall advantage from a compariſon with Dr. Hill's attempt of the ſame kind. He had indeed previouſly, in the courſe of his medical practice, formed ſome valuable connexions, which were cemented by botanical taſte, and he found leiſure, from time to time, to viſit ſeveral friends in the courſe of his botanical expeditions, eſpecially in Devonſhire. His correſpondence with Linnæus, Haller, and others, as well as amongſt his countrymen, was frequent and very uſeful to him in the courſe of his ſtudies, which were extended not only to botany in all its cryptogamic *minutiæ*, but, with great ardour alſo, to inſects, ſhells, and other branches of Britiſh zoology. He was elected a fellow of the Royal Society Nov. 5th, and admitted Nov. 12th 1761. He took the lead very much in the affairs of the Apothecaries' company, and was their botanical demonſtrator in the Chelſea garden for many years.

Mr. Hudſon, having never married, continued to reſide in Panton ſtreet with the laſt-ſurviving daughter of his friend and maſter, an amiable and valuable woman, married to Mr. Hole; nor did he remit in his attention to ſcience or buſineſs. There the writer of the preſent narrative often viſited him, and experienced his kind, though ſomewhat reſerved, communications and favour. His *Flora* being grown very ſcarce, inſomuch that a copy had been ſold for near twenty times its original price, he publiſhed, in 1778, a new edition, in two volumes, with many additions, and various alterations. Some of the latter, reſpecting the ſpecies or varieties of graſſes, have been thought leſs advantageous than the reſt. On the whole, however, this edition was worthy of its author, and of the advanced ſtate of the ſcience. The *Flora Scotica* of his contemporary Mr. Lightfoot, a man of more popular manners and ſtyle, will not bear a compariſon with it for authenticity or originality, however pleaſing and eſtimable for the graces it beſtows on even the drieſt parts of the ſcience.

The merits of the ſubject of this article were of a higher order. In his ſocial intercourſe he courted not the many, but was warmly attached to a few. His moral character was without a ſtain, and his mind was eſtabliſhed on the ſoundeſt principles. His tranquillity received a dreadful ſhock in the winter of 1783, when his houſe, and the greater part of his literary treaſures, were deſtroyed by a ſudden fire, cauſed, as it was believed, by the villany of a confidential ſervant, who knew of a conſiderable ſum in money which his maſter had received a day or two before. No traces of the gold were found amongſt the ruins. The ſervant, after a treacherous application for aſſiſtance, on the pretence of being totally deſtitute, diſappeared. The property had, by accident, been for a ſhort time only, uninſured, and the loſs was therefore conſiderable, in a pecuniary point of view, to a man whoſe reſources were not extenſive. He bore the whole like a philoſopher and a Chriſtian, giving up his practice, and retiring, with Mr. and Mrs. Hole, to a more economical reſidence in Jermyn ſtreet, where he died May 23d 1793, Mrs. Hole ſurviving him but a few months.

The accident of the fire entirely defeated a project Mr. Hudſon had for many years kept in view, of publiſhing a *Fauna Britannica*, on the plan of his *Flora*, for which he had long been collecting materials. His taſte for his favourite purſuit remained to the laſt, unimpaired and unembittered by theſe diſappointments. He became a fellow of the Linnæan Society early in 1791, liberally contributing to its infant funds, and attending the meetings as often as his now declining health would allow. His lungs had for many years been in an ulcerated ſtate, and he laboured under frequent impoſthumes in that part; but a ſucceſſion of paralytic attacks appear to have been the more immediate cauſe of his diſſolution. His reſigned and placid exit was conformable to the tenour of his life. His remains were interred at the adjoining church of St. James's. "May the writer of this leave no more errors behind him, as an author, or as a man!" S.

HUDSON *City*, in *Geography*, a port of entry and poſt-town of America, in the county of Columbia, and ſtate of New York, on the E. ſide of Hudſon river; 132 miles N. of New York city. This town was begun in 1783, on a ſpot, acceſſible by veſſels of any ſize; and was laid out in ſquares, formed by ſpacious ſtreets, croſſing one another at right angles. Each ſquare contains 30 lots, and each lot is 50 feet in front and 120 feet in depth. From the period of its commencement, the increaſe of this town has been wonderfully rapid; in two years 150 dwelling houſes were erected, with ſhops, barns, warehouſes, and other buildings, a covered rope-walk, and one of the beſt diſtilleries in America; and the number of inhabitants collected in this ſhort interval of time amounted to 1500. Since the year 1786, a printing-office has been eſtabliſhed, ſeveral public buildings have been erected, with dwelling-houſes, ſtores, &c. The town is abundantly ſupplied with water, conveyed by pipes to their cellars, from a ſpring at the diſtance of two miles. To the ſouthward is a large bay, and it commands extenſive views from the eminence on which it is ſituated. The river is a mile wide, and forms towards the north a number of creeks and bays. From the S.E. to the S.W. the city is ſkreened by hills, and the diſtant proſpect is terminated by a chain of ſtupendous mountains, called the "Kaat's hill." Here is a bank, called the "bank of Columbia, whoſe capital may not exceed 160,000 dollars, compoſed of 400 ſhares, at 400 dollars each. This city is governed by a mayor, recorder, four aldermen, four aſſiſtants, and other officers. The number of inhabitants in Hudſon townſhip is 3664. N. lat. 42° 14'.

HUDSON, a flouriſhing town in Trumbull county, and ſtate of Ohio, about 35 miles W. of Warren, containing about 200 inhabitants.

HUDSON's *Bay*, an inland ſea, ſo called from the voyager Hudſon, who in 1610 diſcovered the ſtraits which bear his name, and this inland ſea, approaching the Baltic in ſize, which has, however, been denominated Hudſon's bay. Hudſon's ſea may be conſidered as extending from W. long. 70°, to long. 115°, or 45° of longitude, which, allowing the degree only 30 miles, will be 1350 geographical miles in length, and its medial breadth about 350. The entrance of this bay from the ocean, after leaving to the N. cape Farewell and Davis's ſtraits, is between Reſolution iſles on the N., and Button's iſles on the Labrador coaſt, to the S., forming the eaſtern extremity of the ſtraits diſtinguiſhed by the name of the diſcoverer. The ſhores are generally rocky and precipitous; with ſome large beaches; the iſles of Saliſbury, Nottingham, and Digges, are alſo very lofty and naked. The depth of water in the middle of the bay is 140 fathoms. From cape Churchill to the S. end of the bay are regular ſoundings; near the ſhore ſhallow with a muddy or ſandy bottom. To the N. of Churchill, the ſoundings are irregular, the bottom rocky, and in ſome parts the rocks appear above the ſurface at low water. From Mooſe river, or the bottom of the bay, to Cape Churchill, the land is flat, marſhy, and wooded with pines, birch, larch, and willows. From cape Churchill to Wager's water, the coaſts are all high and rocky to the ſea, and deſtitute of wood, except the mouths of Pockerekeſko and Seal rivers. The hills on their back are naked, nor are there any traces of trees for a great diſtance inland. The mouths of all the rivers are filled with ſhoals, except that of Churchill, in which the largeſt ſhips may lie; but 10 miles higher, the channel is obſtructed with ſand-banks; and all the rivers, as far as they have been navigated, abound with rapids and cataracts, from 10 to 60 feet perpendicular. As far inland as the Hudſon-bay Company have ſettlements, which is 600 miles to the W., at a place called "Hudſon Houſe," N. lat. 53°. W. long. 106 27', is flat country. The climate is almoſt always wintry, the hot weather in June, though violent, being of ſhort duration. The ſnows begin to fall in October, and continue to fall at intervals during the winter; the ice on the rivers is eight feet thick. Port wine freezes in a ſolid maſs, and brandy coagulates. The ice begins to diſappear in May, and hot weather commences about the middle of June. Mock ſuns and halos are frequent and brilliant; the night is enlivened with the Aurora Borealis; and the ſtars appear with a firey redneſs. Thunder, though not frequent, is very violent. The ſea does not abound with fiſh, but it furniſhes the common whale, and the beluga or white whale is taken in conſiderable numbers in June, when the rivers on the ſouth have diſcharged their ice. Large ſturgeons are alſo caught near Albany. Shell fiſh are very rare, common muſcles excepted, which are frequent. Multitudes of birds retire to this remote country, as well as to Labrador and Newfoundland, from places moſt remotely ſouth, perhaps from the Antilles; and ſome even of the moſt delicate little ſpecies. Moſt of them, with numbers of aquatic fowls, are ſeen returning ſouthward, with their young broods to more favourable climates. The ſavages partly regulate their months by the appearance of birds. All the grouſe kind, ravens, cinereous crows, titmouſe, and Lapland finch, brave the ſevereſt winter; and ſeveral of the falcons and owls ſeek ſhelter in the woods. The rein deer paſs in vaſt herds towards the N. in October, ſeeking the extreme cold. The male polar bears rove out at ſea, on the floating ice, moſt of the winter, and till June: the females lie concealed in the woods, or beneath the banks of rivers till March, when they come out with their twin cubs, and bend their courſe to the ſea in ſearch of their conſorts. The large tract of territory on the ſouth of this ſea is the property of the Hudſon's Bay company, who derive their chief profits from furs. This ſea has been repeatedly explored for a N.W. paſſage to no purpoſe. Cheſterfield inlet, (ſee CHESTERFIELD,) ſtretches far to the W., and terminates in a magnificent lake of freſh water, communicating with this ſea by a broad river; the adjacent land being level, rich in paſture, and abounding with deer. It is probably believed, that the Hudſon ſea on the N.E. opens into the Arctic ocean, where the perpetual ice preſents an inſurmountable barrier to commercial adventurers. The gulf, or ſea of Davis, may be conſidered as part of the ſea of Hudſon, and probably joins the Arctic ocean.

The regions around Hudſon's bay and that of Labrador have been ſometimes called *New* BRITAIN (which ſee). The parts on the W. of Hudſon's bay have alſo been called New North and South Wales; while that on the E. is ſtyled Eaſt Main. In the S., James's bay ſtretches inland about 300 miles by about 500 in breadth; and the moſt valuable ſettlements are in that vicinity, as Albany fort, Mooſe fort, and Eaſt Main factory. Further to the S. and on the confines of Upper Canada, are Brunſwick houſe, Frederick houſe, and ſome others, belonging, probably, to the N.W. company. In the N., Severn houſe is at the mouth of a large river, which ſeems to flow from the lake of Winnipic. York fort ſtands on Nelſon's river: and ſtill further to the N. is Churchill fort, which ſeems to be the fartheſt ſettlement in that direction. To the W. the Hudſon's Bay company had extended little further than Hudſon's houſe; while the ſuperior ſpirit of the N.W. company, eſtabliſhed in 1784, has nearly approached the Pacific. The boundary between the Hudſon's Bay company and Canada is underſtood to follow the ridge that gives ſource to the rivers flowing N. and S. as far as lake Annipeg, ſo that lat. 49° is ſaid to form the limit. The moſt important rivers in this country are, the Nelſon, or Saſkaſhawin, and the Severn: the comparative courſe of the latter ſcarcely exceeding 400 Britiſh miles, but of great breadth and depth. In the S. the Albany, Mooſe, Abitib, and Harricana, are the moſt conſiderable; but all the rivers are impeded with falls and ſhoals. In the ſea of Hudſon are ſeveral high iſlands. Pennant's Arctic Zoology. Pinkerton's Geog. vol. iii.

HUDSON's *Bay Company*. See COMPANY, and the preceding article.

HUDSON's *Houſe*, a factory belonging to the Hudſon's Bay company in North America, on the W. ſide of the Saſkaſhawin river. N. lat. 53°. W. long. 106° 27′.

HUDSON's *Point*, a cape of the iſland of Antigua, on the S.E. coaſt. N. lat. 17° 12′. W. long. 61° 23′.

HUDSON's *River*, one of the largeſt and fineſt rivers in the United States of America, which riſes in a mountainous country of New York, between the lakes Ontario and Champlain, and after purſuing a ſouth-eaſterly courſe within ſix or eight miles of lake George, then a ſtraight courſe E. and afterwards S. 12 or 15 W., diſcharges itſelf into York bay. The whole length is about 250 miles; from Albany to lake George the courſe is 65 miles, which is navigable only for batteaux, and has two portages, occaſioned by falls, of half a mile each. The paſſage through the highlands, of 16 or 18 miles, affords a wild romantic ſcene. The bed of this river, which is deep and ſmooth to a ſurpriſing diſtance through a hilly, rocky country, and even through ridges of ſome of the higheſt mountains in the United States, muſt have been produced by ſome ſignal convulſion of nature. The tide flows a few miles above Albany, which is 160 miles from New York. The river is navigable for ſloops of 80 tons to Albany, and for ſhips to Hudſon city. About 60 miles above New York the water becomes freſh. This river is ſtored with a variety of fiſh; and it affords ſingular advantages for carrying on the fur-trade with Canada, by means of the lakes: and its conveniences for internal commerce are very great.—Alſo, a river broad but ſhort, emptying itſelf into Cheſapeak bay, in Dorcheſter county, Maryland. Hill's Point, N.E. of it, cloſes the broad mouth of this river.

HUDSON's *Straits*, or *Frobiſher's Miſtaken Strait*, the narrow ſea between the Atlantic ocean and Hudſon's bay, N. of Labrador. See HUDSON's *Bay*.

HUDSON's *Bay Porcupine*, in *Zoology*. See HYSTRIX *Dorſata*.

HUDSONIA, in *Botany*, named by Linnæus in honour of his friend and correſpondent Mr. William Hudſon, author of the *Flora Anglica*.—Linn. Mant. 11. Schreb. 322. Willd. Sp. Pl. v. 2. 858. Mart. Mill. Dict. v. 2. Juſſ. 162. Lamarck. Illuſtr. t. 401.—Claſs and order, *Dodecandria Monogynia*. Nat. Ord. *Ericis affine*, Juſſ. *Hyperica*, Bergius.

Gen. Ch. *Cal.* Perianth inferior, in three deep, lanceolate, obtuſe, rather concave ſegments. *Cor.* Petals five, ſeſſile, ovate-oblong, obtuſe, ſhorter than the calyx. *Stam.* Filaments 15 or 18, capillary, the length of the corolla; anthers roundiſh. *Piſt.* Germen ſuperior, ovate; ſtyle thread-ſhaped, the length of the ſtamens; ſtigma ſimple. *Peric.* Capſule cylindrical, half as long as the calyx, of one cell and three valves. *Seeds* three, rounded on one ſide, angular on the other.

Eſſ. Ch. Petals five. Calyx in three deep parallel ſegments. Stamens fifteen. Capſule ſuperior, of one cell and three valves. Seeds three.

Obſ. The characters are corrected from the deſcription of Bergius, which eſcaped the notice of Schreber; who merely copied the *Mantiſſa*, in which there is ſaid to be no corolla.

J. H.

1. H. *ericoides*. Linn. Mant. 74. Willd. Hort. Berol. v. 1. t. 15. Bergius in Act. Holm. for 1778. 19. t. 1; not 18. t. 2, as in Willdenow. (Ericæformis ſuffrutex virginianus, floribus exiguis, vaſculo ſeminali oblongo trifariam diviſo; Pluk. Mant. 68.)—The only known ſpecies, a native of Virginia and other parts of North America, yet Michaux has it not. We ſaw it alive and in flower at Kew in the ſpring of 1809. The *ſtem* is ſhrubby, procumbent, round, with very numerous, aſcending, compound leafy branches, greatly reſembling a heath. *Leaves* ſcattered, ſmall, needle-like, cloſe-preſſed, ſomewhat imbricated, acute, hairy, eſpecially on the younger ſhoots. *Flowers* lateral, on ſlender, hairy, ſolitary, ſimple ſtalks longer than the leaves. *Calyx* externally downy, internally yellow. *Petals* and *ſtamens* of an uniform lemon-colour, much reſembling ſome ſmall *Hypericum*.

HUE, in *Painting*, ſignifies any degree of ſtrength or vividneſs in a colour, from its greateſt or deepeſt power to the weakeſt intimation of it.

HUE-AND-CRY, in *Law*, derived from the French *huer* and *crier*, which both ſignify *to ſhout*, or *cry aloud*, denotes the purſuit of one who has committed felony, &c. on the highway.

If a party robbed, or any in the company of one murdered or robbed, come to the conſtable of the next town, and require him to raiſe hue-and-cry, or to purſue the offender, deſcribing him, and ſhewing, as near as he can, which way he is gone, the conſtable is forthwith to call for aid from the pariſh to ſeek the felon; and if he is not found there, he is to give the next conſtable warning, till he be apprehended, or at leaſt purſued to the ſea-ſide.

The Normans had a purſuit with a cry after offenders, not unlike this; which they called *clamor de haro*. See Clamor.

Hue is alſo uſed alone, ann. 1 Edw. I. ſtat. 2. In ancient records it is called *huteſium & clamor*, which properly ſignify a purſuit by horn and by voice.

This proceſs of purſuing is mentioned by ſtatute Weſtm. 1. 3 Edw. I. cap. 9. and 4 Edw. I. *de officio coronatoris*. But the principal ſtatute relative to this matter is that of Wincheſter, 13 Edw. I. cap. 1. & 4. which directs, that from thenceforth every county ſhall be ſo well kept, that immediately upon robberies and felonies committed, freſh purſuit ſhall be made from town to town, and from county to county; and the hue-and-cry ſhall be raiſed upon the felons, and they who keep the town ſhall follow with hue-and-cry, with all the town and towns near; and ſo hue-and-cry ſhall be made from town to town, until they be taken and delivered to the ſheriff. And that ſuch hue-and-cry may more effectually be made, the hundred is bound by the ſame ſtatute, cap. 3, to anſwer for all robberies therein committed, unleſs they take the felon, which is the foundation of an action againſt the hundred, in caſe of any loſs by robbery. By ſtat. 27 Eliz. cap. 13. no hue-and-cry is ſufficient, unleſs made with both horſemen and footmen. And by ſtat. 8 Geo. II. cap. 16. the conſtable or like officer refuſing or neglecting to make hue-and-cry, forfeits 5*l.* and the whole vill or diſtrict is ſtill in ſtrictneſs liable to be amerced, according to the law of Alfred, if any felony be committed therein, and the felon eſcape. Hue-and-cry may be raiſed either by precept of a juſtice of the peace, or by a peace-officer, or by any private man that knows of a felony. (2 Hal. P. C. 100—104.) But if a man maliciouſly or wantonly raiſes a hue-and-cry, without cauſe, he ſhall be ſeverely puniſhed as a diſturber of the public peace. 1 Hawk. P. C. 75. Blackſt. Comm. vol. iv. p. 290, &c. See Highwaymen.

In ſupplement to this ancient eſtabliſhment, ſir John Fielding's plan was inſtituted for the diſcovery of offenders, after they have eſcaped the freſh purſuit upon hue-and-cry, by ſending immediate notice to a certain known office in London, from whence are iſſued weekly accounts to every part of the kingdom, deſcribing the offence and the offenders with as much accuracy as the caſe will admit. By theſe means many notorious offenders have been apprehended, and much ſtolen property hath been recovered.

HUELAMO, in *Geography*, a town of Spain, in New Caſtile; 22 miles N.N.E. of Cuença.

HUELBA, or Huelva, a town of Spain, in the province of Seville, ſituated on the coaſt of the Atlantic; three miles W. of Moguer. N. lat. 37° 13′. W. long. 7° 1′.

HUELGOAT, Le, a town of France, in the department of the Finiſterre, and chief place of a canton, in the diſtrict of Chateaulin; nine miles N.W. of Carhaix. The place contains 766, and the canton 9496 inhabitants, on a territory of 305 kiliometres, in ſeven communes.

HUELMA, a town of Spain, in Grenada; 13 miles S.W. of Grenada.

HUERNIA, in *Botany*, ſo called by Mr. R. Brown, "in memory of Juſtus Huernius, one of the earlieſt collectors of Cape plants, and from whoſe drawings the firſt account of *Stapelia* was taken," from which genus the preſent is ſeparated.—Brown. Aſclep. 11.—Claſs and order, *Pentandria Digynia*. Nat. Ord. *Contortæ*, Linn. *Apocineæ*, Juſſ.

Eſſ. Ch. Corolla bell-ſhaped, its limb in ten ſegments, the intermediate ones very ſmall and tooth-like. Column of fructification concealed. Crown of the ſtamens double; the outer in five cloven ſegments; inner of five undivided awl-ſhaped leaves, gibbous at their baſe, alternate with the ſegments of the outer. Anthers ſimple at their ſummit; maſſes of pollen erect, attached by their baſe, cartilaginous and pellucid at one edge. Stigma pointleſs. Follicles nearly cylindrical, ſmooth. Seeds comoſe.

The plants which compoſe this genus have the remarkable fleſhy, angular, and toothed habit of *Stapelia*, and the whole of the third ſection of that genus in Willd. Sp. Pl. v. 1. 1293, (with a ten-toothed corolla,) is thought to belong to *Huernia*. Mr. Brown has however examined only the *campanulata*, Maſſon. Stapel. t. 6; *venuſta*, t. 3; and *guttata*, t. 4. They are all natives of the ſouth of Africa. The flowers of theſe three are all pale yellow, richly dotted with red or dark purple. The *reticulata*, t. 2, which has every appearance of being of the ſame genus, bears a ſplendid crimſon corolla, reticulated with yellow lines.—As far as habit is concerned, we cannot but think this genus artificial, the crown of the ſtamens in *Stapelia*, and its neareſt allies, being ſomewhat liable to aberration of character.

HUERS. See Balkers and *Pilchard* Fishery.

HUERS, the name given to certain fountains in Iceland, which form jets d'eaux of ſcalding water 94 feet high and 30 feet in diameter. They ariſe from cylindric tubes of unknown depth; near the ſurface they expand into apertures of a funnel-ſhape, and the mouths ſpread into a large extent of ſtalactitical matter, formed of ſucceſſive ſcaly concentric undulations. The occurrence of this phenomenon is foretold by noiſes roaring like the cataract of Niagara. Theſe huers are not confined to the land; they alſo riſe in the ſea, and form ſcalding fountains amidſt the waves.

HUESCA, a town of Spain, in the province of Aragon,

gon, ſituated on the Iſuela, the ſee of a biſhop, ſuffragan of Saragoſſa, containing four pariſhes, five convents, and an univerſity founded in 1354. In the ſeventh century, this town was the capital of a ſmall Mooriſh kingdom; but in 1096 it was recovered by the Chriſtians; 27 miles N.N.E. of Saragoſſa. N. lat. 42° 7′. W. long. 0° 27′.

HUESCAR, a town of Spain, in Granada, containing two pariſhes and four convents; ſeven miles W.N.W. of Carthagena.

HUET, Peter Daniel, in *Biography*, a learned French prelate, was born at Caen in 1630. Owing to the death of his parents, his education devolved upon an aunt who placed him, while young, in the Jeſuits' college at Caen, where he was diſtinguiſhed by aſſiduity and an amiable diſpoſition. He cultivated with much ſucceſs not only polite literature, but mathematics, philoſophy, juriſprudence, and the Hebrew language. In connection with the latter ſtudy, he cultivated the acquaintance of the learned Bochart, the Calviniſt miniſter of Caen, but to avoid ſuſpicion, their conferences were firſt held in ſecret. When he attained to the age of manhood he viſited Paris, and began to indulge his paſſion for books, by purchaſing as many as his finances would admit of. In 1652 he accompanied Bochart in a journey to Sweden, whither that learned man had been invited by queen Chriſtina. He was tired of the country before the approach of winter; and leaving Bochart there, he returned through Holland, where he paſſed ſome time in viſiting the univerſities and men of learning. On his arrival at Paris, a controverſy aroſe between him and Bochart, concerning Origen's commentary on St. Matthew's goſpel, which put an end to their friendſhip. In 1661, Huet publiſhed his firſt work, entitled "De Interpretatione," the object of which was to confine, within due limits, the licence of tranſlators, eſpecially thoſe of the ſcriptures. He inſtituted, about this period, an academy of phyſics at Caen, the members of which aſſembled weekly at his houſe, where they read memoirs, and conducted experimental enquiries. This inſtitution was patronized by the miniſter Colbert, through whoſe influence the royal munificence was extended, not only to the ſociety, but alſo to its founder, and Huet was put on the liſt of learned men upon whom penſions were regularly conferred. In 1670, when Boſſuet was appointed preceptor to the dauphin, Huet was called to the office of ſub-preceptor. In this poſt, one of his employments was to ſuperintend that edition of the claſſics which is commonly known here as the Delphin edition. In 1674 he was elected a member of the French academy, in 1676 prieſts' orders, which he had hitherto deferred taking, were given him, and in 1678 he was preſented to the abbey of Aunay in Normandy, a place, the beauties of which he has celebrated in verſe, and which became his favourite reſidence. He was preſented, in 1685, to the biſhopric of Soiſſons, but owing to the diſputes then exiſting between France and Rome, he never obtained his bulls, nor took poſſeſſion of his ſee, and which he readily exchanged in 1689 for that of Avranches, which was his native province. To this ſee he was not conſecrated till 1692, and in 1699 finding the burthen of the ſituation too great for his comfort, he begged permiſſion to reſign his biſhopric, and was preſented by the king, as a pecuniary compenſation, with the abbacy of Fontenai near Caen. Here he became the victim of ſeveral law ſuits, and at length made his retreat from the world and its vexations into the houſe of the Jeſuits at Paris, to which he bequeathed his library. Here he remained abſorbed in his ſtudies, and in intercourſe with a few learned men, till his death in January 1721, at the great age of ninety-one. Huet was the author of many learned works, and may be regarded as one of the moſt diſtinguiſhed literary ſcholars of the age in which he flouriſhed. Of his various publications the following have been tranſlated into Engliſh. "On the Origin of Romances:" "On the Situation of the Terreſtrial Paradiſe:" "Hiſtory of the Commerce and Navigation of the Ancients;" and "On the Weakneſs of the Human Underſtanding." Moreri.

HUETA, in *Geography*. See Gueta.

HUF, a town of European Turkey, in Moldavia, on the Pruth; 50 miles S.S.E. of Jaſſi. N. lat. 46° 34′. E. long. 46° 19′.

HUG, or *Corniſh* Hug, a term uſed in wreſtling, when one has an adverſary on his breaſt, and holds him faſt there.

HUGH, in *Biography*, abbot of Flavigny, who flouriſhed in the beginning of the twelfth century, celebrated for his talents as an eccleſiaſtical hiſtorian, deſcended from an illuſtrious family, was born in the year 1065. He embraced the monaſtic life in the abbey of St. Vannes at Verdun, but when the members of that community were diſperſed, he, together with the other monks, took refuge at the monaſtery of Flavigny, in the dioceſe of Autun. Here he acquired ſo much eſteem and reſpect, that, upon the death of the abbot, in 1097, he was elected to that dignity, though he was not more than thirty-two years of age. He was author of "Chronicon Verdunenſe," which is divided into two parts, the firſt contains an eccleſiaſtical hiſtory from the birth of Chriſt to the cloſe of the tenth century, and the ſecond a continuation of the ſame from 1002 to 1102. This ſecond part furniſhes us with much valuable information concerning the eccleſiaſtical affairs of France in the eleventh century. It was drawn out of obſcurity by father Labbè, who calls it an ineſtimable treaſure, and printed it in the firſt volume of his "Bibliotheca nova Manuſcriptorum," from a ſuppoſed autograph of the author, found in the Jeſuits' college at Paris. Moreri.

Hugh of Fleury, a learned French monk, who flouriſhed about the year 1120, and embraced the eccleſiaſtical life in the abbey of Fleury. He was author of "Chronicon Libris VI. ad Ivonem Carnotenſem," commencing with the reign of Ninus, king of the Aſſyrians, and terminating with the death of the emperor Lewis the Pious, in the year 840; and alſo of a ſhort, but well digeſted chronicle, from the beginning of the world to the reign of Lewis the Pious. Hugh was author likewiſe of "Lib. II. de regia Poteſtate, et ſacerdotali Dignitate, ad Henricum Angliæ Regem," which is thought by ſome critics to be the moſt valuable of his works. Moreri.

Hugh of St. Victor, was born near Ypres, in Flanders, about the year 1097. When he was eighteen years of age, he entered into the congregation of the canons regular of St. Auguſtine, at the monaſtery of St. Victor, in Paris, where he ſpent the remainder of his life, and roſe to the office of prior. In 1130 he was appointed to the theological chair, which he filled with ſo much reputation, that he was commonly called a "ſecond Auguſtine." He died in 1140, when only in the 44th year of his age. His works were collected and publiſhed in three volumes folio. They have been ſeveral times reprinted.

Hugh of St. Charus, or St. Theodoric, a French monk, and cardinal in the thirteenth century, was born in the vicinity of Vienne, in Dauphine. In 1225 he entered into the Dominical order of preaching friars, of which he was ſoon appointed provincial. He was afterwards created doctor by the faculty of the Sorbonne, and was ſent by pope Gregory IX. on a miſſion to Conſtantinople, to attempt to bring about an union between the eaſtern and weſtern churches. In 1245 he was created a cardinal by pope Innocent IV. under the title of St. Sabina, who alſo employed him in many important and difficult negociations. He died at Orvieto in the year 1263. He was author of many very uſeful works, but the moſt celebrated is the "Concordance of the Bible," of which he was the inventor, and in drawing up which, he employed many monks of his order. This work was printed at Cologne in 1684, and is entitled "Concordantia major Latinorum Bibliorum pro omnibus vocibus declinabilibus in tota S. ſcriptura repertis." Moreri.

Hugh Capet. See Capet.

HUGHES, John, in *Biography*, an Engliſh poet, was born, in 1677, at Marlborough. He was educated in London, was a ſtudent in the academy of Mr. Thomas Rowe, and was a contemporary of Dr. Watts, Mr. Say, and ſome others who arrived at eminence. Mr. Hughes attached himſelf to polite literature, and was a practitioner in the fine arts. He obtained a place in the office of ordnance, and was ſecretary to various commiſſions, for purchaſing lands for the uſe of the Royal docks. His employments under government, and his political principles, induced him to exerciſe his poetic talents upon public topics. He publiſhed "A Poem on the Treaty of Ryſwick:" "The Court of Neptune;" "A Poem on the Return of King William from Holland;" and a pindaric ode, entitled "Of the Houſe of Naſſau." His ſentiments and poetry rendered him acceptable to the Whig party, and connected him with Addiſon, Steele, and other perſons of diſtinction. He became one of the writers in the Tatler, Spectator, and Guardian. His taſte for muſic introduced him to the acquaintance of ſeveral eminent compoſers, and led him to write many pieces for muſical accompaniment. In 1715 he publiſhed, by ſubſcription, an edition of Spencer, by which he gained great credit as an elegant critic. In 1717 he obtained the patronage of lord chancellor Cowper, who gave him the place of ſecretary to the commiſſions of the peace. His want of health interrupted the enjoyment of his good fortune. Under much bodily langour he compoſed his tragedy of "The Siege of Damaſcus," which was brought on the ſtage in February 17th, 1719-20, on which night the author finiſhed his earthly career, at the age of forty-three. He was a man generally beloved and reſpected: his temper was amiable, his morals were pure, and his integrity was unimpeachable. His tragedy is the principal piece of his compoſition. In 1735 a complete collection of his poems and dramatic pieces was publiſhed with an account of his life in two volumes, 12mo. by his brother-in-law, William Duncombe, eſq. The younger brother, Jabez Hughes, publiſhed a tranſlation from Claudian of the Rape of Proſerpine: and the ſtory of Sextus and Erictho from Lucan; alſo Suetonius's Lives of the Cæſars, and ſome of Cervantes novels. Another John Hughes, fellow of St. John's college, Cambridge, publiſhed, in 1712, an edition of Chryſoſtom on the Prieſthood.

Mr. John Hughes, during the early part of the laſt century, was our principal lyric poet; and not only wrote for muſic, but was himſelf a performer in Britton, the ſmall-coal man's concerts. He wrote the Engliſh opera of "Calypſo and Telemachus," for Galliard to ſet, and "Apollo and Daphne," for Dr. Pepuſch, with cantatas for both. His verſes on Mrs. Barbier's elopement, and on the rivalry of Margarita and Mrs. Tofts, ſhew that he intereſted himſelf in the tranſactions of the muſical world, and was on the watch to ridicule the follies and diſplay the talents of its profeſſors.

HUGHESBURG, in *Geography*, a town of America, in Northumberland county, Pennſylvania, called alſo "Cataweſſy," ſituated at the mouth of Cataweſſy creek; 25 miles N.E. of Sunbury. It contains 1315 inhabitants. N. lat. 40° 54'.

HUGH-TOWN, a town of St. Mary's, one of the Scilly iſlands.

HUGO, Charles Louis, in *Biography*, a French writer, abbot of Eſtival, and biſhop of Ptolemais, died in 1735. His chief works are, "Annales Premonſtratenſium," which is a curious hiſtory of the monaſtic order. "Vie de St. Norbert, Fondateur des Premontres:" "Sacræ Antiquitates monumenta hiſtorica, dogmatica, diplomatica," 2 vols. fol. "Traité Hiſtorique et Critique de la Maiſon de Lorraine." This laſt, on account of the freedom with which crowned heads are treated in it, was publiſhed under the borrowed name of Baleicourt, and pretendedly printed at Berlin. Moreri.

HUGONIA, in *Botany*, ſo named by Linnæus in honour of Dr. Auguſtus John Hugo, phyſician to his Britiſh majeſty at Hanover, the friend of Haller, and the companion of ſome of his botanical expeditions among the Alps. He graduated at Leyden in 1711, and publiſhed a theſis *de variis plantarum methodis*.—Linn. Gen. 349. Schreb. 457. Willd. Sp. Pl. v. 3. 694, Mart. Mill. Dict. v. 2. Juſſ. 275. Lamarck. Illuſtr. t. 572. Cavan. Diſſ. 177. Gærtn. t. 58.—Claſs and order, *Monadelphia Decandria.* Nat. Ord. *Malvaceæ*, Juſſ.

Gen. Ch. *Cal.* Perianth inferior, of five ovate, acute, concave, coriaceous, permanent leaves; the two outer ones largeſt. *Cor.* Petals five, roundiſh, large, ſpreading, emarginate, contracted at the baſe into a thin claw, attached to the cup formed by the ſtamens. *Stam.* Filaments ten, awl-ſhaped, equal, ſhorter than the corolla, united by their baſe into a little cup; anthers roundiſh, furrowed, incumbent. *Piſt.* Germen ſuperior, roundiſh; ſtyles five, thread-ſhaped, longer than the ſtamens; ſtigmas capitate, orbicular, flat. *Peric.* Drupa globoſe, of one cell. *Seed.* Nut globoſe, deeply ſtriated, of ten cells; kernels oblong, compreſſed, curved at the back.

Obſ. "The two outer leaves of the calyx are entirely downy on their outſide. The middle one is likewiſe downy, except a part of it covered by one of the former, where it is ſmooth and ſhining, like the two innermoſt, which are downy at their points only. Five of the filaments are a little ſhorter than the reſt. Five of the kernels ſeem often to be abortive; hence perhaps it happened that Cavanilles took the nut to have but five cells. In that which I opened there were more than five kernels." *Schreber.*

Eſſ. Ch. Calyx ſimple, of five permanent leaves; two of them external. Petals five. Styles five. Drupa with a furrowed nut of about ten cells.

1. H. *Myſtax.* Linn. Sp. Pl. 944. Lamarck. Dict. v. 3. 149. Willd. n. 1. (Modera-canni; Rheede. Malab. v. 2. 29. t. 19.)—Spines oppoſite, revolute. Leaves obovate, ſmooth, entire.—Native of the Eaſt Indies, in ſandy ground. A ſlender *ſhrub*, about 12 feet high, with numerous, ſhort, leafy, not quite oppoſite branches, each of which bears, about its middle, a pair of remarkable ſtrong, revolute, ſmooth ſpines. The reſemblance of theſe to a pair of muſtaches, is ſaid to be expreſſed in the Indian name *Modera*, as in the Latin one *Myſtax*. *Leaves* numerous, ſcattered, from one to two inches long, obovate, entire, rather pointed, finely veiny, ſmooth on both ſides. *Footſtalks* ſhort, broad and downy. *Stipulas* awl-ſhaped, downy. *Flowers* numerous, on axillary, ſimple, ſilky ſtalks, about the ends of the branches. *Petals* yellow, ſtriated. *Fruit* ſhining, near half an inch in diameter.—The wood is ſaid to be of a reddiſh brown, with a grateful aromatic odour. The root is eſteemed

uſeful as a topical application to inflamed or ſwelled parts, and even in the bite of the hooded ſerpent, *Coluber Naja.* It is alſo given internally for febrile diſorders in children, for the colic, worms, &c. The fruit has a red taſteleſs pulp.

2. H. *ſerrata.* Lamarck. Dict. v. 3. 149. Willd. n. 2. (H. Myſtax; Cavan. Diſſ. 177. t. 73. f. 1.)—Spines oppoſite, revolute. Leaves elliptic-lanceolate, ſerrated, ſmooth, with glandular hairs at the origin of the veins.—Gathered by Commerſon in the iſland of Mauritius. Cavanilles miſtook it for the former, from which it is very diſtinct. The *leaves* are larger, more acute, and ſtrongly ſerrated, furniſhed at the origin of their veins with tufts of hair as in the Lauruſtinus. The young *leaves* only are very ſilky. *Flower-ſtalks* ſomewhat corymboſe. This is the ſpecies drawn in Lamarck's t. 572, after Cavanilles.

3. H. *tomentoſa.* Cavan. Diſſ. 178. t. 73. f. 2. Willd. n. 3. Lamarck. Dict. v. 3. 150.—Leaves elliptic-oblong, ſerrated, downy on both ſides. Stipulas ovate.—Gathered by Commerſon in the iſle of Mauritius, with the laſt, from which it ſeems ſufficiently diſtinct in having broader, rather obovate, downy leaves.

HUGUENOTS, an appellation given by way of contempt to the reformed or proteſtant Calviniſts of France.

The name had its firſt riſe in 1560; but authors are not agreed as to the origin and occaſion of it: but one of the two following ſeems to be the leaſt forced derivation.

One of the gates of the city of Tours is called the gate Fourgon, by corruption from *feu Hugon, i. e.* the late Hugon. This Hugon was once count of Tours, according to Eginhardus, in his life of Charles the Great, and to ſome other hiſtorians. He was it ſeems a very wicked man, who by his fierce and cruel temper made himſelf dreadful; ſo that after his death he was ſuppoſed to walk about in the night time, beating all thoſe he met with: this tradition the judicious Thuanus has not ſcrupled to mention in his hiſtory. Davila and other hiſtorians pretend that the nickname of Huguenots was firſt given to the French proteſtants, becauſe they uſed to meet in the night time in ſubterraneous vaults near this gate of Hugon; and what ſeems to countenance this opinion is, that they were firſt called by the name of Huguenots at this city of Tours.

Others aſſign a more illuſtrious origin to that name; and ſay that the leaguers gave it to the reformed, becauſe they were for keeping the crown upon the head of the royal line deſcended from Hugh Capet; whereas they were for giving it to the houſe of Guiſe, as deſcended from Charles the Great.

Others again derive it from a French and faulty pronunciation of the German word *eidgnoſſen*, ſignifying *confederates*, and originally applied to that valiant part of the city of Geneva, which entered into an alliance with the Swiſs cantons, in order to maintain their liberties againſt the tyrannical attempts of Charles III. duke of Savoy.

Theſe confederates were called *Eignots*, whence *Huguenots.*

The perſecution which they underwent has ſcarce its parallel in the hiſtory of religion: though they obtained a peace from Henry III. in 1576, it was only of ſhort continuance. This peace was the ſource of that civil war, in which the ambitious and powerful houſe of Guiſe, inſtigated by the ſanguinary ſuggeſtions of the Roman pontiffs, aimed at nothing leſs than the extirpation of the royal family, and the utter ruin of the Proteſtant religion; while the Huguenots, on the other hand, headed by leaders of the moſt heroic valour and the moſt illuſtrious rank, combated for their religion and for their ſovereigns with various ſucceſs. Theſe dreadful commotions, in which both the contending parties committed ſuch deeds as cannot be remembered without horror, were, at length, calmed by the fortitude and prudence of Henry IV. This monarch, indeed, ſacrificed the dictates of conſcience to the ſuggeſtions of policy; and imagining, that his government could have no ſtable or laſting foundation, as long as he perſiſted in diſowning the authority and juriſdiction of Rome, he renounced the reformed religion, and made a ſolemn and public profeſſion of popery. Perceiving, however, on the other hand, that it was not poſſible either to extirpate or ſuppreſs entirely the Proteſtant religion, he granted to its profeſſors, by the famous edict of *Nantes,* (which ſee,) in the year 1598, the liberty of ſerving God according to their conſciences, and a full ſecurity for the enjoyment of their civil rights and privileges, without perſecution or moleſtation from any quarter whatever. The ſufferings of the Huguenots were afterwards renewed, when every method which artifice or perfidy could invent had been practiſed in vain againſt the Proteſtants under the reign of Lewis XIV. The biſhops and Jeſuits, whoſe counſels influenced the cabinet of this prince, judged it neceſſary to extirpate, by fire and ſword, this reſolute people; and thus to ruin, as it were by one mortal blow, the cauſe of the reformation in France. Their inſidious arguments and importunate ſolicitations had ſuch an effect upon the weak and credulous mind of Lewis, that, in the year 1685, trampling upon the moſt ſolemn obligations, and regardleſs of all laws, human and divine, he revoked the edict of Nantes, and thus deprived the Proteſtants of the liberty of ſerving God according to their conſciences. This revocation was accompanied, indeed, with the applauſe of Rome; but it excited the indignation even of many Roman Catholics, whoſe bigotry had not effaced or ſuſpended, on this occaſion, their natural ſentiments of generoſity and juſtice. It was moreover followed by a meaſure ſtill more tyrannical and ſhocking; even an expreſs order, addreſſed to all the reformed churches, to embrace the Romiſh faith. The conſequences of this cruel and unrighteous proceeding were highly detrimental to the true intereſts and the real proſperity of the French nation, by the prodigious emigrations it occaſioned among the Proteſtants, who ſought, in various parts of Europe, that religious liberty, and that humane treatment, which their mother country had ſo cruelly refuſed them. Thoſe among them, whom the vigilance of their enemies guarded ſo cloſely as to prevent their flight, were expoſed to the brutal rage of an unrelenting ſoldiery, and were aſſailed by every barbarous form of perſecution that could be adopted to ſubdue their courage, exhauſt their patience, and thus engage them to a feigned and external profeſſion of popery, which in their conſciences they beheld with the utmoſt averſion and diſguſt. In other countries, and particularly in our own, they found an aſylum, and communicated in return for the protection they experienced the benefit of their ſkill and induſtry. Moſheim's Eccl. Hiſt. vol. v.

HUIDE, in *Geography*, a town of Norway, in the dioceſe of Chriſtianſand; 20 miles E. of Skeen.

HUIDINGS, a ſmall iſland in the North ſea, near the weſt coaſt of Norway. N. lat. 59° 3′. E. long. 5° 42′.

HVILGRUND, and HVILGRUNDET, two ſmall iſlands on the weſt ſide of the gulf of Bothnia: the firſt in N. lat. 60° 47′. E. long. 17° 11′; the ſecond in N. lat. 60° 36′. E. long. 17° 27′.

HUIS, L', a town of France, in the department of the Ain, and chief place of a canton, in the diſtrict of Belley; 6 miles W. of Belley. The place contains 1123, and the canton 6465 inhabitants, on a territory of 175 kiliometres, in 13 communes.

HUISSEN, a walled town of Germany, in the duchy of Cleves; 10 miles N.N.W. of Cleves.

HUISSIER, a French name for an uſher, ſerjeant, or beadle.

HUITAN, in *Geography*, a town of Sweden, in Weſt Bothnia; 20 miles N. of Lulea.

HUITINGO Pollachius, in *Ichthyology*. See Gadus *Pollachius*.

HVITTISBURG, in *Geography*, a town of Sweden, in the government of Abo; 12 miles N. of Biorneborg.

HUJUS, or Hujusce Diei, in *Mythology*, a ſurname given by the Romans to Fortune. She had a temple at Rome, erected by Q. Catullus.

HULDIBARRY, in *Geography*, a town of Bengal; 48 miles N.E. of Purneah.

HULDIPOOKRA, a town of Bengal; 46 miles S. of Jauldoe.

HULDOOA, a town of Hindooſtan, in the circar of Dooab; 50 miles N.W. of Pattiary.

HULDSCHIN, or Holtschin, a town of Sileſia, in the principality of Oppau; 11 miles E. of Troppau. N. lat. 49° 48′. E. long. 18° 12′.

HULET Panias, a lake of Paleſtine, anciently called lake "Merom," into which runs a river of the ſame name, anciently denominated the "Dan."

HULIN Rocks, otherwiſe called *the Maids*, rocks in the North channel of the Iriſh ſea, always above water, which lie about 6 miles N.E. from Lough Larne, on the coaſt of Antrim. N. lat. 54° 57′. W. long. 5° 37′.

HULKS are large veſſels, having their gun-decks from a hundred and thirteen to a hundred and fifty feet long, and from thirty-one to forty feet broad, and fitted with an apparatus, in order to fix or take out the maſts of his majeſty's ſhips, as occaſion requires. They will carry from four hundred to a thouſand tons.

Anciently, the word *hulka* ſeems to have ſignified a ſmall veſſel.

Hulk is alſo a name beſtowed on any old veſſel laid by, as unfit for farther ſervice. It is probably derived from the ολκαδες, or veſſels of burthen of the ancient Grecians.

HULL, or Kingston-upon-Hull, in *Geography*, a borough, market-town, and ſea-port in the Eaſt Riding of the county of York, England, is ſituated on the weſtern ſide of the river Hull, and the northern bank of the river Humber, at the diſtance of about 25 miles from the mouth of the latter; nine miles S. of Beverley; 173 N. of London; and 38 S.E. of York. It extends nearly two miles in length, in a direct line, in which extent is included the adjoining pariſh of Sculcoates; and to rather more than half that diſtance in a parallel direction towards Beverley. The town originated in the year 1296, under the immediate patronage of king Edward I., who, on his triumphant return from Scotland, projected the foundation of a port, &c. at this place, then a ſmall hamlet, called Wyke, and put his deſign immediately into execution. Peculiar privileges were granted to builders and reſidents, together with a royal charter, veſting the government in a warden and the body of freemen; and the new-formed town was diſtinguiſhed by the appellation of Kingſton, or Kingſtown-upon-Hull. Edward founded a houſe of White friars, and cauſed a hall to be built for his own reſidence. This was probably given to the De la Poles, for ſoon afterwards a magnificent manor-houſe was erected by that wealthy family, which was frequently honoured with the royal preſence, and falling to the crown by the attainder of Edmund de la Pole, earl of Suffolk, in 1508, became for ſome time the reſidence of king Henry VIII.

So rapid was the progreſs of the place, that, in about ſixty years from its foundation, it was called upon to furniſh king Edward III. with 16 ſhips and 466 men. In Leland's time it was a fair and well built town; and, according to Camden, it poſſeſſed ſtately edifices, ſtrong fortreſſes, ſhips well equipped, a number of merchants, and abundance of all kinds of wealth; having been favoured with not leſs than ſixteen charters from various ſucceſſive monarchs. It was firſt fortified under a charter from king Edward II., and the walls repaired and ſtrengthened with towers of brick in the time of king Richard II. by ſir Michael de la Pole, who appears to have revived in this place the art of brick-making, which had fallen into diſuſe ſince the time of the Romans. King Henry VIII. built two block-houſes and a citadel on the eaſt bank of the river Hull, at an expenſe of 23,000*l.*, although he drew great part of the materials from the diſſolved houſes of Black and White friars, and the church of St. Mary. King Charles II., in 1681, laid out a vaſt ſum in improving the fortifications, which had ſuffered conſiderably from the ſevere ſiege of the town by the earl of Newcaſtle, and during the civil wars in the preceding reign. Within the laſt 35 years, the whole of theſe ancient works of defence, with the gates of the town, have been demoliſhed, except two of the fortreſſes built by Henry, which, being guarded by ſeveral batteries and modern erections, are now converted into magazines, capable of containing more than 20,000 ſtand of arms, and ordnance ſtores for twelve or fifteen ſail of the line, defended by a regular garriſon.

Hull conſiſts of three principal diviſions, formed by the intervention of the docks, which, occupying the greater part of the ſpace where the walls formerly ſtood, nearly inſulate the old town. That on the north ſide of the old dock is in the pariſh of Sculcoates; all its buildings have been erected within the laſt thirty years, and form ſeveral ſpacious and handſome ſtreets. A neat hall has been built for the adminiſtration of juſtice, &c. this part of the town being in the county of York, and not under the juriſdiction of the magiſtrates of Hull. The other diviſion has ariſen ſtill more recently, and lies to the weſt of the Humber dock, occupying the ſituation of the ancient hamlets of Wyke and Myton; by which latter name it is now diſtinguiſhed, and is included in the county of the town of Hull. A ſuburb alſo has lately ſprung up, on the Holderneſs ſide of the river, in the pariſhes of Drypool and Sutton, encompaſſing the garriſon, and connected with the town by a bridge of four ſtone arches, rebuilt in 1787, with a draw-bridge in the centre, which has this year (1811) been renewed on a very ingenious and novel conſtruction, and is wide enough to admit the largeſt veſſels that have occaſion to paſs through it. The whole town ſtands on a level tract of ground, within a ſhort diſtance of the Yorkſhire wolds; the principal ſtreets are broad and well paved, and in lighting and watching it is not inferior to any place in the kingdom. A few years ago, it was computed that about 200 houſes were built annually, but ſince the interruption to the Baltic trade, the principal ſource of revenue to this port, that number has been much diminiſhed.

The edifices for religious worſhip belonging to the eſtabliſhment are two pariſh churches, that of the Holy Trinity and St. Mary's; with a chapel of eaſe, and the chapels of the Trinity-houſe and Charter-houſe. The church of the Holy Trinity, a noble ſtructure, was firſt erected in the reign of king Edward II.; the tower and weſt end were added about the time of king Henry VII., by whoſe ſucceſſor, Hull was made the ſee of a ſuffragan biſhop, who poſſeſſed a ſtately palace in the High-ſtreet, long ſince deſtroyed. The church, however, remained under that of the neighbouring village of Heſsle, until ſeparated by an act of parliament in 1661. St. Mary's was formerly a much larger ſtructure, and belonged to the priory of Ferriby. Great part of it, including the ſteeple, was pulled down by king Henry VIII. as obſtructing the view from his palace. St. John's is a chapel of eaſe to the Holy Trinity, and was finiſhed in 1792 at the ſole expenſe of the Rev. Thomas Dikes, LL.B. the preſent incumbent. There are alſo various meeting-houſes for the peculiar doctrines and worſhip of all the prevailing ſects.

The charitable inſtitutions in Hull are numerous. The moſt ancient and ſplendid is that of the Trinity-houſe, founded by ſubſcription in 1369, and rebuilt in 1753 : its funds have been progreſſively augmented by legacies and benefactions. It was incorporated by letters patent in the reign of Henry VI.; and its charters and grants have, at various ſubſequent periods, been renewed and extended. The fund is conſiderably increaſed by a monthly contribution of ſixpence from every ſeaman ſailing from this port; when ſuperannuated, or diſabled, they obtain relief, as do alſo their widows and children, from this charity. Several diſtinguiſhed characters have been admitted to the freedom of this corporation, which is governed by wardens, brethren, and aſſiſtants. In a marine-ſchool, connected with it, thirty-ſix boys are, for three years, clothed and educated for the ſea ſervice ; the guild alſo provides North ſea pilots for the royal navy, when required by government. The Charter-houſe hoſpital is worthy of particular notice ; it was founded, together with an adjoining priory, by Michael de la Pole, for the ſupport of a certain number of penſioners, denominated brothers and ſiſters ; under the ſuperintendance of a maſter, who enjoys a ſalary of 100*l.* per ann., with a houſe and garden. Several other ſmaller hoſpitals, for ſimilar purpoſes, are diſtinguiſhed by the names of the reſpective founders, *viz.* Liſter's, Gregg's, Crowle's, Watſon's, (biſhop of St. David's,) Gee's, Harriſon's, Ratcliff's, and Weaver hoſpitals. The workhouſe is a large building, commonly known by the name of Charity hall. For the relief of the indigent ſick and maimed, a general infirmary was erected, in 1782, by voluntary contributions, on a plan ſuperior to moſt eſtabliſhments of the kind, which has been the means of reſtoring to health near 9000 perſons. Here are likewiſe a free grammar-ſchool, founded by Alcock, biſhop of Ely, in 1486, which enjoyed conſiderable reputation, eſpecially under its late maſter the Rev. Joſ. Milner, A.M. ; the Vicar's-ſchool, eſtabliſhed by the Rev. W. Maſon, father of the poet of that name ; a ſchool for girls, and a valuable inſtitution for putting out poor boys apprentices, endowed by Ald. Coggan, and another for orphans, endowed by Ald. Ferris. Two handſome buildings have alſo been recently erected, capable of containing 500 boys, and 250 girls, who are inſtructed with great ſucceſs, according to the improved ſyſtem of education. The chief part of the expenſe, as alſo that of ſeveral Sunday-ſchools and other charities, is defrayed by voluntary ſubſcriptions.

Beſides the various buildings already noticed, there are the cuſtom-houſe, intended originally as an exchange alſo, but having been long diſuſed for that purpoſe, the preſent comfortable room, with a news-room over it, was deſigned and executed in 1794, by and at the expenſe of an individual, though with a view to his ultimate advantage ; the aſſembly rooms, not now adequate to the wants and opulence of the town ; the gaol ; the Neptune hotel ; the Rodney and Minerva lodges of Free-maſons, the former of which is a moſt elegant and handſome room ; the ſubſcription libraryt, founded in 1775, and built in 1800, a great advantage to the inhabitants, and containing many thouſand volumes ; and the theatre royal, rebuilt in 1809, a ſpacious and convenient ſtructure, the interior of which is fitted up in a ſuperior ſtyle of comfort and elegance. The avenue from the market-place to the Humber was lately widened, by taking down the guild hall, a mean brick building, and on its ſcite ſhambles were erected, which, for convenience, elegance, and ventilation, may challenge compariſon with any in the kingdom. The old ſhambles being likewiſe removed, the beautiful eaſt end of Trinity church is again thrown open to the market-place, in the centre of which ſtands an equeſtrian ſtatue of king William III. erected in 1734. Until a new guild hall ſhall be provided, the corporation tranſact buſineſs in a large houſe fitted up for the purpoſe. Among the public accommodations enjoyed by the inhabitants, may be reckoned the Barton-boats, which croſs the Humber every tide, to and from Barton, a diſtance of about ſeven miles.

The commerce of Hull will be beſt appreciated by a ſtatement of the annual exports and imports for a few years. The tonnage of this port was, ſeveral years ago, inferior only to that of London, Liverpool, and Briſtol ; its cuſtoms only to thoſe of the former two. It ſends at preſent nearly thrice as many ſhips to the whale fiſheries as London, and, excluſive of the latter port, more than all Great Britain beſides. Its facilities of communication with the interior, by means of the Ouſe and Trent, and the canals communicating with them are very great. The groſs amount of the cuſtoms was

		£.
In 1802	-	438,459
— 1803	-	379,675
— 1804	-	287,210
— 1805	-	386,070
— 1806	-	374,907
— 1807	-	340,825
— 1808	-	198,487
— 1809	-	276,811
— 1810	-	311,780

The number of ſhips (Britiſh and foreign) that entered inwards, and cleared outwards, from and to foreign parts, alſo of coaſting-veſſels, was,

	With Cargoes.		In Ballaſt.		Coaſting Veſſels.	
	Inwards.	Outwards.	Inwards.	Outwards.	Inwards.	Outwards.
1804	728	279	51	380	1560	1547
1805	658	232	47	327	1626	1602
1806	513	226	29	272	1576	1636
1807	525	158	9	335	1484	1614
1808	207	67	109	135	1557	1733
1809	473	256	55	223	1806	1938
1810	622	193	30	427	1786	2033

The dock was undertaken, according to act of parliament, in 1774, and completed within four years ; the entrance is immediately from the river Hull ; it extends in length about 600 yards ; in width 85 ; and is 23 feet deep ; is capable of containing 100 ſail of ſquare rigged veſſels ; and, with the wharfs and quay, occupies a ſpace of more than thirteen acres ; containing in the dock 48,188 ſquare yards, in the quay 17,479; exceeding in capacity the largeſt in Liverpool, and now only ſurpaſſed by thoſe of London : when made it was the largeſt in the kingdom. The ſubſcribers to the dock are incorporated by the title of "The Dock Company at Kingſton-upon-Hull." The original number of ſhares was 120, but the trade of the port requiring further accommodation, two other acts of parliament were obtained in 1802 and 1805, by which the company was empowered to increaſe them to 180, the money ariſing from which, amounting to 82,390*l.*, was appropriated to the making of a new dock, which was completed under the title of the Humber dock, in 1809, at an expenſe of 220,000*l.* It opens into the Humber by a lock of excellent workmanſhip, large enough to admit a fifty-gun ſhip, croſſed by an iron bridge in two parts, of very ingenious mechaniſm. The area of the dock and quays is ten acres, with a baſin of four acres; its length 300 yards, width 114, and depth 29 feet; and it is intended to communicate with the old dock at ſome future time, which, when effected, will wholly inſulate the old town. The company is entitled to certain duties on all ſhips entering the port; the profit divided on the ſhares was,

	£.	*s.*	*d.*	£.	*s.*	*d.*	
In 1805	14,733	15	0	98	4	6	per ſhare.
— 1806	8,901	15	0	49	9	1	——
— 1807	8,290	10	0	46	1	2	——
— 1808	4,941	15	0	27	9	1	——
— 1809	7,872	15	0	43	14	9	——
— 1810	10,306	10	0	57	5	2	——

The manufactures of Hull are various and extenſive; one of the principal branches is that of expreſſing and refining oil from linſeed, and preparing the reſidue for feeding cattle: the proceſs is chiefly effected by mills worked by the wind. The largeſt and fineſt mills in the kingdom of this kind, both for the above purpoſe and for grinding corn, are to be found in great numbers near this town; their machinery is excellent, and many of them are from 80 to upwards of 100 feet in height. An iron-foundery, two large ſugar-houſes, an extenſive ſoap, and ſeveral white lead manufactories, Greenland yards, numerous dry-docks, ſhipbuilders' yards, and rope-walks, where a great number of hands are conſtantly employed; and ſeveral large breweries are amongſt the moſt important, but do not comprize half the manufactories now exiſting in the town.

The entire civil authority over the town, and the ſeveral places within what is denominated the county of the town of Kingſton-upon-Hull, a diſtrict of more than eighteen miles in circumference, weſt of it, is, by various royal charters, particularly thoſe of king Henry VI. and king Charles II., veſted in the corporation, which now conſiſts of the mayor, the recorder, twelve aldermen, the ſheriff, two chamberlains, a town clerk, a water-bailiff, and other officers, beſides a high ſteward, who is generally ſome nobleman of rank. The mayor is admiral of the Humber, and poſſeſſed of the power of life and death over criminals within his juriſdiction. The judges of aſſize viſited this town, but of late years this has been diſcontinued, and all trials are removed to York, though cauſing a great additional expenſe to thoſe concerned.

Hull returns two repreſentatives to parliament: the right of election of whom, as well as of the ſeveral principal members of the corporate body, except the recorder and high ſteward, is veſted ſolely in the burgeſſes or freemen of the town, an important body, amounting to upwards of 2000. The population returns to parliament in 1801, ſpecified, that the town and county contained 4767 houſes, occupied by 29,516 perſons, of whom 13,051 were males, and 16,465 females: this does not include the adjoining populous pariſh of Sculcoates, nor the ſuburb on the eaſt of the river Hull. A fair is held annually in October, and the markets are abundantly ſupplied, eſpecially when the tide ſuits for the Lincolnſhire farmers to croſs the Humber, on Tueſdays, Fridays, and Saturdays.

Hull has, at different times, given birth to men diſtinguiſhed on various accounts. In the firſt rank muſt be placed her repreſentative in parliament, that incorruptible patriot, Andrew Marvell, whoſe father was lecturer of Trinity church; and, in later times, a moſt worthy man and excellent poet, the Rev. W. Maſon, A.M. ſon of the late vicar of the ſame. It likewiſe gave the titles of earl and duke, both now extinct, to the family of Pierrepoint.

The village of Sculcoates, though not in the county, may juſtly be conſidered as forming a part of the town of Hull; a portion of the old dock is included within it. The church, ſituated towards the northern extremity of the pariſh, is a neat uniform ſtructure, rebuilt in the year 1760, and contains ſome fragments brought from the neighbouring abbey of Meaux.

Hull *River*, in the Eaſt Riding of Yorkſhire, is a ſmall river, which falls into the Humber at the town of Kingſton-upon-Hull, better known by the name of *Hull* only, and as being the fourth ſea-port in point of importance in the Britiſh dominions. The Hull is made navigable from the Humber, about twelve miles, to Aike-beck mouth, the entrance of the Driffield navigation. Sen Canal.

Hull *and Leven Canal*, is an inland navigation in Yorkſhire, Eaſt Riding, made in purſuance of acts of parliament obtained in 1801 and 1805; it extends about three miles from the Hull river up to the town of Leven. See Canal.

Hull, the Indian *Nantaſket*, a town of America, in Suffolk county, Maſſachuſetts, containing about 21 houſes, and 117 inhabitants. It is a peninſula 8 miles long, 9 miles E. of Boſton, on the S. ſide of the harbour.

Hull, *Little*, a ſmall iſland in the Eaſt Indian ſea, near the W. coaſt of the iſland of Poggy. S. lat. 2° 45′. E. long. 99° 32′.

Hull *of a ſhip* is her main body, without any maſts, yards, ſails, or rigging.

To Hull, or *lie a* Hull, is underſtood of a ſhip, when, either in a dead calm, or in a ſtorm, ſhe cannot carry all her ſails, but they are taken in to preſerve them; ſo that nothing but her maſts, yards, and rigging are abroad, and her helm tied down to the lee ſide of the ſhip. In this ſtate ſhe will lie eaſily under the ſea, if ſhe be a good ſailer, and make her way one point before the beam.

To ſtrike a Hull, is to lie cloſely or obſcurely in the ſea in a ſtorm, or to tarry for ſome conſort, bearing no ſail, with the helm laſhed a-lee.

To Hull *a ſhip*, is to fire cannon-balls into her hull, within the point-blank range.

Hull, in *Agriculture*, a term made uſe of to ſignify the chaff, or huſk of grain.

HULLEAH, in *Geography*, a town of Hindooſtan, in Benares; 20 miles S. of Merzapour.

HULLOCK *of a Sail*, at *Sea*, is when, in a great ſtorm, ſome ſmall part of a ſail is cut and let looſe. It is chiefly uſed in the mizen-ſail, to keep the ſhip's head to the ſea; then all the reſt of the ſail is made up, except a little at the mizen yard-arm. Alſo, when a ſhip will not *weather-coyle*, to lay her head the other way, they looſe a hullock of her fore-ſails, and then changing the helm to the weather-ſide, ſhe is made to fall off, and to lay her head where her ſtern lay.

HULLUAH, in *Geography*, a town of Hindooſtan, in Guzerat; 15 miles N. of Champaneer.

HULME, Nathaniel, M.D. in *Biography*, was born at Halifax, in Yorkſhire, in the year 1732, and was bred to the profeſſion of a ſurgeon-apothecary. He afterwards ſerved in the capacity of ſurgeon in the navy, and being ſtationed at Leith after the peace of 1763, he embraced the favourable opportunity of proſecuting his medical ſtudies at Edinburgh, where he took his degree of doctor in the year 1765. His inaugural theſis was entitled "Diſſertatio Medica Inauguralis de Scorbuto." Soon after his graduation, he ſettled in London as a phyſician, intending to devote his attention particularly to the practice of midwifery. This, however, he ſoon relinquiſhed: and, on the eſtabliſhment of the General Diſpenſary (the firſt inſtitution of the kind in London), he was appointed its firſt phyſician. He was alſo ſome time phyſician to the city of London Lying-in-hoſpital. About the year 1775, he was, through the influence of lord Sandwich, then firſt lord of the admiralty, elected phyſician to the Charter-houſe. His other official ſituations he reſigned many years before his death, and withdrew himſelf at the ſame time in a great meaſure from the active exerciſe of his profeſſion; but the laſt he retained during the remainder of his life. In April, 1807, he was bruiſed by a fall, which he ſurvived but a fortnight, being at the age of ſeventy-five.

Dr. Hulme was the author of ſeveral diſſertations; *viz.* a republication of his theſis, with additions, 1768. "A Treatiſe on Puerperal Fever," 1772. An oration "De Re Medica cognoſcenda et promovenda," delivered at the anniverſary of the medical ſociety in 1777, to which a ſmall tract was annexed, entitled "Via tuta et jucunda Calculum ſolvendi in Veſica urinaria inhærentem." An enlarged edition of this tract, in Engliſh, appeared in the following year, under the title of "A ſafe and eaſy Remedy for the Relief of the Stone and Gravel, the Scurvy, Gout, &c.; and for the Deſtruction of Worms in the Human Body; illuſtrated by Caſes: together with an extemporaneous Method of impregnating Water and other Liquids with fixed Air, by ſimple Mixture only, &c." 1778. In 1800, Dr. Hulme inſtituted a ſeries of experiments "on the light ſpontaneouſly emitted from various bodies," an account of which was publiſhed in the Philoſophical Tranſactions of that and the following year. Dr. Hulme was alſo one of the editors of the "London Practice of Phyſic." See Tranſ. of the Med. Society of London, vol. i. part 1, 1810.

HULPE, Le, in *Geography*, a town of France, in the department of the Dyle, and chief place of a canton, in the diſtrict of Bruſſels; 8 miles S.E. of Bruſſels. The place contains 897, and the canton 9244 inhabitants, on a territory of 115 kiliometres, in 11 communes.

HULST, a town of France (formerly of Flanders), in the department of the Scheldt, and chief place of a canton, in the diſtrict of L'Ecluſe; 16 miles N.N.E. of Ghent. The place contains 1714, and the canton 11,381 inhabitants, on a territory of 205 kiliometres, in 8 communes. It was formerly the capital of four offices, with twelve dependant villages; it is ſituated on a canal that communicates with the Scheldt, and is very ſtrong, by its fortifications and poſition among the marſhes. N. lat. 51° 14'. E. long. 3° 55'.

HULTSIO, a town of Sweden, in the province of Smaland; 26 miles N. of Wexio.

HULVER, in *Rural Economy*, a name by which the holly-tree is frequently known in ſome diſtricts.

HULWAD, in *Geography*, a town of Hindooſtan, in Guzerat; 55 miles N.E. of Wurwana.

HUMAGUACA, a town of South America, in the province of Tucuman; 65 miles N. of St. Salvador de Jugui.

HUMAN, a town of Perſia, in the province of Segeſtan; 180 miles S.E. of Zareng.—Alſo, a town of Ruſſian Poland, in the palatinate of Braclau; 50 miles E.S.E. of Braclau. N. lat. 48° 42'. E. long. 30° 8'.

HUMAN, ſomething that relates to man, or the nature of man. See NATURE.

Epicurus and his followers deny that the gods concern themſelves with human affairs. See EPICUREANS.

Faith is diſtinguiſhed into divine and human. See FAITH.

HUMAN *Figure, The*, in *Painting* and *Sculpture*. Amidſt all the various beauties with which this earth abounds, and which attract the eyes and call forth the emulation of the artiſt, nothing is ſo aſtoniſhing and ſo engaging as the ſtructure of the human form, and the elegance and variety of the actions of which it is capable. It has been the ſubject of panegyric in all ages. The naturaliſt, the moraliſt, the philoſopher, and the divine, have dwelt, with holy reverence to its Maker, on its delicacy, its ſimplicity, yet variety of conformation, and on its intellectual and ſpiritual endowments; all of which are moſt juſtly combined in deſcription, in the admired contemplative ſpeech our own Shakſpeare has put into the mouth of Hamlet. "What a piece of work is man! how noble in reaſon! how infinite in faculties! in form and moving how expreſs and admirable! in action, how like an angel! in apprehenſion how like a god! the beauty of the world! the paragon of animals!"

To the painter and ſculptor no object in nature is ſo intereſting as the human figure; none requires more ſtudy and attention to enable them juſtly to diſplay its various beauties of action and expreſſion; and a long continued ſeries of obſervation and practice will alone qualify them for the fulfilment of ſo arduous a taſk.

The ſources of this difficulty are, the very great latitude of its motions, and the numerous combinations of them, added to the various poſſibilities of view, and of light and ſhade. Its beauty is indeed very great, independent of all theſe, but they ſerve to enhance its value and render delight to the artiſt, while they call for his utmoſt exertions in his endeavours to repreſent them. So much has already been ſaid under the various articles BEAUTY, CONTOUR, COMPOSITION, DRAWING, EXPRESSION, FACE, &c. that it will only be neceſſary in this place to treat of the proportions of the human figure, the range of its powers of action, its varieties, and the moſt beautiful and juſt combinations of them.

It has long been acknowledged, among artiſts, that the ſculptures of the Greeks, from the time of Pericles to that of Alexander the Great, afford the beſt examples of beautiful and characteriſtic proportion; and from them a ſcale has been drawn out, which, if it will not ſerve for every purpoſe, will always be of uſe, as well to depart from, as to follow. It is, in either caſe, a line to guide us, and ſhould never be loſt ſight of. We ſhall tranſcribe the following one from the note given by ſir Joſhua Reynolds on ver. 144 of Maſon's Freſnoy.

> "Learn then from Greece, ye youths! proportion's law,
> Informed by her, each juſt poſition draw."

"Du Piles has, in his note on this paſſage, given the meaſures of a human body, as taken by Freſnoy, from the ſtatues of the ancients, which are here tranſcribed.

"The ancients have commonly allowed eight heads to their figures, though ſome of them have but ſeven; but we ordinarily divide the figure into ten faces (this depends on the age and quality of the perſons; the Apollo and Venus de Medicis have more than ten faces); that is to ſay, from the crown of the head to the ſole of the foot, in the following manner:

"From the crown of the head to the forehead is the third part of a face.

"The face begins at the root of the loweſt hairs that grow on the forehead, and ends at the bottom of the chin.

“The face is divided into three proportional parts; the firſt contains the forehead, the ſecond the noſe, and the third the mouth and chin; from the chin to the pit between the collar bones is two length of a noſe.

“From the pit, between the collar bones to the bottom of the breaſt, one face.

“From the bottom of the breaſts to the navel, one face. The Apollo has a noſe more.

“From the navel to the genitories, one face. The Apollo has half a noſe more, and the upper half of the Venus is to the lower part of the belly, and not to the privities.

“From the genitories to the upper part of the knee, two faces.

“The knee contains half a face.

“From the lower part of the knee to the ankle, two faces.

“From the ankle to the ſole of the foot, half a face.

“A man, when his arms are ſtretched out, is, from the longeſt finger of his right hand to the longeſt of his left, as broad as he is long.

“From one ſide of the breaſts to the other, two faces.

“The bone of the arm, called humerus, is the length of two faces, from the ſhoulder to the elbow.

“From the end of the elbow, to the root of the little finger, the bone called cubitus, with part of the hand, contains two faces.

“From the box of the ſhoulder-blade, to the pit betwixt the collar bones, one face.

“If you would be ſatisfied in the meaſures of breadth from the extremity of one finger to the other, ſo that this breadth ſhould be equal to the length of the body, you muſt obſerve that the boxes of the elbows with the humerus, and of the humerus with the ſhoulder-blade, bear the proportions of a face when the arms are ſtretched out.

“The ſole of the foot is in length the ſixth part of the figure.

“The hand is the length of a face.

“The thumb contains a noſe.

“The inſide of the arm, from the place where the muſcle diſappears, which makes the breaſt, (called the pectoral muſcle,) to the middle of the arm, four noſes.

“From the middle of the arm at the top, to the beginning of the head, five noſes.

“The longeſt toe is a noſe long.

“The two outermoſt parts of the teats and the pit between the collar-bone of a woman, make an equilateral triangle.

“For the breadth of the limbs no preciſe meaſures can be given, becauſe the meaſures themſelves are changeable, according to the quality of the perſons, and according to the movement of the muſcles. Du Piles.

“The meaſures of the ancient ſtatues by Audran appear to be the moſt uſeful, as they are accompanied with the outline of the figures which are moſt diſtinguiſhed for correctneſs.”

Audran, whoſe work ſir Joſhua Reynolds thus recommends, takes a different plan from that of Freſnoy, and is more minutely accurate. He divides the figure into heads, each head into four parts, and each part into twelve minutes; which certainly has given with more accuracy the exact proportions of thoſe figures he has meaſured; but Freſnoy's is fully equal to the general purpoſes of art; for where variety of character is requiſite, it is evident that the ſame proportions would be an evil; therefore the more general ſcheme is qiute adequate as a guide in drawing the figure.

The knowledge of theſe proportions, and of the forms and poſitions of the bones and muſcles, which compoſe the human figure, may be regarded as the foundation on which to proceed to the more difficult taſk of becoming duly acquainted with its powers and varieties of actions. A perfect knowledge of the ſhapes of the bones is more particularly requiſite in this matter; ſince by their projecting parts coming in contact with each other, a limit is put to the actions of the joints; and they are ſecured from diſlocation by the natural exertions of the muſcles; and the muſcles themſelves directed and governed in their own actions.

Mr. A. Carliſle, profeſſor of anatomy to the Royal Academy, in his able and uſeful lectures before that body, entered much at large upon this part of our ſubject, and in a very ſatisfactory manner demonſtrated it on the ſkeleton and the living figure. To his kindneſs we are indebted for the following remarks, taken chiefly from angular meaſurements, and which will be found highly uſeful to all artiſts who apply their talents in the repreſentation of the human figure.

“The motions of the head and trunk of the body are limited by the ſeveral joints of the ſpine.

“The motions of the whole body upon the lower limbs take place at the hip joints, at the knees, and at the ankles.

“The great limbs, technically called the upper and lower extremities, have rotatory motions at their junctions with the trunk, by means of ball and ſocket joints at the ſhoulders and the hips.

“The analogy of parts between the upper and the lower extremities is not carried throughout the ſtructure of thoſe limbs in the human body.

“The fulcrum of the upper limb is itſelf moveable upon the trunk, as appears by the extenſive motions of the ſcapula, which ſo generally accompany the rotations of the ſhoulder, and which ſupply that limb with a greater range of movements than is poſſeſſed by the lower limb.

“The junction of the thigh, with the motionleſs maſs of the pelvis, limits its rotation to its ball and ſocket-joint.

“The rotation of the head upon the neck takes place at the joint between the firſt and ſecond vertebræ.

“When the noſe is parallel with the ſternum, the face may be turned towards each ſhoulder, through an angle of 60 degrees on each ſide, or the whole range of this turning will extend through 120 degrees.

“The lateral bending of the neck is divided equally between the junctions of the ſeven vertebræ; but the bowing of the head, and the act of throwing the head violently backward, are principally effected, at the joint of the ſkull and the firſt bone of the vertebral column, called the atlas.

“Theſe laſt motions are conſiſtent with an erect ſtate of the neck, while the lateral motions demand a curvature of its whole maſs.

“The movements of the trunk are limited to the rotatory and lateral motions, which are almoſt equally divided among the ſeveral joints of the vertebræ of the back and loins.

“The joints of the dorſal vertebræ are, however, more cloſely compacted than thoſe of the loins, which allows of a wider range for turning and bending in the line of the loins, than in that of the back.

“The ribs and the ſternum move upward, ſo as to expand the width of the cheſt at the lower margin of the ribs, and to draw the clavicles and ſhoulders upward: this takes place at each full inſpiration of the breathing, and the contrary ſtate follows in the act of expiration. Such apparent movements are characteriſtic of certain paſſions and actions, and are always obſervable in the naked figure.

“In ſtooping, to touch the ground, the thigh-bone forms an angle of about 55 degrees with the average direction of the ſpine.

“ The leg bends upon the thigh, at an angle of 75°, and the line of the tibia forms with the ſole of the foot, when that is elevated, an angle of 65 degrees.

“ The whole of this limb is capable of moving at the hip-joint forwards, to a right angle with its perpendicular poſition; and backwards, to an angle of about 20°. The leg will then continue to move by itſelf to its own angle of 75°, with the thigh. It has, beſides this, a motion outwards to about 45°.

“ When the ſhoulders are at reſt, the two clavicles uſually meet in an angle of 110 degrees at the ſternum.

“ The utmoſt elevation of the upper arm uſually forms an angle of 155° with the ſpinal column, and about 125° with the line of its clavicle. The flexion of the fore arm upon the upper arm, is confined to an angle of nearly 40°.

“ The whole arm is capable of moving forward or outward, through nearly half a circle, and backward to an angle of 80°, with its perpendicular ſituation.

“ The actions of pronation and ſupination in the hand, range through 270°: but then 90° of the rotatory motion, in the act of pronation, are derived from the ſhoulder-joint.

“ The palm of the hand admits of flexion and extenſion through 65 degrees in each direction; its lateral motions are 35° outward, and 30° inward.—The flexion of the fingers at each phalanx is 90°, or a right angle.

“ Theſe general rules govern the average and moſt natural actions of the living figure, but peculiar forms and acquired powers conſiderably change all ſuch calculations; nevertheleſs it is expected in art that the knowledge of the true actions of the human figure ſhould be derived from the general ſtate of nature, and not from the diſtortions of the poſture-maſter, or the acquired flexibility of the tumbler.”

In drawing the joints of the limbs, conſiderable difference will be found in their length, according to the degree of action they are in; thus the elbow joint, when bent inwards, lengthens the arm nearly ⅛th. The ſame occurs at the knees, and in the joints of the fingers; in the ſame manner as a hinge is extended when opened.

There is a very conſiderable difference noticeable between the joints of children before the age of 8 or 9, and thoſe of grown perſons. In the former they are ſmall and ſurrounded by fat, which gives the appearance, when they are ſtraight, of dimples in the ſurface; whereas, in men they are large, and always projecting; with nothing but ſtrong tendons about them.

When the artiſt is fully acquainted with the proportions and capabilities of action in the human figure above-mentioned, and proceeds to repreſent it either in a tranquil poſition, or in motion, he will find it requiſite to attend to the geometrical and mathematical principles on which it is conſtructed; and by which alone its acting powers, the muſcles, are directed and governed. The due equipoiſe of its parts, either for its own ſupport, or the compound admixture of the weight of other bodies, in lifting, pulling, puſhing, &c. muſt be carefully regulated, or in vain will he attempt to effect his object. The following obſervations may be found uſeful on this ſubject.

When a man is entirely at reſt, and ſtanding equally on both feet, a line drawn perpendicularly from the pit between the clavicles will fall exactly in the midway between his feet.

If he moves, ſo as to ſtand upon one foot, it will fall upon the heel of that foot.

If he raiſes one arm, it will throw as much of his body on the other ſide of the perpendicular, as is equal to the weight of, and is neceſſary to counterbalance, that arm.

If one of the legs is thrown back, the breaſt is brought forwards, ſo as equally to bring the centre of gravity of the whole frame always in the ſame relative ſituation to the parts, in every poſition in which the body can be thrown.

Thus the equipoiſe of the figure is of two ſorts, ſimple and compound. Simple, when a man acts only by and upon himſelf; and compound, when any external weight be ſuperadded; for that muſt be regarded in his actions, while ſuſpending it, as a part of his own frame: and in order to lift or ſupport it, he muſt throw as much of his own weight in a contrary direction on the central line, to that where the object is applied, as is equal to it; or it will overpower and draw him to the ground. Indeed it will be neceſſary, in lifting, to throw a larger proportion of weight or muſcular force over, or it cannot be effected.

In action, the ſame principle governs the figure. Having, by the motion forwards of one part, in walking for inſtance, removed its centre of gravity, it endeavours, in the inſtant, to recover the balance loſt, and brings up another to ſupport itſelf; and theſe actions, going on progreſſively, carry it forwards. In running, a greater impetus is given; the breaſt is thruſt farther forwards, and a quicker application of the ſupport of the limbs is required; thus, the ſlower the motion, the nearer the ſupport will be under the centre of gravity; and on the contrary, when the motion is quickened, the farther it will be removed from it.

When a man intends to ſtrike a ſevere blow, he endeavours to add the weight of his body to the force of his arm, and to effect this he draws back himſelf over the perpendicular to a conſiderable diſtance, then, ruſhing forwards while he ſtrikes, conveys his body as far on the contrary ſide.

Thus, the motions of the figure muſt be always regulated by its centre of gravity; the perpendicular of which is its centre of motion. The motion being created by the loſs of equipoiſe, or inequality of weight, will, of courſe, be more or leſs violent, accordingly as a greater or leſs proportion of the body be removed from the perpendicular.

With regard to the muſcular action of the figure, the plates of anatomy, and the deſcriptions given under that article, will ſufficiently inform the reader. Each muſcle has its individual or conjoint power and uſe. It is the artiſt's duty to ſelect, in repreſentation, thoſe which more immediately are employed in, and characterize, an action; and not to make too great a diſplay of anatomical knowledge, nor at all times, and in all the various actions of the human figure, repreſent the ſame muſcles (when ſeen) with the ſame degrees of force, that is, equally tenſe; as if their power was requiſite in every action; as is frequently the caſe among the imitators of M. Angelo. No matter how the man was employed, every muſcle throughout the frame is rendered equally prominent; and the eye and the underſtanding bewildered, in endeavouring to comprehend which part was principally in motion. But more of this when we treat of Style, in *Deſign*; ſee that article.

Human *Foſſil-remains*, in *Natural Hiſtory*. With early writers on natural hiſtory and geology, it was no uncommon thing to refer almoſt any large uncommon bones, which were met with in the earth, to giants of the human race. The pretended parts of a human ſkeleton by Scheuchzer, found in the ſlate-pit at Oningen, his anthropolith, protee, &c. are ſhewn in the Annales du Muſeum, vol. xiii. p. 411, to belong to a kind of ſalamander, and at page 198, the pretended human foſſils of Cerigo are ſhewn to be devoid of that character. After all which has been ſaid on the human bones found in the oſſeous rock of Gibraltar (Jones, Phyſ. Diſq. p. 428.), and other places in the Mediterranean and coaſt of Dalmatia, the fact of their having any of them belonged to the human race may fairly be doubted. The arm and ſkeleton of a man, mentioned by Mr. Charlton, in his Hiſtory of Whitby, p. 355, as found in the alum ſhale, were probably no ſuch thing. The tooth which Mr. Jones mentions may, if really human, have been taken from ſome church-yard, or ancient burial-place, whoſe waters were of a petrifying quality, as well as the woman's hand which he mentions, p. 427. If ſuch was not a mere deception, owing to the external form, like the pretended leg and foot of a child in black flint, which we have ſeen, that was taken out of a chalk-pit. The human tongue, or gloſſopetra of Pliny, and the human thigh of ſtone mentioned by Parkinſon, (Org. Rem. p. 16 and 21.), and the two bones of a man's foot in iron-ſtone, which Dr. Grew mentions (Rarities, p. 332.), were probably all deceptions of a ſimilar kind; and to one or other of theſe claſſes, *viz.* 1ſt, miſtaken animal remains; or, 2d, deceptive forms of mineral nodules, may, perhaps, all the ſuppoſed human relics, found imbedded in the ſtrata, be referred. A 3d claſs of human remains may be admitted with leſs heſitation, *viz.* bones found intermixed with works of art, and with circumſtances attending modern alluvial depoſits or ſoils, like the human ribs found along with a boat, under a ſtony or concreted gravelly ſtratum, near Peterſburg (Kirwan's Geo. Eſſ. p. 442.); the ſkeletons found with beads, rings, armour, coins, &c. mentioned by Mr. Whitehurſt (Inquiry 1ſt ed. p. 15.); and by many other writers, but which clearly did not belong to the ſtratified remains. A 4th claſs of human reliquia are found preſerved in peat-bogs, ſome inſtances of which are ſaid to occur in the peat-pits near Newbury (Phil. Tranſ. vol. i. p. 109.); a woman preſerved in a moſs, at Axholm, in Lincolnſhire, and a man in a moſs in Shetland (Jameſon's Shetland Iſle, p. 158.), and various ſimilar inſtances, which are to be met with. Mr. William Martin, in combating the arguments formerly adduced to ſhew that the ſuppoſed human, animal, and vegetable remains of the ſtrata were depoſited at the Noachian deluge, or by parts of its waters left in inland lakes and ſeas, obſerves (Outlines, p. 30.), "According to ſacred hiſtory, the full development of the animal kingdom, as well as the vegetable, had taken place, long before the period in which they were equally involved in one general inundation. And hence, in ſtrata ſuppoſed to have been formed by depoſitions from water left by the deluge, not only might we reaſonably expect to find vegetable and marine relics, but alſo the remains of *land animals*, of quadrupeds for inſtance, and even of *man* himſelf. For, however ſmall a proportion the deſtroyed land animals bore among the general multitude of organic bodies overwhelmed by this cataſtrophe, as they *did* exiſt, and as the bones of quadrupeds are certainly as liable to ſubſidence in water as drifted timber or other vegetable matter, they no doubt would occaſionally be met with in the ſtrata in queſtion, if ſuch ſtrata had really originated from the cauſe aſſigned in the hypotheſis. But, on the contrary, it is an indubitable fact, that neither the remains of man nor of quadrupeds have ever been found in ſtones or earths conſtituting ſtrata productive of genuine mineral coal, nor indeed as integrant parts of *any ſtrata*, excepting thoſe which are decidedly of much later formation, ſuch as we are now treating of. To a far remoter period, therefore, than the flood, muſt we recur, in any endeavour to explain or illuſtrate the agency of nature, in collecting and depoſiting the minerals of regular diſpoſed ſtrata."

HUMANA DE TOMPIERES, in *Geography*, a town of New Mexico; 63 miles S.S.E. of Santa Fé.

HUMANITY, the nature of man, or that which denominates him human.

Neſtorius would not allow the infirmities of humanity to be attributed to the Deity; nor the attributes of the Deity to humanity. See NESTORIANS.

HUMANITIES is uſed, plurally, for the *humaniores literæ*, *i. e.* the ſtudy of the Greek and Latin tongues, grammar, rhetoric, poetry, and the ancient poets, orators, and hiſtorians.

HUMAR, in *Geography*, a ſmall iſland in the Red ſea, near the coaſt of Arabia; three miles N.W. of Loheia.

HUMARES, a town of New Navarre; 120 miles S. of Caſa Grande.

HUMAS, an Indian village on the W. ſide of Miſſiſippi river, in Louiſiana, 60 miles above New Orleans. The Humas were formerly a conſiderable nation, but were reduced, about the year 1770, to about 25 warriors. The Alabamas, whoſe villages are near thoſe of the Humas, had at the ſame period about 30 warriors. The Chetemachas have about 27 warriors.

HUMAXAR, a town of South America, in the government of Tucuman, on the river Dolce; 60 miles S. of St. Jago del Eſtero.

HUMATION, HUMATIO. The moſt ancient way of diſpoſing of the dead was by humation, or interment. Pitiſc. See BURIAL.

HUMBER, in *Geography*, a river of England, or rather a large eſtuary, formed by ſeveral conſiderable rivers, and eſpecially by the Ouſe and Trent, and flowing into the German ocean, N. lat. 58° 30′. E. long. 1° 15′. Beſides the Trent, which enters the Humber after a direct courſe of about 100 miles, and which is navigable to Burton, in Staffordſhire, and the Ouſe, which runs by York, and is navigable to Rippon, the other principal rivers that iſſue into the Humber are the Dun, which runs by Doncaſter; the Aire, navigable to Leeds; and the Calder, navigable to Halifax; the Warf, navigable to Tadcaſter; the Derwent, navigable to New Malton; and the Hull. See CANAL.

HUMBER, a river of Upper Canada, in the E. riding of the county of York, which diſcharges itſelf into lake Ontario, eaſtward of the old fort Torento.—Alſo, a river of Newfoundland iſland, which runs into the gulf of St. Lawrence, through the bay of Iſlands.

HUMBERSTONE, a townſhip of Upper Canada, in the county of Lincoln, lying between Bertie and Wainfleet, and fronting lake Erie.

HUMBERT, in *Biography*, a cardinal in the 11th century, a native of Lorrain, embraced the monaſtic life in the dioceſe of Toul, in the year 1015. Here he acquired ſo high a reputation for talents and learning, that pope Leo IX. ſent for him into Italy, where he promoted him to the biſhopric of the White Foreſt. In 1049 he was raiſed to the purple by the ſame pope, who ſent him his legate to Conſtantinople, to attempt to reſtore the ancient union between the eaſtern and weſtern churches. In 1059, by the order of pope Nicholas II. he drew up the confeſſion of faith for the famous Berenger to ſign, in which he laid down the monſtrous doctrine, that "the bread and wine, after conſecration, were not only a ſacrament, but the real body and blood of Jeſus Chriſt; and that this body and blood were actually handled by the prieſts, and conſumed by the faithful, in reality and truth as other ſenſible objects are." Cardinal Humbert died after the year 1069. His works are numerous and chiefly theological. Moreri.

HUMBLE-Bee, in the *Hiſtory of Inſects*. See BOMBYLIUS.

HUMBLE-*bee*, *Baſtard*. See FAUX *bourdon*.

HUMBLE-*bee Flies*, in *Natural Hiſtory*, the name of a claſs of flies of different ſizes, but all agreeing in the great reſemblance they bear to the humble-bees, of the ſmaller or middle-ſized ſpecies. Theſe might, at firſt ſight, very naturally paſs for real humble-bees; but a cloſer examination will ſhew them not to be ſuch, as they have not the trunk of the humble-bee, and have only two wings. The ſpecies of the humble-bee fly are many of them of abſolutelydifferent genera one from another, ſome of them having trunks, and others having a diſtinguiſhable mouth. See CULEX.

If the figure of theſe flies, in their winged ſtate, attracts our curioſity and attention, their prior ſtate, that of the fly-worm, of moſt of them ought ſurely much more to do ſo. The place nature has aſſigned the worms of theſe flies for their habitation is, indeed, a moſt ſtrange one; there is no other place for them to live in under this form, to begin their deſtined growth, and be fitted for their transformations, but in the inteſtines of horſes, or under the thick and firm ſkin of oxen. In the latter caſe, the worm hatched from the egg of its parent fly, depoſited there, makes the tumour in the places which alone furniſhes it with food and habitation, and in the middle of which it has a place to breathe. See HIPPOBOSCA.

It is not an invariable law of nature, however, that all the worms of the humble-bee flies are to feed on animal ſubſtances; for we find ſome delighted with vegetable food, and particularly one which loves none but the bulbous roots of flowers. Reaumur's Hiſt. Inſ. vol. iv. p. 497, &c.

HUMBLE-*Plant*, in *Gardening*. See MIMOSA.

HUMBLED, in *Rural Economy*, a term that is frequently applied to neat cattle and ſheep, in order to denote their being hornleſs.

HUMBOLDTIA, in *Botany*, ſo named by Vahl, who had firſt denominated it *Batſchia*, in honour of the celebrated traveller and botaniſt Von Humboldt. "Vahl. Symb. faſc. 3. 106." Willd. Sp. Pl. v. 1. 1147.—Claſs and order, *Pentandria Monogynia*. Nat. Ord. *Lomentaceæ*, Linn. *Leguminoſæ*, Juſſ.

Eſſ. Ch. Calyx in four deep ſegments. Petals five. Legume oblong, compreſſed.

1. H. *laurifolia*. (Batſchia laurifolia; Vahl. Symb. faſc. 3. 39. t. 56.)—Native of Ceylon. A *tree* with jointed, zigzag, hollow branches. *Leaves* abruptly pinnate, of four or five pair of ſtalked, ovate-oblong, pointed, entire leaflets. *Stipulas* double; the outer ones horizontal, half arrow-ſhaped; the inner ovate, pointed, erect, much the largeſt. *Cluſters* of many flowers, axillary, ſolitary, or in pairs. *Willdenow*.

HUME, DAVID, in *Biography*, an eminent hiſtorian, was born at Edinburgh in 1711. He was the youngeſt ſon of a man of good family, who died while David was in his infancy, ſo that his education was entruſted to his mother. He diſplayed, at a very early period, a great love for literature, which became his predominant paſſion. His patrimony was too ſlender to permit him to follow his inclinations without ſome view to profit, and he attempted to gain ſome commercial employment at Briſtol. In a few months he found that kind of buſineſs totally unſuitable to his genius, and went to France with the intention of proſecuting his literary purſuits in a country retreat, reſolving to ſupply by economy his pecuniary deficiencies. He reſided firſt at Rheims, but chiefly in Anjou, and paſſed three years very agreeably in that kingdom. In 1737 he came to London, and in the end of the following year publiſhed his "Treatiſe on Human Nature," which he had compoſed during his reſidence in France. Mr. Hume's ardent paſſion for literary fame received a ſevere mortification from the neglect attending his firſt publication, which "fell dead-born from the preſs, without reaching ſuch diſtinction as even to excite a murmur among the zealots." He did not deſpair, but proceeded in his ſtudies, and in 1742 printed his "Eſſays, Moral, Political, and Literary." Theſe were ſo favourably received as to make the author amends for his former diſappointment. In 1745 he received an invitation from the young marquis of Annandale to come and live with him in England. This connection laſted but a ſingle year, when he ſtood forward as candidate for the profeſſorſhip of moral philoſophy in the univerſity of Edinburgh, and was powerfully ſupported by perſons of conſideration and high rank. He was, however, unſucceſsful. General St. Clair, in 1746, nominated him his ſecretary in an expedition deſigned for Canada, but which ended in an attack upon the French coaſt. In 1747 he attended the general, in the ſame ſtation, upon a military embaſſy to the courts of Vienna and Turin. On his return, he re-publiſhed his piece on human nature, with alterations, under the title of "An Enquiry concerning the Human Underſtanding." It was ſcarcely more ſucceſsful in this form than it had been before, but his other works were beginning to attract notice, and make their way rapidly. In 1752 he publiſhed his "Political Diſcourſes," which were received with immediate approbation. In the ſame year his "Enquiry concerning the Principles of Morals" was publiſhed, which he conſidered as the beſt of all his writings, but which met with little notice. He obtained, in 1752, the appointment of librarian to the Faculty of Advocates in Edinburgh, which afforded him the command of a large and curious collection of books. It was this circumſtance which ſeems to have inſpired him with the idea of becoming an hiſtorical writer, as it was probably his local ſituation which ſuggeſted to him, as his firſt ſubject, the "Hiſtory of England under the Houſe of Stuart." The firſt volume, containing the reigns of James I. and Charles I. appeared in 1754, which was furiouſly aſſailed from all quarters, on account, as he thought, of what he had ſaid in defence of the earl of Strafford; but it was probably owing to his undiſguiſed contempt for all religions, of which he recognizes but two ſpecies, ſuperſtition and enthuſiaſm. This work was ſo completely neglected as well as decried, that, had not a war broken out between England and France, he would probably have retired to ſome provincial town of the latter kingdom, have changed his name, and for ever renounced his country. The ſecond volume of his hiſtory, compriſing the period from the death of Charles I. to the Revolution, appeared in 1756, and was received much better than the firſt had been. With this encouragement he publiſhed his hiſtory of the houſe of Tudor in the year 1759, which excited againſt him a renewed portion of rancour. His reputation as an hiſtorian continued to gain ground, ſo that he was induced to go back to the earlier periods, and write down to the point at which his laſt work had commenced. Theſe two additional volumes appeared in 1761, and his hiſtory of England thenceforth became a ſtandard book, read by all, at home and abroad, who wiſhed to take a compendious and intereſting view of the Engliſh affairs. The reſearches of Mr. Hume into the origin of the conſtitution are not remarkable for depth or accuracy; and he ſeems too ready to admit the idea that the liberties of the country are of modern date, and were ſo many forced conceſſions from the ſovereigns. In his hiſtory of the Tudors and Stuarts there ſeems a manifeſt deſign of exaggerating the deſpotiſm of the former, in order to lighten, by compariſon, the uſurpations and high pretenſions of the latter. His ſtyle is clear, lively, ſometimes eloquent, always agreeable, though not unfrequently careleſs and incorrect. The money which Mr. Hume obtained for the copy-right of his hiſtory, joined to a conſiderable penſion granted him by the crown as a literary man, had now ſecured him an independence, with which he intended to retire to his native country, but in 1763 he received an invitation from the earl of Hertford to attend him on an embaſſy to Paris. This he accepted; and his character as a writer and philoſopher being well known in that capital, procured him an exceſs of attention and civility, with which he was highly delighted. He remained at Paris as "Chargè d'affaires," after the departure of lord Hertford in 1765, and did not return to England till 1766, when he brought with him the celebrated Rouſſeau, who, having excited perſecutions againſt himſelf in every country near him, was induced to ſeek for an aſylum in the only true land of liberty. Mr. Hume's conduct towards his friend was extremely kind and generous; but ſo capricious was the temper of Rouſſeau, that he fancied all the world was leagued againſt him, and betrayed ſuch groundleſs and unworthy ſuſpicions as finally diſſolved their friendſhip. In 1767 Mr. Hume accepted the office of under-ſecretary of ſtate, which he held under general Conway till the reſignation of that miniſter in 1769. He then retired to Edinburgh, expecting to enjoy a comfortable old age by means of the friends, the reputation, and opulence which he poſſeſſed. In that northern metropolis he drew around him a choſen circle of ſuitable aſſociates, with whom he lived upon eaſy and very familiar terms. He died in 1776. The account which he has given of his laſt illneſs is as follows: "In ſpring, 1775, I was ſtruck with a diſorder in my bowels, which at firſt gave me no alarm, but has ſince, as I apprehend it, become mortal and incurable. I now reckon upon a ſpeedy diſſolution. I have ſuffered very little pain from my diſorder; and what is more ſtrange, have, notwithſtanding the great decline of my perſon, never ſuffered a moment's abatement of my ſpirits, inſomuch that were I to name a period of my life which I ſhould moſt chuſe to paſs over again, I might be tempted to point to this later period. I poſſeſs the ſame ardour as ever in ſtudy, and the ſame gaiety in company. I conſider, beſides, that a man of 65, by dying, cuts off only a few years of infirmities; and though I ſee many ſymptoms of my literary reputation's breaking out at laſt with additional luſtre, I knew that I could have but few years to enjoy it. It is difficult to be more detached from life than I am at preſent." The account of his own life, of which the foregoing is an extract, was dated the 18th of April 1776, and he gradually grew worſe till Auguſt the 25th, when he died, in the 65th year of his age. His character has been drawn by Dr. Adam Smith: "He was one," ſays he, "concerning whoſe philoſophical opinions men will, no doubt, judge variouſly, every one approving or condemning them according as they happen to coincide or diſagree with his own, but concerning whoſe character and conduct there can ſcarcely be a different opinion. His temper indeed ſeemed to be more happily balanced, if I may be allowed ſuch an expreſſion, than that perhaps of any other man I have ever known. Even in the loweſt ſtate of his fortune, his great and neceſſary frugality never hindered him from exerciſing, upon proper occaſions, acts both of charity and generoſity. It was a frugality, founded not upon avarice, but upon the love of independence. Upon the whole, I have always conſidered him, both in his life-time and ſince his death, as approaching as nearly to the idea of a perfectly wiſe and virtuous man as perhaps the nature of human frailty will permit." To this picture, drawn by the pen of friendſhip, we may add the obſervations of a very judicious biographer. "We may," ſays he, "reaſonably demur to Dr. Smith's moral eſtimate, in attributing the perfection of virtue to a man whoſe leading principle was, by his own confeſſion, ſelfiſh (the acquiſition of literary fame), and who never ſeems to have made any of thoſe ſacrifices of intereſt and inclination to public good, in which virtuous action chiefly conſiſts. Further, whatever degree of freedom of diſcuſſion may be juſtifiable, with the benefit of mankind in view, it may be doubted whether a mere fondneſs for ſpeculation, or a love of philoſophical applauſe, will morally excuſe a writer for ſporting with opinions which are commonly held of the higheſt importance to human welfare." Two of his poſthumous works were publiſhed after the death of Mr. Hume, *viz.* "Dialogues concerning Natural Religion;" and "Eſſays on Suicide." The latter contain ſome of his moſt obnoxious principles, conveyed in the moſt offenſive form. See Hume's account of his own life, and Dr. Smith's letter prefixed to the 8vo. edition of the Hiſtory of England 1789. Gen. Biog.

HUMEA, in *Botany*, ſo named, by the writer of the preſent article, in juſt commemoration of the late right hon. lady Amelia Hume, ſiſter of the preſent earl of Bridgewater, and wife of ſir Abraham Hume, bart. who firſt raiſed this plant in England, and communicated it to him. Her ladyſhip for many years cultivated ſucceſsfully, and ſtudied ſcientifically, a fine collection of plants, at her ſeat at Wormleybury, Herts, and was always diſtinguiſhed by the liberality with which ſhe imparted to others her acquiſitions or diſcoveries. She departed this life, admired and beloved by all who knew her, in September, 1809, and is interred at Wormley.—Sm. Exot. Bot. v. 1. 1. (Calomeria; Venten. Jard. de la Malmaiſ. 73.)—Claſs and order, *Syngeneſia Polygamia-æqualis.* Nat. Ord. *Compoſitæ Diſcoideæ*, Linn. *Corymbiferæ*, Juſſ.

Gen. Ch. *Common Calyx* of numerous, imbricated, obovate, obtuſe, concave, coloured, pointleſs ſcales, the outer ones ſmalleſt and gradually more diſtant. *Cor.* compound, uniform, tubular, of very few florets, whoſe proper corolla has a cylindrical tube, and a bell-ſhaped limb, with five revolute ſegments. *Stam.* Filaments five, capillary; anthers united into a pentagon, with five ſharp teeth. *Piſt.* Germen oblong, glandular; ſtyle cloven; ſtigmas ſpreading, capitate. *Peric.* none, except the permanent ſcarioſe calyx. *Seed* oblong, without any crown or wing. *Recept.* very ſmall, glandular.

Eſſ. Ch. Receptacle minute, glandular. Down none. Calyx looſely imbricated, membranous, pointleſs. Florets about three. Anthers awned.

1. H. *elegans.* Sm. Exot. Bot. t. 1. (Calomeria amaranthoides; Venten. Jard. de la Malmaiſ. t. 73.)—Native of New South Wales, not far from Port Jackſon, from whence we received ſpecimens amongſt the firſt plants ſent from that country in 1791.

The *root* is biennial. *Stem* herbaceous, five or ſix feet high, erect, panicled, round, filled with ſpongy pith, and rough (like the leaves) with ſhort rigid viſcid pubeſcence. *Leaves* alternate, ſeſſile, lanceolate, acute, from ſix to twelve inches long, ſlightly waved at their edges, and claſping the ſtem by their heartſhaped baſe, of a full green colour on both ſides, and furniſhed with a midrib, with copious reticulated veins; the upper leaves gradually diminiſh into bracteas of a ſmall lanceolate figure. *Panicle* drooping and widely ſpreading, of innumerable ſmall pendulous flowers, on capillary branched ſtalks. The florets are tipped with violet; the calyx is of a more or leſs deep roſe-colour, crimſon, or browniſh red, ſometimes white. The whole plant is fragrant, like red cedar wood, or the hautboy ſtrawberry, but too ſtrong to be agreeable if much handled. It is raiſed on a hotbed, and planted out for flowering.

The name *Calomeria* is a pun upon the word *Buonaparté,* from καλος, *fair* or *good,* and μερις, a *part,* and is, in every reſpect but its harmony, truly inſufferable, eſpecially as there is a plant already called, ſomewhere or other, *Buonapartea;* there is alſo a *Napoleona* and a *Joſephinia* for thoſe who deſire them; the laſt being certainly well merited, and perhaps the leaſt exceptionable of all.

HUMECTATION, formed of *humor, moiſture, moiſtening,* in *Pharmacy,* the preparing of a medicine, by ſteeping it awhile in water, in order to ſoften and moiſten it when too dry; or to cleanſe it, or prevent its ſubtle parts from being diſſipated in grinding, or the like.

Humectation is alſo uſed for the application of moiſtening remedies.

HUMERALIS, in *Anatomy,* a name frequently given to the artery and vein of the arm.

HUMERUS, or Humeri os, the bone of the upper arm. See Extremities.

Humerus, *Fracture of the.* See Fracture.

Humerus, *Luxation of the.* See Luxation.

Humerus *of Birds.* See *Anatomy of* Birds.

HUMFRE, in *Geography,* a cape on the E. coaſt of the iſland of Guernſey.

HUMID, Humidum, *moiſt.* The ſchool philoſophers make water the *primum humidum,* the firſt of humid bodies, and the cauſe or principle of humidity in others; which are more or leſs moiſt, as they partake more or leſs of this element.

HUMIDITY, Moisture; the quality or power of wetting or moiſtening other bodies.

Modern writers conſider humidity as a particular ſpecies of fluidity; and define it a fluor, which, being applied on a ſolid body, adheres to, and communicates the quality to other bodies. Others, ſomewhat more accurately, call humidity the power whereby a body moiſtens another; but what that power is they do not ſhew.

But of this we are certain, humidity is only a ſort of relative mode. So far as the component particles of a fluid, compared with reſpect to the pores and particles of other bodies, or the texture thereof, are apt and diſpoſed to enter thoſe pores, or ſtick to thoſe particles, ſo far is that fluid humid: on the contrary, ſo far as there is a repugnance or incongruity between the particles, &c. in reſpect of ſuch bodies, the fluid is not humid.

Thus quickſilver is not moiſt in reſpect to our hands or clothes, and other things, which it will not ſtick to; but it may be called humid, in reference to gold, tin, or lead, to whoſe ſurfaces it will preſently adhere, and render them ſoft and moiſt. Even water itſelf, which wets almoſt every thing, and is the great ſtandard of moiſture and humidity, is not capable of wetting all things; for it ſtands or runs off in globular drops from the leaves of cabbages, and many other plants; and it will not wet the feathers of ducks, ſwans, and other water-fowl.

Add, that the texture alone may cauſe the fluid to be humid, as is plain, in that neither quickſilver, lead, nor biſmuth alone will ſtick upon glaſs; yet being mixed together, they will form a maſs that will do ſo; as appears from ſuch a compoſition being frequently uſed in foliating looking-glaſſes. See Cohesion, Fluid, and Hygrometer.

HUMIDUM Radicale, or *Radical Moiſture,* in the pathology of the ancient philoſophers, a ſuppoſed principle in the animal economy, which, together with the *radical heat,* was eſſential to life, or conſtituted the vital energy. The principle being altogether gratuitous, different notions were formed concerning it by different writers; and ſome confeſſed that they did not underſtand what was meant by theſe terms. See Sennert. lib. i. cap. 5. De Calido innato et Humido radicale. Fernel, lib. vi. cap. 4. entitled. "Humidi primigenii, quod tum caloris tum ſpiritus ſubjecta eſt materia, demonſtratio."

HUMILIATI, a congregation of religious in the church of Rome, eſtabliſhed by ſome Milaneſe gentlemen on their releaſe from priſon, where they had been confined under the emperor Conrad, or, as others ſay, under Frederick I. in the year 1162. This order, which acquired great wealth, and had no leſs than ninety monaſteries, was aboliſhed by pope Pius V. in 1570, and their houſes given to the Dominicans and Cordeliers, for their luxury and cruelty.

HUMILIATION, the act of humbling, *i. e.* of abating a perſon's pride, and bringing him lower in his opinion.

In this ſenſe, humiliation ſtands diſtinguiſhed from mortification: humiliation brings down the mind; mortification ſubdues the fleſh.

HUMILIS Musculus, in *Anatomy,* a name mentioned by Caſſerius, as given by ſome people of his time to one of the muſcles of the eye, the rectus inferior of Fabricius, and deprimens of Riolan: it is the depreſſor oculi of Albinus, being one of the quatuor recti muſculi oculorum of that author. See Eye.

HUMILITY, in *Ethics,* is a virtue conſiſting in the moderate value which a perſon puts upon himſelf, and every thing relating to him. Or, more particularly, it conſiſts in not attributing to ourſelves any excellence or good which we have not; in not over-rating any thing which we have or do; in not taking an immoderate delight in one's ſelf; in not aſſuming more of the praiſe of a quality or action than belongs to us, and in a lowly ſenſe and acknowledgment of our imperfections, errors, and ſins. This virtue expreſſes itſelf in the modeſty of our appearance, of our purſuits, and of our behaviour towards other men. It is diſtinguiſhed from affectation, baſhfulneſs, and meanneſs.

HUMISUGA, the *Ground-ſucker,* in *Natural Hiſtory,* the name of a fly, ſo called, becauſe it is ſuppoſed to live by ſucking the juices of the earth, without taking in any ſolid food. It has a browniſh or dun body; a white ſpot at the inſertion of the wings, and another at the head; the legs are black; the back is grey, with four ſullied white lines running longitudinally; the wings are ſilvery, and, if put into water, they ſhine with a bright light like that of the glow-worm. This creature is common with us about path-ways, on mole-hills, and in other places where the ground is newly turned up. We call it the *path-fly.*

HUMMEL's Town, in *Geography,* a thriving town of America, in Dauphine county, Pennſylvania, containing a German Lutheran church, and about 90 houſes, on the S. ſide of Swetara creek; 100 miles W.N.W. of Philadelphia.

HUMMET, The, a ſmall iſland in the Engliſh Channel, near the N.E. coaſt of the iſland of Guernſey.

HUMMING-Bird, in *Ornithology.* See Trochilus.

HUMMOCK, in *Geography,* a ſmall iſland in the Eaſt Indian ſea; 15 miles S. of Mindanao. N. lat. 5° 24'. E. long. 126° 37'.

Hummock *Point,* a cape on the N. coaſt of the iſland of Celebes, ſo called by captain Carteret in 1767, who ſuppoſed it to be the ſame with that which is alſo called "Stroomen Point." N. lat. 1° 20'. E. long. 121° 39'.

Hummock, in *Geology*, is a term introduced by Dr. William Richardſon (Phil. Tranſ. 1808.) to denote an important claſs of iſolated *Hills* (ſee that article), and patches of ſtrata, which are compoſed of piles of ſtrata, known in the neighbourhood, but entirely detached from the continuous part of ſuch ſtrata, owing to the intervening ſtrata having been carried away, or *abrupted*, as the doctor called it, a phenomenon which had been previouſly noticed and deſcribed by Mr. Farey, and called *Denudation*. (See that article in our work, and the Phil. Mag. vol. xxxiii. p. 258.) Dr. Richardſon very aptly compares a hummock to one of thoſe dead-men, buoys, &c. which labourers, employed to move ground by meaſure, leave in different parts of the ſpace they have excavated, in order to mark the original height of the ſurface in that place. The following are the names of curious baſaltic hummocks which Dr. Richardſon has particularized in the north of Ireland; ſome of them being iſolated, and higher knowls on the tops of hills and mountains, and others of them conical or groteſque knowls, in valleys or low tracts, which are equally the ſcite of hummocks in denudated diſtricts; *viz.*

Altabrian, on the Derry mountains, hemiſpherical.

Clogher rock, near Buſhmills, a ſmall cone or knowl, ſtratified like the hummock of Dunmull.

Doland's hill hummocks, near Glennuller vale and Mayole vale.

Dunmull, 3 miles S.E. of Portruſh, on a high ridge, cylindrical, like Fermayle and Clogher rock.

Fermayle, on the Derry mountains, cylindric and flat at top, like Dunmull.

Knock Loughran, near Maghera.

Liſanoure, one mile E. of the town.

Magilligan, on the top of the mountain, irregular.

M'Art's Caſtle, on Cave-hill façade, irregular.

Sconce, on the Derry mountains, hemiſpherical.

Slemiſh, 23 miles S.E. of Portruſh, on the ridge, very large, with a flat top.

Mr. Farey has given an ample liſt and account of the hummocks in and near Derbyſhire, in the 1ſt vol. of his "Report to the Board of Agriculture," to which we muſt refer. The curious hummocks of ſand-ſtone at Andernach, in Bohemia, and others near Tunis, reſembling ruins, alſo at Namaquas, in Southern Africa, and on the banks of the Wolga, are noticed in our article Fletz, where they are ſuppoſed, but not perhaps on ſufficient ground, to be peculiar to a particular rock, or ſtratum, inſtead of occurrences peculiar to the ſtrata of certain diſtricts, however various, as in Derbyſhire they appear to be.

The *partial tract* of William Martin, (Outlines, addenda, p. iii.) "under which the ſtrata conſtituting the ſurrounding tract are obſerved to dip," includes our hummocks on the tops of hills, or iſolated knowls in vallies or plains, whoſe nearly horizontal ſtrata baſſet or ſhew their edges on all ſides, and alſo the *Baſin* or Swilleys (ſee that article) of coal and other ſtrata, which are often met with, dipping towards a central point or line, and baſſeting or riſing to the ſurface round the circumference of ſuch ſwilleys: of the latter character, ſome of the depreſſed hummocks of the Derbyſhire Report partake, as Darley-flaſh, Goyte-moſs, and Shallcroſs, of the ſecond coal-ſhale; Combes-moſs of the firſt coal-ſhale; Wardlow-mines of the lime-ſtone ſhale; Peak Foreſt town of the third lime, &c. The accurate diſcrimination of tracts of ſtrata, in conducting mineral ſurveys, ſeem of the utmoſt importance to the progreſs of geological ſcience, as well as to the proceſſes of the miner, collier, &c.

Hummock, a term uſed by *Navigators* to expreſs circular and elevated mounts, appearing at a diſtance.

HUMMUDNAGUR, a town of Hindooſtan, in Bahar; 45 miles S.S.W. of Patna.

HUMOR, or Humour. See Humour.

Humor, in *Geology*, was introduced by M. de Luc, "Elementary Treatiſe on Geology," p. 55, and defined to mean water, not as a compound of hydrogen and oxygen, but as an elementary ſubſtance of the globe, diſtinct from the forms of water, ice, (or cryſtallized water,) or ſteam: ſuppoſing, ſays he, that "in its primitive ſtate, when nothing of what we now obſerve upon the earth was produced, nor as yet diſpoſed to be produced, this ſubſtance (humor) was neither water, nor ice, nor agua: its elementary particles were intermixed with all thoſe to which they are at preſent united by affinity, in the different bodies with which we are acquainted; and thoſe particles, then acquiring liquidity by their union with fire, and thus immediately entering into all the aſſociations, to which its numerous affinities gave birth among elementary ſubſtances, produced the *Primordial* Liquids; which ſee.

HUMORAL Pathology, that pathology, or doctrine of the nature of diſeaſe, which attributes all morbid phenomena to the diſordered condition of the fluids, or *humours*, of the body, and attempts to explain the progreſs and changes of diſeaſes by certain fermentative or digeſtive operations in the *humours*.

In many of our articles in *medicine* we have had occaſion to allude to the *humoral pathology* as the foundation of many opinions and peculiar modes of practice, which a more accurate pathology has confuted and exploded. It would be a fruitleſs labour to enter into a minute detail of all the abſurd ſpeculations reſpecting the morbid changes in the fluids of the body, which have been ſucceſſively adopted, from the time of Galen downwards: for, not only the followers of Galen, but all thoſe in modern times who have diſſented from his opinions, and have transferred the doctrines of chemiſtry and of mechanics to the phenomena of the living body, have, nevertheleſs, admitted the changes of the fluids into their ſyſtems, as the principal cauſes of diſeaſe, and as the foundation for explaining the operation of medicines: nay, even after the peculiar property of living bodies, (the faculty of irritability, excitability, ſenſorial power, or nervous energy, as it has been variouſly denominated,) which is reſident in the nervous ſyſtem, came to be viewed as a principal agent in the production of diſeaſe, and in the reſtoration of health, according as it is influenced by morbific cauſes, or by ſalutary impreſſions; or when, as Hoffmann firſt maintained, (Medicin. Rational. Syſtem. tom. iii. § 1. chap. 4.) the affections of the living ſolids came to be admitted as the moſt probable grounds of diſeaſe, and as affording a more rational explanation of morbid phenomena, than the diſordered conditions of the fluids; ſtill a humoral pathology was received, and combined with theſe opinions, to a conſiderable extent. Dr. Cullen himſelf, who advanced far beyond Hoffmann in his appeal to the agency of the living ſolids, occaſionally refers to certain ſuppoſed "acrimony of the fluids," as the eſſence of ſome diſeaſes: and it was in the ſyſtems of Brown and Darwin that all conſideration of the changes of the humours, as the origin of diſeaſe, was firſt rejected, and every morbid condition was referred to the agency of that power, the nervous energy, which diſtinguiſhes the living body from dead matter. (See Excitability and Irritability.) But the doctrines of the older phyſicians continue to be, in a great meaſure, the prevailing opinions of the vulgar, if not of the generality of unprofeſſional perſons, and even of a great number of routiniſts in the profeſſion.

We ſhall, therefore, briefly ſtate the principles of thoſe doctrines, and ſhew the futility of the arguments on which they reſt.

The four elementary humours of Hippocrates and Galen, namely, *pituita*, or phlegm, blood, bile, and black bile (melancholia), were received as the principles of all the animal fluids and ſolids, conſtituting by their due proportion the health of the body, and by their *intemperies*, or undue proportion, the varieties of diſeaſe, until the time of Paracelſus. This bold and conceited chemiſt, who ſet up for a reformer of all philoſophy, renounced the ſyſtem of Galen, denied the exiſtence of the four humours, and contended that diſeaſes were not produced by humours, but that humours originated from diſeaſe. At the ſame time he promulgated a ſyſtem of his own, uſing a jargon which is not very intelligible, and to which it may be queſtioned whether either himſelf or his followers ever attached any clear ideas. He adopted the notion of three elementary ſubſtances, to which he applied the appellations of *ſalt*, *ſulphur*, and *mercury*, with Baſil, Valentine, and others; but theſe terms were employed in new acceptations, about which the chemiſts were not altogether agreed. They are to be conſidered, it would appear, as general expreſſions of ſome faculty or property, which they communicate. Thus mercury appears to repreſent the principle of fluidity, ſulphur that of inflammability, and ſalt that of ſolidity. According to Severinus, one of the followers of Paracelſus, "*ſalt* gives conſiſtency, ſolidity, or coagulation to things; *ſulphur* imparts a fat oleaginous quality, which tempers the conſiſtency of the ſalt; and *mercury* gives fluidity to both, and facilitates their mixture." And Quercetanus, another writer of that ſchool, ſays that things receive their various taſtes from *ſalt*, their odours from *ſulphur*, and their colours from both theſe, but moſt chiefly from *mercury*. (See Sennert. Tract de Conſenſu et Diſſenſu Galenicorum et Peripatet. cum Chymicis. cap. 11.) They ſpeak alſo of animal ſulphur, vegetable ſulphur, and mineral ſulphur; of animal ſalt, vegetable ſalt, &c.; ſo that it is obvious theſe were merely gratuitous and hypothetical expreſſions, which every one might uſe according to his own fancy, and which led to every ſpecies of abſurdity. When they treat of the origin of diſeaſes, this abſurdity is manifeſt throughout. Paracelſus lays down two genera of diſeaſe, one of which he calls, in barbarous language, *iliaſtrum*, the other *cagaſtrum*; the former including thoſe diſorders which grow "from ſeed, like apples and nuts," ſuch as dropſy, jaundice, &c.; the other thoſe which ariſe "from corruption, ſuch as fevers, the plague, &c." (Paracelſ. Labyrinth. Medic. err. cap. 11.) We ſhould conſider our time, and that of our readers, as loſt in examining the minutiæ of this ſyſtematic jargon. If curioſity ſhould impel any one to inveſtigate the ſubject, he may peruſe the various writings of Paracelſus himſelf, or Scheunemann's "Hydromantia Paracelſica," and "Medicina reformata;" as well as Quercetanus's "Hermeticæ Medicinæ Defenſio," the works of Oſwald Crollius, of Petrus Severinus, &c. Sennertus has attempted to refer the jargon of theſe chemiſts to the Galenical doctrines, from which, where it is intelligible, it ſeems to differ more in appearance than in eſſence: for it ultimately refers diſeaſes to various conditions of the humours, which are eſtimated by the appearances and ſenſible qualities of the excretions and diſcharges, changing only the terms by which they are deſignated. (Loc. cit. cap. 16.) See GALENICAL *Syſtem*.

As the ſtudy of chemiſtry advanced, and its various operations and products were inveſtigated, pathologiſts began to modify the doctrines of Galen generally, and, laying aſide the four humours of that writer, they deſignated the various humours, connected with different ſtates of diſeaſes, according to analogous properties, fancied or real, in theſe morbid humours, and in the ſubſtances with which chemiſtry had made them acquainted. Thus we find the writers of the 17th century ſpeaking of mucilaginous acid, vitriolic, tartarous, alkaline, corroſive, and acrid humours, of a ſaline, putrid, rancid acrimony, &c.; (ſee ſir J. Floyer's "Preternatural State of Animal Humours deſcribed by their ſenſible Qualities, &c.") and likewiſe attributing much to the agency of the *ſpirits*, or animal ſpirits, which they ſeem to have conſidered as a ſecretion from the brain, communicated through the canals (as they were ſuppoſed to be) of the nerves, and conſtituting the moſt "exalted" portion of the animal humours. Our countryman, Willis, ſubſtituted this term for the *mercury* of Paracelſus, and ſpeaks of the *ſalt*, *ſulphur*, and *ſpirits*, as the three principal elements of the humours, to which he likewiſe adds *earth* and *water*. (Willis, Diatriba de Fermentatione, cap. 2. et de Febribus, cap. 1.) The humours of Galen, he contends, are not parts of the blood, but its recrements; the blood, properly ſo called, being the ſame in every part of the body, and the *pituita*, bile, and black bile, being the impurities thrown off by it, by means of a ſort of efferveſcence or fermentation. In like manner, he obſerves, in the caſe of the fermentation of wine or porter, the lighter parts aſcend to the top, forming the *flos* or yeaſt, and the thicker parts fall to the bottom, in the ſhape of dregs or tartar, leaving the liquor clear; yet no one, he ſays, could correctly affirm, that wine or porter is compoſed of yeaſt, tartar, and a vinous liquor.

But whatever notions pathologiſts have at different times adopted, in regard to the number and qualities of the elementary principles of the humours, they have all agreed in explaining the phenomena of diſeaſes, by a certain inteſtine proceſs, which has been variouſly compared to digeſtion, fermentation, efferveſcence, or ebullition, by which the humours were ſuppoſed to be purified, in conſequence of the expulſion of the offending matter. The ancients conſidered this depuratory proceſs as analogous to that of the digeſtion, or concoction (as they termed it) of the food in the ſtomach. For as the various ſubſtances, taken into the ſtomach for the purpoſes of nutrition, became gradually converted, by the proceſs of concoction, which was carried on by the innate heat, into a bland homogeneous fluid, the chyle, which was abſorbed by the meſenteric veſſels for the nouriſhment of the body, while the dregs or fæces were carried off by the bowels, and diſcharged; in like manner they ſuppoſed that when the blood was in a ſtate of *intemperies* or *dyſcraſy*, the conſtitution was excited to febrile action, during which a ſort of concoction, or digeſtive proceſs, was carried on, and the blood, being thus depurated, the morbid humours were diſcharged by ſome of the uſual excrementitious paſſages, the bowels, the bladder, the veſſels of the ſkin, &c. When this diſcharge, whether a diarrhœa, a ſediment in the urine, a profuſe perſpiration, &c. took place, a *criſis* was ſaid to occur; and the purpoſe of the febrile commotion having been effected, the conſtitution ceaſed from its inordinate action, and health was reſtored. (See CONCOCTION and CRISIS.) Theſe diſcharges, with which it was obſerved that fevers often terminated, were conſidered as the proofs of the exiſtence of the morbid humours in the blood, and of the origin of the febrile commotion, which continued while they were retained in the body, and ceaſed when they were expelled.

After the revival of learning, when chemiſtry had made ſome advances, the proceſs of *fermentation* was more commonly aſſumed, as explanatory of the nature of febrile diſeaſes. The phyſicians of the 17th century, Willis, Floyer, and others, referred all the phenomena of acute diſeaſes to this ſource; and Sydenham acknowledges a great analogy in the two proceſſes, yet remarks that the analogy is not perfect, and therefore prefers the term *commotion* to that of *fermentation* or *ebullition*, which other writers employ. (See his Obſ. Med. § 1. cap. 4.) It is to be remarked, however, that the term “fermentation,” in the acceptation adopted by Willis, ſignifies every ſpecies of chemical action, combination, or change, as well as the operations of animal and vegetable nutrition and growth, by which unorganized matter is aſſimilated with living bodies. See his Diatriba de Fermentatione.

During the 17th century, then, or rather from the latter part of the 16th century, nearly to the time of Dr. Cullen, the proceſs of *fermentation* was conſidered as conſtituting the eſſence of all febrile diſeaſes: and as fermentation, in regard to the production of vinous liquors, is excited commonly by ſome ferment introduced for that purpoſe, ſo a ferment was ſuppoſed to have found its way into the blood, when the animal ſyſtem was excited into a febrile fermentation or commotion; and thus the blood was depurated, and the peccant matter expelled, or ſeparated, like the dregs of wine. This ferment, or *cacochymia*, was accounted for in various ways by different pathologiſts: but we may collect, on the whole, that they maintained the notion of two principal internal ſources of *cacochymia*, namely, improper *food*, and imperfect *ſecretion* from the different glandular organs. Fernelius remarks, “Omnis enim cacochymia et humorum impuritas aut ex vitioſa viſcerum affectione, aut ex improba vivendi ratione, non aliis ex cauſis, proficiſcitur;” for, he adds, when the ſtomach, liver, ſpleen, and neighbouring organs, are diſeaſed, either by *intemperies* or organic diſorder, they produce humours, ſimilarly diſeaſed, even from pure and temperate aliment; and, when the food is immoderate, heavy, glutinous, or corrupted, it cannot be ſo wholly and perfectly changed by digeſtion, as not to carry ſome of its crude or unwholeſome qualities with it to the blood and other humours. (See Fernel. Febr. Curand. Methodus Generalis, cap. 2.) In like manner, Willis obſerves, “Atque hujuſmodi motus (nimirum ſanguinis verè inteſtinum bellum) dependet tum à partium ipſius ſanguinis heterogenitate, tum à variis fermentis, quæ à viſceribus cruoris maſſæ inſpirantur.” (Diatr. de Feb. cap. 2.) It may be remarked, by the way, that in thus referring ſome of the morbid humours to the viſcera, they ſeem to admit, though unintentionally, the primary action of the ſolids in the production of diſeaſe. In general, however, they looked to the concoction or fermentation of the aliment into chyle, as the ſource of the cacochymia; and ſir John Floyer conſiders all the internal variations of the humours as originating from a *defective* or *exceſſive* degree of the fermentation by which nutrition is carried on. “If the chyle be rightly fermented, all the humours ariſing from it are rightly prepared; but if the fermentation of that is vitiated, all the other humours, produced from vitiated chyle, retain a tincture of its defect in their preparation. This fermentation, by which the chyle and blood are prepared, may be depraved both ways, for it may be depreſſed under its natural ſtate, or exalted above that degree, which is ſuitable to the natural temper of any animal; of both of which errors, and the cacochymias depending on them, I ſhall next diſcourſe.” (Loc. cit. p. 34.) He then informs us that if the animal humours are digeſted or fermented “to any degree *below* their natural ſtate, ſome of the cold cacochymias are produced.” Among theſe he enumerates a mucilaginous or pituitous, a tartareous or acerb, a flatulent, and a ſerous ſtate of the humours. If the chyle be *over-fermented*, or digeſted *too much*, “it becomes bitter, acrid, rancid, or putrid;” it alſo produces a viſcid ſtate of blood, which occaſions pain and inflammations, and ſhews itſelf in the *ſizineſs* of blood that is drawn in inflammatory diſeaſes; as well as “a ſalt acrimony, which corrodes and eats the gums, infects the ſkin with ſpots, and is the hot ſcurvy.” (Ibid.) Theſe various ſpecies of cacochymia, then, are deemed *ferments*, by which the blood is excited to violent fermentative commotions, or fevers. But there are other diſeaſes, “which depend wholly on an outward ferment received into the fleſh, as in hydrophobia,” or ariſe from the poiſon of ſerpents, or from “the touch of a ſalt humour to which the morphews, ſcab, pox, and ſcald-head are referrable, and leproſy;” and “all malignant fevers, as the ſmall-pox, meaſles, and plague, or peſtilential fevers, have their original from the malignity of the air, and the poiſonous ſulphurs of the earth.” (Floyer on Preternat. State of Humours, p. 15.) In like manner, Sydenham aſcribes all epidemic diſeaſes to a ferment, poiſon, or peccant matter, introduced into the blood by reſpiration, the air inſpired being impregnated with this poiſon, either from the bowels of the earth, or from ſome peculiar influence of the planets:—while he attributes ſporadic febrile diſeaſes to the particular ebullition or inflammation of the blood, occaſioned by the peculiar *intemperies* of individuals, which he ſeems to impute chiefly to the influence of external temperature, and to errors in diet, and the other *non-naturals*. Sydenham, De Morbis Epidem. chap. 2. and Tractat. de Podagra.

From whatever ſource theſe *cacochymiæ*, or peccant humours originate, they are conſidered as inimical to the well-being of the body; in conſequence of which enmity, nature, or the ſuppoſed preſiding principle of the conſtitution (which has been variouſly perſonified by different writers, under the titles of *Archeus*, *Autocrateia*, *Anima medica*, &c.) begins a conteſt, in order to expel from the blood this intruſive peccant matter. “Reaſon informs us,” ſays Sydenham, “If I have any judgment, that a diſeaſe is nothing elſe than a ſtruggle of nature, labouring with all her might to expel the morbific matter for the health of the patient.” And, he remarks, in another place, “the inordinate commotion of the blood, which is the cauſe or concomitant of continued fever, is excited by nature, either for the purpoſe of ſeparating ſome heterogeneous matter, contained in and offenſive to it, or in order that the blood may be ſomehow or other altered in its diatheſis.” (Loc. cit. cap. 4.) Willis, Floyer, and others, view the ſubject in the ſame light, except that they introduce the *ſpirits* as the agents employed by nature, for the purpoſe of exciting the commotion in the blood. “A fever,” ſays Floyer, “is a preternatural fermentation or efferveſcence of the blood, occaſioned by ſome ferment irritating the ſpirits of the blood and nerves, for the diſſolving, or putrefying, and ſeparating ſome part of the cacochymical *ſuccus nutritius* from its mixture with the maſs of humours. (P. 210.) According to the peculiar nature of the cacochymia, or morbific humour, the nature of the fever was ſuppoſed to vary. “It is evident that every perſon has ſome antecedent cacochymia,” ſays the ſame writer, “by which the particular ſymptoms of the fever are produced, &c.—The ſeveral ſtages of the diſeaſe are very naturally deſcribed by the ſeparation of the greater or leſs quantity of the ſuccus nutritius from the blood, in the increaſe of the fever, and the *criſis* is a full or perfect ſeparation of all the depraved ſuccus nutritius from the maſs of blood, when the fever is curable, and then the febrile efferveſcence ceaſes; but if the ſuccus nutritius be but in part ſeparated, the maſs of humours remains turbid and undepurated, and the fever becomes fatal.” (Floyer, chap. 15. App. i. of Fevers.) When this morbific matter, inſtead of being thrown out by the excretions, as in the caſe of critical diſcharges by diarrhœa, turbid urine, or ſweats, is

“ evacuated upon particular parts, it produces the ſeveral inflammations; as quinſies, apoplexies, lethargies, palſies, pleuriſies, rheumatiſms, colics, which are the ſymptoms of the ordinary intermitting fever, and diſtinguiſh it into its ſeveral ſpecies.” Ibid.

But as *acute,* or febrile diſeaſes, which terminate in a ſhort time, (*e. g.* within the compaſs of fourteen or twenty-one days,) were conſidered as reſulting from this active fermentation, and depuration of the humours; ſo, according to Sydenham, all *chronic* diſeaſes, which run through a long and indefinite period, ariſe from an imperfect digeſtion or fermentation of the offending humours, and the conſequent inability of nature to expel them. “ For when any perſon has on the one hand, the principles of his nature debilitated or worn out, whether by old age, or by great and continual errors of the non-naturals, particularly in reſpect to food and drink; or, when, on the other hand, the organs of ſecretion have been ſo far weakened, as to be unable to depurate the blood, by carrying off its excrementitious and ſuperfluous parts; in theſe caſes, a greater quantity of humours is accumulated than the powers of the individual are capable of digeſting or concocting, which humours, in conſequence of their detention, undergo various degrees of fermentation and putrefaction, until at length they aſſume ſpecific properties, and, according to the variety of depravation, give riſe to various forms of diſeaſe. They alſo fall upon particular parts, which are more diſpoſed to receive them according to their peculiar qualities; and thus ultimately produce the long trains of ſymptoms, which are deſignated by the names of certain diſeaſes, and which vary in relation to the nature of the morbid humour, and to the morbid condition of the part, reſpectively.” Sydenham, Tractat. de Podagra.

It may be inferred, from the long and extenſive prevalence of this humoral pathology, that it was not founded on mere fancy; but that ſomething like ſound obſervation and eſtabliſhed facts could be adduced in ſupport of it: and we have already hinted, that the common occurrence of certain profuſe or altered excretions, towards the termination of febrile diſeaſes, was deemed concluſive evidence of the truth of the hypotheſis. But the doctrine was apparently ſtrengthened ſtill more, where there occurred not a mere increaſe of the ordinary excretions, but the diſcharge of a new and preternatural humour, altogether uncongenial with the healthy blood. Thus, when a tumour formed in any particular part, from the ſuppoſed ſettling of the peccant matter there, an inflammatory commotion or fermentation took place, in conſequence of which, as the morbid matter became concocted, an abſceſs was formed, and the *pus* or *ſanies,* which was at length diſcharged from it, was deemed a proof of the exiſtence of the morbid ferment. In this way the buboes, which occur in the plague,—the abſceſſes in the different glandular, membranous, and muſcular parts,—the eruptions in the ſkin in ſmall-pox, meaſles, &c.—the formation of chalk-ſtones, after inflammatory gout,—and the expectoration of purulent and mucus ſputa, in conſequence of inflammation in the lungs and bronchial paſſages,—all theſe phenomena were believed to be concluſive proofs of the correctneſs of the humoral theory. And a ſtill ſtronger proof appeared to exiſt in the well-known fact, that in ſmall-pox, the plague, &c., the matter thus diſcharged was as completely a *ferment,* when received into the healthy humours of another perſon, as barm or yeaſt, introduced into a caſk of infuſion of malt or grape-juice. But this was not all: a ſort of ocular demonſtration of the exiſtence of a morbid humour in the circulating fluids appeared to be deduced from the condition of the blood, which was drawn from perſons labouring under inflammatory diſeaſes; and which, when it had cooled, exhibited a thick, tenacious *ſize* upon the ſurface of the coagulum, which has been called the *buff* or *buffy-coat* of the blood, and is not found on blood taken away, when no fever is preſent. Some collateral evidence was likewiſe deduced from other phenomena of diſeaſes, and eſpecially from the occaſional occurrence of what is termed a *metaſtaſis,* or the ſudden tranſlation, as it were, of a diſeaſe from one part of the body to another. As this was moſt commonly obſerved to take place between an external and internal part (as the gout, for inſtance, diſappearing on the foot was transferred to the ſtomach;—or when an eruption faded on the ſkin, and vomiting or diarrhœa ſucceeded in the alimentary canal); ſo it was concluded, that the efforts of nature to expel the morbific matter had either been too feeble, or had been counteracted by improper treatment, and that the matter had fallen back upon the internal organs, where it excited the new ſtruggle of nature to get rid of it by another channel.

This hypotheſis, however, which is founded upon a coarſe and vulgar analogy between a merely chemical proceſs, and the operations of the living body, could only remain plauſible, ſo long as the nature both of chemical combinations and of the properties of the animal economy had been the ſubject of very limited inveſtigation: upon a more accurate inquiry, we find the points of analogy do not exiſt. The various changes, which take place in the fluids of the living body, do not occur from mere chemical action, as in the caſe of fermentation of the elementary parts upon each other; but ariſe from ſome peculiar action of the veſſels, through which they circulate. Thus, the veſſels of the liver alone elaborate the blood into bile; thoſe of the kidnies form the urine; and thoſe of the teſtes produce the ſeminal liquor. No admixture of the parts of the blood, in any other ſituation, is capable of generating theſe peculiar humours. In a ſimilar manner, the morbid humours are the reſult of certain inordinate and irregular action of the veſſels of particular parts. Thus, when any organ is in a ſtate of inflammation, which, in fact, conſiſts in an undue diſtention and activity of its veſſels, the *pus,* or other matter, which is formed in conſequence, is *generated in the inflamed part,* is the *effect* of the inflammatory action, and is not brought by the circulating blood, and depoſited there, to be the *cauſe* of the inflammation. In ſmall-pox, for example, or meaſles, the contagious matter is not found circulating with the maſs of blood, but is *generated* by the action of the *veſſels of the ſkin,* where alone it appears; if it contaminated the circulating maſs, it would, doubtleſs, be depoſited in the internal parts: but no puſtules were ever found in theſe diſeaſes, in any of the viſcera or internal organs. No ſuch change, as that occaſioned by a ferment, therefore, takes place. This is farther proved by the fact, that by augmenting the action of the cutaneous veſſels, on any particular part of the ſurface, (as by the application of heat, or any ſtimulating ſubſtance); on that particular portion, the quantity of puſtules, in ſmall-pox, will be augmented, and *vice verſâ.* In a word, it appears that, as neither bile, urine, nor ſaliva, is found circulating in the blood, ſo neither is the matter of contagious diſeaſes exiſting there: juſt as in the diabetes *mellitus,* when the kidnies are conſtantly throwing out large quantities of ſaccharine matter, no traces whatever of ſugar, or its elements, can be detected by the chemiſt in the circulating blood.

On the other hand, the inference drawn from the *ſizy cruſt,* which is found upon the coagulum of blood, drawn under the circumſtances of fever, is incorrect. For that *ſize* is ſimply the fibrin or coagulable lymph, which conſtitutes a part of the blood under all circumſtances, and which ſhews itſelf apparently more or leſs according to the leſs or greater rapidity of coagulation; which again is influenced by the force or rapidity of the action of the veſſel from which it flows, or by its manner of flowing: inſomuch that if the blood be received into different veſſels, during the ſame bleeding, the buffy coat will appear on ſome, and not on the others. It may be likewiſe added, that many fevers terminate in health, where no *criſis* or ſenſible diſcharge has preceded recovery.

With regard to the argument deduced from the occurrence of *metaſtaſis*, little can be inferred from it in ſupport of any poſition: the fact is very difficult of explanation by any hypotheſis. It is at leaſt equally eaſy, and conſiſtent with our knowledge of the animal economy, to refer the tranſition of morbid *action* to the communication of certain internal and external parts by nervous ſympathy; as to conceive that a morbid *matter* is mechanically transferred, through the medium of the circulating maſs of fluids, from one organ to another. The exiſtence of a morbific matter is hypothetical; whereas the exiſtence of a ſympathetic connection, through the medium of nerves, is a matter of obſervation and experiment: of which the connection between the ſkin and the alimentary canal may be mentioned as an example. If we excite nauſea or vomiting in the ſtomach, we induce a perſpiration on the ſkin; and by moiſtening the ſurface, we ſpeedily relieve the ſenſation of thirſt, &c. Beſides, there is no proof of the actual tranſlation of the morbid matter, or the ſame form of diſeaſe in caſes of *metaſtaſis*: for, to inſtance gout, we do not find the chalky matter of the hands or feet appearing in the ſtomach, when the diſeaſe is transferred to that organ, but what is inflammation on the ſurface, is commonly ſpaſm in the ſtomach; and, on the principle of nervous ſympathy, the identity of the diſeaſes, thus excited in diſtant parts, is not a neceſſary ſuppoſition.

The arguments for the contrary doctrine, which refer the phenomena of life, whether in a ſtate of health or diſeaſe, to the agency of the nervous energy or ſenſorial power, reſident in the living ſolids, and to the various action of the moving fibres, have been deduced from a long ſeries of obſervations and experiment. See LIFE, EXCITABILITY, &c.

The pernicious reſults of the practice, however, to which this humoral pathology led its advocates, afford an additional refutation of its principles. The doctrine, that nature inſtituted all morbid actions, for the purpoſe of expelling from the conſtitution certain offenſive and dangerous matter, either conduced, on the one hand, to ſanction a very feeble and inert practice, leſt the ſalutary operations of nature ſhould be impeded or deranged; or, on the other, to enforce an active practice, by which it was intended to aid and co-operate with nature in her ſuppoſed two-fold endeavours, firſt to concoct or duly ferment the morbific matter, which annoyed her, and ſecondly, to expel it by the proper emunctories. Of theſe two practical ſyſtems, the firſt, or *la medécine expectante*, as the French have emphatically called it, is, doubtleſs, the leaſt miſchievous. It conſiſted in doing nothing, with the appearance of doing ſomething; and, therefore, obtained the confidence of the patient, and tranquillized his mind, which conſtitutes one ſtep towards a cure. The remedies conſiſted of what have been termed demulcents, diluents, humectants, &c. or aqueous liquors, with various vegetable mucilages, ſugars, and ſtarches, all abundantly harmleſs in their qualities, and certainly not interfering with any proceſs of the conſtitution, whether ſalutary or deleterious. But if this be the higheſt reach of the medical art, (which, indeed, is rather the rejection of all art,) to what purpoſe have the ſtudies of ſcientific men been directed, the ſtructure and functions of the human body been inveſtigated, and a particular claſs of mankind devoted to the practice of medicine? *La medécine expectante* is ſurely the weakeſt of all empiriciſm.

It has always been a popular doctrine, and it is one that carries a great deal of plauſibility in the face of it, that the main object, and the ſum total of the powers of medicine, conſiſt in aiding the natural efforts of the conſtitution for the removal of diſeaſes. But this propoſition requires conſiderable qualification. If it be merely meant, that medicine can only operate through the medium of the powers or energies of the living body, and that, independently of theſe vital energies, medicine has no operation, the poſition is a *truiſm* which cannot be queſtioned. But if it be meant, that the ſole power and object of the medical art are limited to the furthering of all morbid excitement, and to the removal of obſtacles to the completion of the purpoſes of that excitement: *i.e.* to aſſiſting the efforts of nature or guarding them from interruptions, the aſſertion appears to be altogether gratuitous, and nothing leſs than an abuſe of language. In the firſt place, it is founded on the aſſumption, that all diſeaſed action is ſalutary; which the effects of numerous diſeaſes directly contradict, and which has no better foundation than two other gratuitous aſſumptions, namely, the exiſtence of a morbid ferment in the blood, and of an *archeus*, or rational ſoul, governing all the operations of the animal economy. But, ſecondly, admitting the ſalutary tendency of diſeaſed actions, conſidered as the efforts of nature, by what ſigns are we to interpret her intentions, or to diſcover when ſhe requires aſſiſtance, and when reſtraint? On this point the greateſt practical errors are likely to be committed, and have, in fact, been conſtantly and extenſively committed, by thoſe humoral pathologiſts, who have preſumed upon their knowledge of the intentions of nature. Had they been unbiaſſed obſervers of nature's indications, they would have attended, probably, to the ſuggeſtions of thoſe ſenſations and inſtinctive feelings in the ſick, which are generally deemed ſufficient directions to the healthy, and which appear to be the univerſal guides to the phyſical conduct of the whole animal creation. They would have allowed the thirſty to drink, the hot to be cooled; and would have attempted to relieve the various painful ſenſations, according to the cravings which they ſuggeſted. But their practice was commonly the very reverſe of this: for they deduced their inferences, not from theſe unequivocal guides, but from their *hypothetical* conceptions of the proceedings of nature. Their own proceedings, therefore, were directed to encourage the increaſe of the diſeaſe. Thus in all fevers, even in thoſe where there was conſiderable inflammatory affection of the whole ſkin, (as in ſmall-pox,) they accumulated the heat of the patient, already almoſt intolerable, with a view to perfect the fermentation or concoction, which they ſuppoſed nature was labouring to accompliſh; and hence they rendered mild fevers ſevere, and ſevere ones certainly fatal. At the ſame time, they ſtimulated the action of the heart and arteries, by cordial, volatile, and aromatic medicines, and by heat conveyed internally in the drink, and thus ſtill farther multiplied the evil. And it was particularly unfortunate for the patient, and for medicine, that this augmentation of the original diſeaſe, (as in the increaſe of the eruption in ſmall-pox, ſcarlet fever, &c.) and even the actual excitement of new diſeaſes, (as in the miliary eruption over the ſkin, which this heating practice frequently produced in all fevers,) were conceived by theſe pretended interpreters of nature, to be nothing leſs than new and ocular proofs of the truth of their doctrine, and of the efficacy of their practice! They had *brought out* the morbid matter! But the multitudes who periſhed notwithſtanding this happy event, but too fully demonſtrated that both nature and art were guilty of perpetual miſtakes. The ſagacious Sydenham, although under the influence of the humoral pathology, detected the fallacy of the heating and concocting practice, in reſpect to the cure of ſmall-pox, while his contemporaries continued to be the ſlaves of hypothetical error. But it remained for the preſent age, not only to eſtabliſh the practice, which he ſuggeſted, but to extend it to all febrile diſeaſes, and to purſue it to a degree far beyond any conception which he had formed upon the ſubject.

It cannot be doubted, that one of the greateſt improvements ever made in the medical art, is the diſcovery of the circumſtances, under which a free application of *cold* may be made in febrile diſeaſes, aided by the early uſe of purgatives, and the removal of every other ſpecies of irritation on the living ſolid, which conſtitute what has been called the antiphlogiſtic plan of treatment. For the eſtabliſhment of this practice, in regard to the free uſe of cold, upon clear and philoſophical grounds, we are principally indebted to the late Dr. Currie of Liverpool. So far from experiencing any injury or danger from not encouraging the ſuppoſed concoction, or from repelling the morbid matter, it is aſcertained, by innumerable obſervations, that it is moſt ſalutary to reduce the temperature of the ſurface of the body, in the height of the eruptive fever of ſcarlatina, for inſtance, and that this otherwiſe formidable diſeaſe may be thus cut ſhort in its duration, mitigated in its ſeverity, and conducted mildly to a ſafe termination. (See Cold, *as a remedy:* alſo Heat, Fever, and *Scarlet* Fever.) In a word, it is now aſcertained, that that practice, in febrile diſeaſes, which is founded on the principle of removing or diminiſhing the excitement of the ſenſible and irritable ſolids, and thus of leſſening the increaſed action of the veſſels, generally and locally, without any reference to a peccant ſtate of the humours, is attended with a degree of ſucceſs, not to be compared with that of the humoral pathologiſts; and that man is more correctly treated as a being poſſeſſed of ſenſorial powers, than as a barrel of fermenting fluids.

It were unneceſſary to enter into other practical abſurdities of the humoraliſts; ſuch as the frequent letting of blood, even in chronic diſeaſes, upon the ſuppoſition that the morbific matter, which is believed to contaminate the whole circulating maſs, ſhould be all diſcharged with the ſmall portion of this fluid, that eſcapes through the orifice made by the lancet, and leave the remaining maſs thoroughly depurated;—the uſe of purgatives on the ſame principle:—the interdiction of purgatives in the early ſtage of febrile diſeaſes, becauſe the peccant matter is ſuppoſed to be yet in a crude or unconcocted ſtate;—and laſtly, the numberleſs farragos of uſeleſs and inert herbs, mixed together upon ſome fanciful notion of their properties for correcting various modifications of *cacochymia*, which they conſtantly preſcribed in chronic maladies; the qualities both of the bane and antidote, the morbid humour and its corrector, being equally gratuitous and hypothetical.

We have ſaid nothing on the ſubject of that humoral theory, which referred diſeaſes to the two oppoſite conditions of the fluids, the *acid* and the *alkaline* cacochymia, upon which Boerhaave and ſome others reaſoned with conſiderable ingenuity: for this doctrine was never generally received; and, except in ſo far as the contents of the ſtomach and firſt paſſages exhibited a tendency to one or other of theſe qualities, according to the modifications of indigeſtion, it is obviouſly founded in miſapprehenſion: (ſee Boerhaave, Praxis Medica, vol. i. p. 122. et ſeq.) and further, as Dr. Cullen remarks, it is not conſiſtent with what Boerhaave himſelf has delivered elſewhere. (Firſt Lines, pref. p.xxx.) The doctrine of a *ſpontaneous gluten* in the blood, inculcated by that celebrated author, (*loc. cit.* p. 145.) is alſo gratuitous. Some of the proofs adduced for its exiſtence are manifeſtly founded on a miſtake with reſpect to what has been called the buffy coat, or inflammatory cruſt; and the many examples given by Boerhaave of a *gluten* appearing in the human body, are all of them nothing more than inſtances of collections or concretions, found out of the courſe of the circulation.

To conclude with the words of Dr. Cullen, although the fluids of the human body may undergo various changes, we muſt "maintain that the nature of theſe changes is ſeldom underſtood, and more ſeldom ſtill is it known when they have taken place; that the reaſonings concerning them have been, for the moſt part, purely hypothetical; have therefore contributed nothing to improve, and have often miſled, the practice of phyſic. In this, particularly, they have been hurtful, that they have withdrawn our attention from, and prevented our ſtudy of, the *moving powers* of the animal ſyſtem, upon the ſtate of which the phenomena of diſeaſes do more certainly and generally depend." Firſt Lines, pref. p. xxxii.

HUMORISTS, *gli* Humoristi, the title of a celebrated academy of learned men at Rome. See Academy *of Humoriſts*.

HUMOROSI, the name of an academy eſtabliſhed at Cortona in Italy.

The Humoroſi of Cortona muſt not be confounded with the Humoriſti of Rome.

HUMOUR, or Humor, in its general ſenſe, ſignifies the ſame as liquor, or liquid.

Humour, in *Medicine*, is applied to any fluid part of the animal body, as to the blood, bile, mucus, ſerum, ſaliva, &c. as well as to the pus, ſanies, &c. which reſult from diſeaſe. The ancient phyſicians, and after them the moderns down to a late period, conſidered health and diſeaſe as ariſing from a due proportion or diſproportion of *four* humours in the body; namely, of blood, phlegm, yellow bile, and black bile. (See Galen.) This doctrine, reſpecting the origin and nature of diſeaſes, as dependent altogether on the ſtate of the *humours* of the body, has been denominated the Humoral *Pathology*; which ſee.

Humours *of the Eye*. Anatomiſts and opticians diſtinguiſh three particular humours of the eye (ſee Eye); which they call the aqueous, cryſtalline, and vitreous.

Theſe three humours have each their ſhare in the refraction of the rays of light neceſſary to viſion.

Authors, both ancient and modern, ſpeak of the regeneration of the humours of the eye; and give us inſtances of their reproduction, when, by any accident, they had been let out; but their inſtances, ſtrictly conſidered, generally go no farther than to the aqueous and vitreous humours.

Borri only, in a letter to Bartholine, ſays as much of the cryſtalline. He affirms, that he has ſlit the pupil of the eye of divers animals, and ſqueezed out all the humours, even the cryſtalline, and has afterwards perfectly reſtored them again to ſight; and that the eyes of the birds, whereon the operation had been performed, inſtead of being damaged thereby, were rendered more lively and vigorous than uſual. He adds, that he had performed the ſame experiment on divers perſons, with ſo much ſucceſs, that there remained not the ſmalleſt appearance of a cicatrix in the eye. See Cataract.

Humour is alſo uſed, in *Dramatic Poetry*, for a ſubordinate ſpecies of what the critics call manners.

Humour is uſually looked on as peculiar to the Engliſh drama, at leaſt our comic poets have excelled therein, and carried it beyond thoſe of any other nation; and our's is, perhaps, the only language that has a name for it. The nature of ſuch a free government as our's; and that unreſtrained liberty which our manners allow to every man, of living entirely after his own taſte, afford full ſcope to the diſplay of ſingularity of character, and to the indulgence of humour in all its forms. Hence comedy has a more ample field, and can flow with a much freer vein in Britain than in France, where a much greater uniformity has been ſpread, at leaſt in former times, over the outward behaviour and characters of men, by the influence of a deſpotic court, ſubordination of ranks, and the rigid obſervance of the forms of politeneſs and decorum. As to our Engliſh dramatiſts, who does not acknowledge the tranſcendent excellence of Shakſpeare in the province of humour? Of the later comic writers, Congreve has an exuberance of wit, but Farquhar has more humour. It has been obſerved, however, with too much truth, that, to the diſcredit of our ſtage, as well as of the national delicacy and diſcernment, obſcenity has too often in Engliſh comedy been made to ſupply the place of wit, and ribaldry the place of humour. It ſhould be acknowledged at the ſame time, that a conſiderable reformation has taken place in this reſpect.

Humour is uſually conſidered by critics as a fainter or weaker habitual paſſion peculiar to comic characters, as being chiefly found in perſons of a lower degree than thoſe proper for tragedy.

Every paſſion may be ſaid to have two different faces; one that is ſerious, great, formidable, and ſolemn, which is for tragedy, and another that is low, ridiculous, and fit for comedy; which laſt is what we call its humour.

Wit only becomes few characters; it is a breach of character to make one half the perſons in a modern, or indeed in any comedy, talk wittily and finely; at leaſt at all times, and on all occaſions. To entertain the audience, therefore, and keep the dramatic perſons from going into the common, beaten, familiar ways and forms of ſpeaking and thinking, recourſe is had to ſomething to ſupply the place of wit, and divert the audience, without going out of character; and this end is attained by humour; which therefore is to be looked on as the true wit and humour.

A very good judge, the duke of Buckingham, makes humour, to be all in all; wit, according to him, ſhould never be uſed, but to add an agreeableneſs to ſome proper and juſt ſentiment, which, without ſome ſuch turn, might paſs without its effect.

Humour, or *continued wit*, in *Oratory*, is a certain ſprightlineſs and vivacity of thought, which runs through a diſcourſe, and ſhews itſelf in agreeable images, beautiful turns, and a facetious manner of expreſſion, ſuited to the ſubject, and affecting the hearers with pleaſure and delight, though not to that degree as to excite laughter, or any great emotion of the paſſions.

The nature and efficacy of humour are unravelled by Dr. Campbell, in his "Philoſophy of Rhetoric," in the following manner. A juſt exhibition of any ardent or durable paſſion, excited by ſome adequate cauſe, inſtantly attaches ſympathy, the common tie of human ſouls, and thereby communicates the paſſion to the breaſt of the hearer. But when the emotion is either not violent or not durable, and the motive not any thing real, but imaginary, or at leaſt quite diſproportionate to the effect; or when the paſſion diſplays itſelf prepoſterouſly, ſo as rather to obſtruct than to promote its aim; in theſe caſes a natural repreſentation, inſtead of fellow-feeling, creates amuſement, and univerſally awakens contempt. The portrait in the former caſe we call "pathetic," in the latter "humorous." The paſſion which humour addreſſes as its object is contempt; and the ſubject of humour is always character, but not every thing in character; its foibles, generally, ſuch as caprices, little extravagancies, weak anxieties, jealouſies, childiſh fondneſs, pertneſs, vanity, and ſelf-conceit. In expreſſing paſſion as it appears in the more trivial occurrences of life, we commonly uſe this term, as when we talk of good humour, ill humour, peeviſh or pleaſant humour; hence it is that a capricious temper we call humourſome, the perſon poſſeſſed of it a humoriſt, and ſuch facts or events as afford ſubject for the humorous, we denominate comical. Accordingly, the term humour is uſed to expreſs any lively ſtrictures of ſuch ſpecialities in temper and conduct, as have neither moment enough to intereſt ſympathy, nor incongruity enough to excite contempt. In this caſe humour, not being addreſſed to paſſion but to fancy, muſt be conſidered as a kind of moral painting, and differs from wit only in theſe two things; firſt, in that character alone is the ſubject of the former, whereas all things whatever fall within the province of the latter; ſecondly, humour paints more ſimply by direct imitation, wit more variouſly by illuſtration and imagery. Of this kind of humour, merely graphical, Addiſon hath given us numberleſs examples in many of the characters he hath ſo finely drawn, and little incidents he hath ſo pleaſantly related in his Tatlers and Spectators. We might remark of the word *humour*, as well as of the term *wit*, that we ſcarcely find in other languages a word exactly correſponding. The Latin *facetiæ* ſeems to come the neareſt. Thus Cicero, "Huic generi orationis aſpergentur etiam ſales, qui in dicendo mirum quantum valent; quorum duó genera ſunt, unum facetiarum, alterum dicacitatis; utetur utroque, ſed altero in narrando aliquid venuſté, altero in jaciendo mittendoque ridiculo; cujus genera plura ſunt." Orator. 48. Here one would think, that the philoſopher muſt have had in view the different provinces of wit and humour, calling the former *dicacitas*, and the latter *facetiæ*: nevertheleſs theſe two words are often confounded both by him and other Latin authors.

Mr. Pope, in the ſecond Canto of his "Rape of the Lock," has furniſhed us with an inſtance of wit and humour combined, where they reciprocally ſet off and enliven each other;

> "Whether the nymph ſhall break Diana's law,
> Or ſome frail China jar receive a flaw,
> Or ſtain her honour, or her new brocade;
> Forget her prayers, or miſs a maſquerade;
> Or loſe her heart, or necklace at a ball;
> Or whether heaven has doom'd that Shock muſt fall."

This is humorous, as it is a lively ſketch of the female eſtimate of miſchances, as our poet's commentator rightly terms it, marked out by a few ſtriking lineaments. It is likewiſe witty, for not to mention the play on words like a trope familiar to this author, you have here a compariſon of a woman's chaſtity to a piece of porcelain—her honour to a gaudy robe—her prayers to a fantaſtical diſguiſe—her heart to a trinket;—and all theſe together to her lap-dog, and that founded on one lucky circumſtance, (a malicious critic would perhaps diſcern or imagine more,) by which theſe things, how unlike ſoever in other reſpects, may be compared,

pared, the impreſſion they make on the mind of a fine lady. Hudibras abounds in all the varieties of wit, nor is his poem deſtitute of humour, exhibited in the characters of the knight and his ſquire, and more eſpecially in the conſultation of the lawyer, part iii. canto 3. But there is perhaps no book in any language, in which the humorous is carried to a higher pitch of perfection, than in the adventures of the celebrated knight of La Mancha.

Humour, ſays Dr. Campbell, when we conſider the contrariety of its effects, contempt and laughter, (which conſtitute what in one word is termed *deriſion*,) to that ſympathy and love, often produced by the pathetic, may in reſpect of theſe be aptly compared to a concave mirror, when the object is placed beyond the focus; in which caſe it appears by reflection, both diminiſhed and inverted, circumſtances which happily adumbrate the contemptible and the ridiculous.

Humour, *Cryſtalline, Diſeaſe, and Opacity of.* See CATARACT.

HUMP, in *Geology*, is applied by Dr. Townſon and others to expreſs a ſudden riſing or bump in the terreſtrial ſtrata, in ſome inſtances, called ridges, horſe-backs, &c. by practical miners. It ſeems probable, that many denudated patches of ſtrata, like the limeſtone of *Crich*, (ſee that article,) in Derbyſhire, Breedon, and Cloud's-hill, in Leiceſterſhire, Dudley Caſtle, Wren's-neſt, and other adjacent hills in or near Staffordſhire, &c. owe their origin to humps previouſly exiſting in the ſtrata, thus locally expoſed by the denudating or carrying off the thinner parts of the ſuperincumbent ſtrata, which covered theſe ſudden limeſtone hills.

Hump, *Naked, North-weſt, South*, and *South-eaſt*, in *Geography*, ſmall iſlands in the Mergui Archipelago, in N. lat. 10 23′—10 19′—10° 9′,—and 10 12′, reſpectively.

HUMPH, in *Mining*, ſignifies, in ſome parts of Scotland, a blind or foul ſort of coal, of little value.

HUMPHREY, Pelham, in *Biography*, was brought up with Blow and Mich. Wiſe, in the Chapel Royal, under Capt. Cook, who was appointed maſter of the children at the Reſtoration. When Humphrey loſt his treble voice, he was admitted in 1666 a gentleman of his majeſty's chapel, and on the death of Capt. Cook, 1672, was appointed maſter of the children. He did not, however, long fill this honourable ſtation, as he died, very much regretted, at the early age of twenty-ſeven, in 1674.

His choral compoſitions are numerous for ſo ſhort a life; as, beſides his ſeven full and verſe anthems, printed by Dr. Boyce, there are five preſerved in ſcore by Dr. Aldrich, in Chriſt-church, Oxford; and ſix in Dr. Tudway's collection, Britiſh Muſeum, that have never been printed.

As French muſic was much better known in England during the reign of king Charles II. than Italian, there are in the melody of this compoſer, and in that of Purcell, paſſages which frequently remind us of Lulli, whom king Charles pointed out to his muſicians as a model. Indeed, it is ſaid that Humphrey was ſent to Paris by the king, in order to ſtudy under Lully; and that, beſides his merit in compoſition, he was an excellent performer on the lute. Indeed, he ſeems to have been the firſt of our eccleſiaſtical compoſers who had the leaſt idea of muſical pathos in the expreſſion of words, implying ſupplication or complaint.

His anthem for three voices, "Have Mercy upon me O God," has great merit on the ſide of expreſſion, for the time in which it was compoſed, as well as harmony, in which there are ſeveral combinations that ſeem new and boldly hazarded for the firſt time, at leaſt in choral muſic.

In his verſe anthems many new effects are produced by modulation and notes of taſte and expreſſion.

The favourite interval in the melody of this compoſer is the falſe 5th, and, if it be true, as related by Dr. Boyce, that Humphrey ſtudied under Lulli at Paris, he probably acquired his partiality for this interval there, as it has long been in great favour in the ſerious French opera.

It is ſomewhat remarkable, that all the ſeven-verſe anthems which Dr. Boyce has inſerted in his collection, by this plaintive compoſer, ſhould be in flat keys; moſt of them in C and F minor, which are much out of tune on the organ by the uſual temperament of that inſtrument; however, if well ſung, theſe crude chords may add to the melancholy caſt of the compoſitions.

HUMPHREYS, Laurence, was born at Newport Pagnell, Bucks, about the year 1527. He was educated partly at Cambridge, and partly at Oxford. In 1549 he was admitted to the degree of B.A. and was elected fellow of Magdalen college, Oxford. In the year 1555 he obtained the permiſſion of his college to travel for improvement for a year, on condition that he ſhould avoid heretical company and places. This licence furniſhed him with means of withdrawing from the reach of queen Mary's perſecution, and of purſuing his religious enquiries in company with men whoſe opinions were congenial with his own. He therefore wiſely ſtaid abroad till the death of the queen rendered his return ſafe. Upon his arrival in England, he was reſtored to his fellowſhip, which had been taken from him for his diſobedience to the injunctions of the licence which had been granted him; in 1560 he was appointed the queen's profeſſor of divinity at Oxford, and in the following year he was elected preſident of his college. He ſuffered a ſhort impriſonment for refuſing to take the ſacrament in a kneeling poſture, and though he was ſoon ſet at liberty, yet he got no preferment till he ſurmounted thoſe ſcruples which amounted to non-conformity. After this he was created dean of Glouceſter, and in 1580 he was removed to the deanery of Wincheſter, which was the higheſt preferment to which he ever attained. He died in 1590. His writings are very numerous, among which the following may be noticed: "Epiſtola de Græci literis et Homeri Lectione et Imitatione:" "De Religionis conſervatione et reformatione deque primatu Regum:" "De ratione interpretandi Auctores:" "Optimates ſive de nobilitate, ejuſque antiqua Origine:" the Life of biſhop Jewel, and ſermons. Dr Humphreys was a great and general ſcholar, an able linguiſt, and a deep divine.

HUMPHRIES, John, a young Engliſh muſician of promiſing abilities, and a good performer on the violin, publiſhed, before he was twenty years of age, ſix ſolos for that inſtrument, which manifeſted more genius than experience. However, they were well received by dilettanti performers, from being natural and eaſy. His ſucceſs in that publication encouraged him to further attempts, and in the year 1728 he publiſhed, by ſubſcription, twelve ſonatas for two violins and a baſe, which had ſome originality and agreeable imitations of Corelli, that made them the delight of muſical clubs and provincial concerts in our own memory.

Humphries died about the year 1730, and left in MS. twelve concertos on Corelli's model, which were printed after his deceaſe, by Cooke, muſic-ſeller, in New-ſtreet, Covent Garden; but the more fanciful works of Vivaldi, Alberti, Teſſareni, and Albinoni, being in circulation, and the more ſolid productions of Handel and Geminiani having refined our taſte, the poſthumous work of poor Humphries followed him down the ſtream of Oblivion, unnoticed by the inhabitants of Earth.

HUMPOLETZ, in *Geography*, a town of Bohemia, in the circle of Czazlau; 8 miles S.W. of Teutſch-Brod.

HUMPPILA, a town of Sweden, in the province of Tavaſtland; 30 miles W. of Tavaſthus.

HUMULUS, in *Botany*, the Hop. This name is derived by Linnæus from *humus*, moiſt earth, ſuch as the plant in queſtion prefers; but however ingenious this explanation may be, it appears that *Humulus* originated by corruption from *Humela*, a barbarous Latin word, of one common origin with *Umula*, or *Humle*, under which appellations, or ſomething like them, the hop is known amongſt various nations of the north.—Linn. Gen. 522. Schreb. 689. Willd. Sp. Pl. v. 4 769. Mart. Mill. Dict. v. 2. Sm. Fl. Brit. 1077. Juſſ. 404 Lamarck. Illuſtr. t. 815. (Lupulus; Gærtn. t. 75.)—Claſs and order, *Diœcia Pentandria*. Nat. Ord. *Scabridæ*, Linn. *Urticæ*, Juſſ.

Gen. Ch. Male, *Cal.* Perianth of five, oblong, concave, obtuſe leaves. *Cor.* none. *Stam.* Filaments five, capillary, very ſhort; anthers oblong, burſting by a pore on each ſide, at the ſummit.

Female, *Cal.* the ſcales of a catkin, ovate, large, tubular at the baſe, each containing two flowers, and at length ſcarioſe, permanent. *Cor.* of one petal, ſmall, obtuſe, lateral, enfolding the germen of each flower on one ſide. *Piſt.* Germen ſmall, roundiſh, compreſſed; ſtyles two, very ſhort; ſtigmas long, awl-ſhaped, downy. *Peric.* none, except the permanent ſcales and corolla. *Seed* one, roundiſh, with a ſpiral embryo.

Eſſ. Ch. Male, Calyx of five leaves. Corolla none. Anthers with two pores at the ſummit.

Female, Calyx the ſcales of a catkin, two-flowered. Corolla of one petal, lateral. Styles two. Seeds ſolitary, inveſted with the corolla.

1. H. *Lupulus*, the only ſpecies of this very natural and diſtinct genus. Linn. Sp. Pl. 1457. Engl. Bot. t. 427. Mill. Illuſtr. t. 88. Bulliard. t. 234.—Native of hedges and buſhy places in a moiſt deep ſoil, in various parts of Europe, as well as in North America, bloſſoming in July. The *roots* are perennial, branching. *Stems* annual, twining, angular, rough, with deflexed prickles, leafy. *Leaves* oppoſite, ſtalked, heart-ſhaped, undivided or three-lobed, often five-lobed, ſerrated, veiny and harſh. *Footſtalks* ſtrong, angular, prickly. *Stipulas* between the footſtalks, reflexed, ovate, entire, ſmooth. *Flowers* green; the males panicled, numerous; females on a ſeparate plant, in axillary, ſtalked, ovate, drooping catkins, of an aromatic ſcent, and bitter narcotic quality.

Humulus, in *Gardening*, comprizes a well-known plant of the more hardy, twining, perennial kind; of which the ſpecies is the cultivated hop (H. lupulus.)

There are plants of this kind which bear only male flowers, that grow in long cluſters; and others which bear female flowers only, that are produced in roundiſh, ſcaly, and leafy cluſters. The latter is the ſort moſtly grown; and which is diſtinguiſhed into the early white, the long white, the oval, and the ſquare garlic hop.

The hop-plant is principally grown in gardens, for the ornament and variety which it affords by twiſting round different kinds of ſupport to a very conſiderable height.

Method of Culture.—The hop is a plant which is uſually increaſed by planting portions of the ſuckers taken from the roots of the old ſtocks. They are commonly cut ſix or ſeven inches in length, each having three or four eyes or buds to throw out ſhoots from. And ſuch as are of proper ſorts ſhould conſtantly be ſelected for this purpoſe, removing from each ſet every part of the old vine, as well as every portion that is hollowed or decayed in any way. The ſets may be planted out in the autumn in any open place where the ground is well prepared and in a mellow condition.

The hop may alſo be raiſed by laying down the young ſhoots in the ſummer ſeaſon, taking off their tops at the time the work is performed. Theſe ſoon ſtrike root, and form ſets for uſe in the enſuing ſpring. See Hop.

Hop clumps have a good effect in many caſes, in large gardens or pleaſure grounds.

HUMUS, in *Natural Hiſtory*, a term formerly uſed for the decayed vegetable and mineral mixtures, more commonly known by the name of virgin mould, and forming the ſuperficial cruſt of the earth. Parkinſon's Organic Remains, vol. i. p. 83.

HUN, in *Geography*, a town of Africa, in Fezzan; 20 miles N. of Mourzouk.

HUNARY, two ſmall iſlands near the W. coaſt of Hindooſtan; 85 miles S. of Bombay. N. lat. 18° 47′. E. long. 72° 38′.

HUNAULD, Francis Joseph, in *Biography*, an eminent anatomiſt and phyſician, was born at Chateau-Briant, in February 1701. His father was a phyſician, and practiſed at St. Malo. He ſtudied firſt at Rennes, and afterwards at Angers and Paris, and received the degree of M. D. at Rheims in 1722. On his return to Paris he ſtudied anatomy and ſurgery with great aſſiduity, under the celebrated teachers Winſlow and Du Verney, and was admitted into the Academy of Sciences in 1724. Having been honoured with the appointment of phyſician to the duke of Richelieu, he accompanied that nobleman in his embaſſy to the court of the emperor Charles VI. at Vienna, and ever afterwards retained his entire confidence, and had apartments in his houſe. On the death of Du Verney, in 1730, Hunauld was appointed his ſucceſſor, as profeſſor of anatomy in the king's garden, where he ſoon acquired a reputation little ſhort of that of his predeceſſor, and found the ſpacious theatre overflowing with pupils. Having been admitted a member of the faculty of medicine of Paris, he practiſed his profeſſion with great ſucceſs, and attracted the notice of the court. He took a journey into Holland, where he became acquainted with the celebrated Boerhaave, with whom he ever afterwards maintained a friendly correſpondence; and, in 1735, he viſited London, where he was elected a member of the Royal Society, at one of the meetings of which he read ſome "Reflections on the Operation for Fiſtula Lacrymalis," which were printed in the Tranſactions. He was cut off in the vigour of life by a putrid fever, in December 1742, being in his forty-ſecond year. The greater part of his writings conſiſt of papers, which were publiſhed in various volumes of the memoirs of the Academy of Sciences, between the years 1729 and 1742 incluſive. Oſteology was a favourite ſubject of his enquiry, and ſome of the moſt curious of his obſervations relate to the formation and growth of the bones of the ſkull. He likewiſe traced with great accuracy the lymphatics of the lungs to the thoracic duct, and the progreſs of ſome of the nerves of the thoracic viſcera. He publiſhed anonymouſly, in 1726, a critique, in the form of a letter, on the book of Petit, relative to the diſeaſes of the bones, which occaſioned ſome controverſy, and received the formal diſapproval of the academy. Hunauld had collected a conſiderable anatomical muſeum, which was eſpecially rich in preparations illuſtrative of oſteology and the diſeaſes of the bones, and which came into the poſſeſſion of the academy after his death. Eloy Dict. Hiſt. Gen. Biog.

HUNBERGS, in *Geography*, a town of Denmark, in North Jutland; 8 miles S.W. of Aalborg.

HUNDERBUHL, a town of Tranſylvania; 12 miles S. of Seheſburg.

HUNDRED, Centum, *Cent.* the number of ten times ten or the ſquare of ten.

The place of hundreds makes the third in order in the Arabic numeration.

We uſually expreſs the proportion of the profits made in the way of commerce. &c. by the hundred.

Hundred *of Lime*, a denomination of meaſure, in ſome places denoting 35, and in others 25 heaped buſhels or bags of lime.

Hundred, in denomination of weights, of books is 104lb. avoirdupoiſe = .9285715 great cwts. (112) = .8684646 long cwts. (120.)

Hundred *of Coals*, at Aſbourn, in Derbyſhire, &c. = 128lb. = 8 ſtone of 16lb. = 1.142857 great cwts. = 1.0666 long cwts.

Hundred *of Ling*, *Cod*, *&c.* = 124lb. = 1.107143 great cwts. = 1.03333 long cwts.

Hundred, *Great*, or *Standard*, = 112lb. avoirdupoiſe = 112lb. = 4 quarters = 7 ſtone (of 16lb.) = 8 ſtone horſeman's, (of 14lb.) = 14 ſtone, London (8lb.) = 14 cloves (8lb.) = 16 cloves (7lb.) = 1792 ounces avoirdupoiſe = 20,672 drams = .93333 long cwts. (120lb.) = 103lb. $2\frac{1}{2}$oz. Dutch Scotch weight. This is the legal hundred-weight of the cuſtom-houſe in London, and all the ſouthern parts of England.

Hundred, *Long*, or *Northern*, = 120lb. = $8\frac{4}{7}$ ſtones (14lb.) = 12 rationes (10lb.) = 1.0714286 great cwts. (112lb.) This is the hundred-weight legalized on all or moſt of the canals and navigable rivers in the north of England, and of the midland counties; by their acts for collecting tolls, &c.

Hundred is alſo uſed as a meaſure to expreſs a certain quantity or number of things. A hundred of ſalt at Amſterdam is fourteen tuns.

Deal boards are ſold at ſix ſcore to the hundred, called the *long* hundred. Pales and laths are counted at five ſcore to the hundred, if five feet long; and ſix ſcore if three feet long.

Hundred *Weight*, or the great hundred. See Quintal.

Hundred, *Docimaſtic.* See Centner.

Hundred, *Hundredum*, *Centuria*, is alſo a part or diviſion of a ſhire or county. It was ſo called, according to ſome, becauſe each hundred found a hundred fidejuſſors, or ſureties of the king's peace, or a hundred able men of war.

Others rather think it to have been ſo called, becauſe originally compoſed of a hundred families. It is true, Brompton tells us, that a hundred contains *centum villas*; but then Giraldus Cambrenſis writes, that the iſle of Man hath three hundred and forty-three villas. In both theſe places the word *villa* muſt be taken for a country family; for it cannot mean a village, becauſe there are not above forty villages in that iſland.

So, where Lambard tells us, that a hundred is ſo called, *a numero centum hominum*, it muſt be underſtood of a hundred men who are heads and chiefs of ſo many families. Hundreds were firſt ordained, or rather introduced, by king Alfred, the twenty-ninth king of the Weſt Saxons: "Alfredus rex (ſays Lambard, verbo *centuria*) ubi cum Guthruno Dano fœdus inierat, prudentiſſimum olim a Jethrone Moiſi datum ſecutus concilium, Angliam primus in ſatrapias, centurias, et decurias partitus eſt. Satrapiam, ſhyre, a *Scyrian* (quod partiri ſignificat) nominavit, centuriam *hundred*; et decuriam teothing ſive tienmantale; *i. e.* decemviralo collegium, appellavit; atque iiſdem nominibus vel hodie vocantur, &c." See County and Tithing.

We have already ſaid that the inſtitution of hundreds was rather introduced than invented by Alfred. For they ſeem to have obtained in Denmark; and we find that in France a regulation of this ſort was made above 200 years before; ſet on foot by Clotharius and Childebert, with a view of obliging each diſtrict to anſwer for the robberies committed in its own diviſion. Theſe diviſions were, in that country, as well military as civil; and each contained 100 freemen, who were ſubject to an officer called the *centenarius*; a number of which *centenarii* were themſelves ſubject to a ſuperior officer called the *count* or *comes*. (Monteſq. Sp. Laws. 30. 17.) And indeed ſomething like this inſtitution of hundreds may be traced back as far as the ancient Germans, from whom were derived the Franks, who became maſters of Gaul, and the Saxons who ſettled in England; for both the thing and the name, as a territorial aſſemblage of perſons, from which afterwards the territory itſelf might probably receive its denomination, were well known to that warlike people. "Centeni ex ſingulis pagis ſunt, idque ipſum inter ſuos vocantur; et quod primo numerus fuit, jam nomen et honor eſt." Tacitus de Mor. Germ. 6.

Such is the original of hundreds, which ſtill retain the name, though the juriſdiction be devolved to the county-court; ſome few excepted, which have been by privilege annexed to the crown, or granted to ſome great ſubject, and ſo remain ſtill in the nature of a franchiſe.

This has been ever ſince the ſtat. 14 Edw. III. whereby theſe hundred courts, formerly farmed out by the ſheriff to other men, were all, or moſt part, reduced to the county-court, and ſo remain at preſent; ſo that where we read now of hundred-courts, they are to be underſtood of ſeveral franchiſes, wherein the ſheriff has nothing to do by his ordinary authority, except they of the hundred refuſe to do their office. See *Hundred* Court.

If any homicide be committed, or dangerous wound given in the day-time, and the offender eſcape, the town ſhall be amerced. And if out of a town the hundred ſhall be amerced. (2 Hawk. 74.) The hundred ſhall alſo make good the damage in caſe of robbery (ſee Hue-and-Cry), cutting banks or hop-binds; burning houſes, barns, outhouſes, hovels, cocks, mows, or ſtacks of corn, ſtraw, hay, or wood; mines or pits of coal; deſtroying granaries or corn intended for exportation; deſtroying turnpikes or works of navigable rivers, &c. 1 Geo. I. cap. 5. 9 Geo. I. cap. 22. 29 Geo. II. cap. 36. 8 Geo. II. cap. 22. 10 Geo. II. cap. 32. 11 Geo. II. cap. 22. 22 Geo. II. cap. 46.

Hundred, or *Hundredum*, is ſometimes alſo uſed for an immunity or privilege, whereby a man is quit of the hundred-penny, or cuſtom, due to the hundred.

Hundred-*court.* See Court.

Hundred *Lagh*, ſignifies the hundred court, from which all the officers of the king's foreſt were freed by the charter of Canutus.

Hundred *Suit*, the payment of perſonal attendance, ordering ſuit and ſervice at the hundred court.

HUNDREDERS, or Hundredors, *Hundredarii*, are men impanelled, or fit to be impanelled, of a jury, upon any controverſy, dwelling within the hundred where the land in queſtion lies.

By the policy of the ancient law, the jury was to come *de vicineto*, from the neighbourhood of the vill or place where the cauſe of action was laid in the declaration; and therefore ſome of the jury were obliged to be returned from the hundred in which ſuch vill lay; and if none were returned, the array might be challenged for defect of hundredors. This was ſuppoſed to qualify thoſe who compoſed the jury for forming a proper judgment of the evidence adduced, as they were ſuppoſed to know before-hand the characters of the parties and witneſſes. But this convenience was overbalanced by another very natural and almoſt unavoidable inconvenience; that juries coming out of the immediate neighbourhood, would be apt to intermix their prejudices and partialities in the trial of rights. This our law has been ſo ſenſible of, that for a long time it has been relinquiſhing this practice; the number of neceſſary hundredors in the whole panel, which in the reign of Edward III. were conſtantly *ſix*, being in the time of Forteſcue reduced to *four*. Afterwards, indeed, the ſtatute 35 Hen. VIII. c. 6. reſtored the ancient number of *ſix*, but that clauſe was ſoon virtually repealed by ſtatute 27 Eliz. c. 6. which required only *two*. And ſir Edward Coke alſo (1 Inſt. 157.) gives us ſuch a variety of circumſtances, whereby the courts permitted this neceſſary number to be evaded, that it appears they were heartily tired of it. At length by ſtatute 4 & 5 Ann. c. 16. it was entirely aboliſhed upon all civil actions except upon penal ſtatutes; and upon thoſe alſo, by the 24 Geo. II. c. 18. the jury being now only to come *de corpore comitatus*, from the body of the county at large, and not *de vicineto*, or from the particular neighbourhood. See ARRAY and CHALLENGE.

HUNDREDER is alſo uſed for him who hath the juriſdiction of a hundred, and holds the hundred-court. See HEADBOROUGH.

Sometimes it is alſo uſed for the bailiff of a hundred. See BAILIFF.

HUNDREDS, in the conſtruction of reeds for weavers, denote the number of diviſions in any given length of the reed. A thorough knowledge of the adaptation of yarn of a proper degree of fineneſs to any given meaſure of reed conſtitutes one of the principal arts of the manufacturer of cloth, as upon this depends entirely the appearance, and in a great degree the durability of the cloth when finiſhed. The art of performing this properly is known by the names of *examining*, *ſetting*, or *ſleying*, which are uſed indiſcriminately, and mean exactly the ſame thing. The reed conſiſts of two parallel pieces of wood of any given length, as a yard, a yard and quarter, &c. The diviſions of the yard being into halves, quarters, eighths and ſixteenths, the breadth of a web is generally expreſſed by a vulgar fraction, as $\frac{3}{4}$, $\frac{4}{4}$, $\frac{5}{4}$, $\frac{6}{4}$, and the ſubdiviſions by the eighths or ſixteenths or *nails*, as they are uſually called, as $\frac{7}{8}$, $\frac{9}{8}$, $\frac{11}{8}$, &c. or $\frac{13}{16}$, $\frac{15}{16}$, $\frac{19}{16}$, &c. In Scotland the ſplits of cane which paſs between the longitudinal pieces or ribs of the reed are expreſſed by hundred porters or ſplits. The porter is 20 ſplits, or $\frac{1}{5}$th of an hundred. In Lancaſhire, Cheſhire, and the other manufacturing counties of England, the diviſions of the reed are different. A comparative table of the differences by which they are reduced, to the ſame ſtandard as nearly as is poſſible, that is to ſay, within one ſplit or diviſion by which the Scotch or Engliſh manufacturer may at one glance aſcertain the relation which the other modes of counting reeds bear to his own, is annexed to this article. In counting reeds by the number of hundreds in a determinate length, which is common to the manufacturers of the continent, as well as to thoſe of Scotland, different lengths are uſed for the ſtandard of fineneſs. In that part of France ſituated around Cambray, which is, or was, the principal ſeat of the cambric manufacture, the ſtandard length of a reed, by which the fineneſs of the ſplits is aſcertained, is 34 inches. In Holland, where the heavier fabrics of linen are chiefly produced, the ſtandard of meaſure is 40 inches, and in Scotland the ſtandard is 37 inches, or the Scottiſh ell. Now it is plain, that if 2000 or twenty hundred diviſions or ſplits be contained in each of theſe reſpective meaſures, thoſe which are contained in 34 inches muſt be finer and cloſer than thoſe contained in 37, and ſtill more ſo than thoſe contained in 40. For the practical purpoſes of manufacture in this country it can be of little importance to aſcertain with preciſion the relative proportions which theſe ſtandards bear to each other, but to the wholeſale purchaſer it muſt be uſeful to have ſome correct idea of the mode by which both the value and quality of the commodity which he purchaſes may be aſcertained with conſiderable preciſion merely by inſpection.

In Lancaſhire and Cheſhire a different mode is adopted both as to the meaſure and diviſions of the reed. The Mancheſter and Bolton reeds are counted by the number of ſplits, or, as they are there called, dents contained in 24$\frac{1}{4}$ inches of the reed. Theſe dents, inſtead of being arranged in hundreds, porters, and ſplits, as in Scotland, are calculated by what is there termed *bares* or *bears*, each containing 20 dents, or the ſame number as the porter in the Scotch reeds. Formerly the number of dents in a *bare* was frequently 19, a number ſo ill calculated for any eaſy arithmetical calculation, that it is difficult to conjecture the cauſes which could have ſuggeſted its adoption, unleſs we ſuppoſe that the number 19, in place of 20, was adopted to leave room for the ſhrinking-in breadth when firſt immerſed in any liquid, to which all newly woven cloth is liable. The Cheſhire or Stockport reeds again receive their deſignation from the number of ends or threads contained in one inch, two ends being allowed for every *dent*, that being the almoſt univerſal number in every ſpecies and deſcription of plain cloth, according to the modern practice of weaving, and alſo for a great proportion of the fanciful articles. The number of threads in the warp of a web is generally aſcertained with conſiderable preciſion by means of a ſmall magnifying glaſs fitted into a ſocket of braſs, under which is drilled a ſmall round hole in the bottom plate of the ſtandard, the number of threads viſible in this perforation aſcertaining the number of threads in the ſtandard meaſure of the reed. Thoſe uſed in Scotland have ſometimes four perforations over any one of which the glaſs may be ſhifted. The firſt perforation is $\frac{1}{4}$ of an inch in diameter, and is therefore well adapted to the Stockport mode of counting, that is to ſay, for aſcertaining the number of ends or threads per inch. The ſecond is adapted for the Holland reed, being $\frac{1}{200}$dth part of 40 inches. The third is $\frac{1}{200}$dth of 37 inches, and is adapted for the now almoſt univerſal conſtruction of Scotch reeds, and the fourth, being $\frac{1}{200}$dth of 34 inches, is intended for the French cambries. Every thread appearing in theſe reſpective meaſures, of courſe, repreſents 200 threads or 100 ſplits in the ſtandard breadth, and thus the quality of the fabric may be aſcertained with conſiderable preciſion, even after the cloth has undergone repeated wettings, either at the bleaching ground or dye work. By counting the other way, the proportion which the woof bears to the warp is alſo known, and this forms the chief uſe of the glaſs to the manufacturer and operative weaver, both of whom are previouſly acquainted with the exact meaſure of the reed.

Comparative Table of 37-inch reeds, being the ſtandard uſed throughout Europe, for linens, with the Lancaſhire and Cheſhire reeds, and the foreign reeds uſed for Holland and cambric.

Scotch.	Lancaſhire.	Cheſhire.	Dutch Holland.	French Cambric.
600	20	34	550	653
700	24	38	650	761
800	26	44	740	870
900	30	50	832	979
1000	34	54	925	1089
1100	36	60	1014	1197
1200	40	64	1110	1300
1300	42	70	1202	1414
1400	46	76	1295	1464
1500	50	80	1387	1602
1600	52	86	1480	1752
1700	56	92	1571	1820
1800	58	96	1665	1958
1900	62	104	1757	2067
2000	66	110	1850	2176

In the above table the 37-inch reed is placed firſt. It is called Scotch, not becauſe it either originated, or is excluſively uſed, in that country. It is the general linen reed of all Europe, but in Scotland it has alſo been adopted as the regulator of her cotton manufactures. In the table it is only compared with the neareſt Engliſh reed actually in uſe, for in moſt caſes there is ſome ſmall difference, which, however, is not material for practical purpoſes. For the Holland and cambric reeds, the exact number of ſplits or dents is given merely for compariſon, as theſe reeds are not at all uſed in Britain.

The art of proportioning the yarn to the reeds, for different fabrics, has been always regulated by the practical experience of the manufacturer, and the taſte or fancy of his cuſtomers. Some attempts have been made to reduce it to a ſtandard, and it is evidently a matter of no difficulty. Without analyzing particularly the plans which have been propoſed, and the arguments for and againſt each of them, it ſeems that the following may, in general, be taken as a good approximation.

Every ſpecies of yarn uſed in the manufacture of cloth, may be aſſumed to be a cylindrical body of ſtuff of a certain diameter. Now as the area of every circle is as the ſquare of its diameter, and as the cubical content of every cylinder is found by multiplying the area of its baſe by its height, we may reaſonably infer, that if the diameter of a thread is ſquared, and that ſquare multiplied by its length, it will give the ſolid content, and *vice verſâ*; that the ſquare root of the number which aſcertains the weight of yarn, is a ſymbol of its diameter. If this be granted, it follows, that when any particular denomination of yarn is found to produce a proper fabric of cloth when woven in a reed of any given dimenſion, the proper denomination for any other reed may be found. Or if the yarn is at hand, and the proper reed wanted, it may be found by exactly the converſe of the former analogy. Upon this hypotheſis the analogy will be

As the ſquare root of the given yarn,
Is to the given dimenſions of the reed;
So is the ſquare root of another kind,
To the dimenſions of the reed required.

But as few practical manufacturers or weavers are accuſtomed to the extraction of roots, the real deſcription of the yarn may be taken, and the reed ſquared, or multiplied into itſelf, which will give exactly the ſame reſult. It may be neceſſary to obſerve, however, in this place, that as the fineneſs of cotton yarn is aſcertained by progreſſive numbers; and that of moſt other kinds of yarn, by the weight of certain quantities, the proportion or analogy in the former caſe muſt be direct, and in the latter inverſe, becauſe a diminution of weight in a given quantity neceſſarily implies an increaſe of fineneſs. The two following examples will, it is hoped, render this ſufficiently obvious.

If a manufacturer finds, by experience, that a fabric of goods, ſuch as pleaſe his cuſtomers, is produced by weaving N 60 of cotton yarn in a reed of 1200 by the linen or Scotch reed, and wiſhes to aſcertain what deſcription of yarn he ought to employ for a web to be woven in a 1500 reed; the proportion will be

As 144, the ſquare of the 1200 reed,
Is to 60, the number of the given yarn,
So is 225, the ſquare of the 1500 reed,
To 94, the neareſt integral number by calculation.

In the converſe he would find the ſquare of the reed, and would ſtill find extraction of the root neceſſary.

But if a manufacturer of linen finds that a fabric of yarn, of any number of ounces to the ſpindle, is well adapted to a 1200 reed, and wiſhes to aſcertain the weight or denomination of yarn fit for a 1500 reed as before, his proportion muſt be inverted.

The chief objection which practical men are apt to make to the above theory of adaptation, which is perhaps the beſt that has hitherto been found, is the following. That in finer fabrics of goods it is not found to produce the deſired effect, and that experience proves, that were a practical manufacturer of cloth to adopt this rule implicitly, either his fine goods would be wanting in that ſhow and elegance which is their chief recommendation, or that his coarſe articles would be flimſy and deficient both in warmth and durability. Allowing to this objection, which is unqueſtionably well founded, in ſome reſpects, all the weight which it deſerves, the anſwer to it is very eaſy. The chief recommendations of coarſe goods are thickneſs and ſtrength, thoſe of fine goods lightneſs and elegance. Theſe are not, nor can be regulated by any exact mathematical rule, as they are much dependant on fancy. No lady would expect, in a fine dreſs, the ſtrength and durability of a ſack, nor would any miller ſtore his flour in a bag, poſſeſſing the principal requiſites of a ſieve. It is ſufficient, if the manufacturer is enabled to obtain a fair proportion for the real fabric, and this he muſt afterwards vary, to ſuit his goods to the market for which they are intended.

HUNDSHUBEL, in *Geography*, a town of Saxony, in the territory of Erzgebirge; 23 miles S.S.W. of Chemnitz.

HUNDSMARCK, a town of the duchy of Stiria, on the Muehr; 14 miles W S.W. of Jadenburg.

HUNDSRUCK, a diſtrict of Germany, between the Rhine, the Moſelle, and the Nahe; now a part of France.

HUNE, LA, a bay on the S. coaſt of Newfoundland; 90 miles E. of cape Ray.

HUNEFELD, a town of Germany, in the biſhopric of Fulda; eight miles N.N.E. of Fulda.

HUNERWASSER, a town of Bohemia, in the circle of Boleſlau; 10 miles N. of Jung-Buntzel.

HUNG-TEAP, a term applied in ſome diſtricts to a ſmall ram, in contradiſtinction to that of a *cloſe-teap*, or one whoſe teſticles are not come properly down into the cod. It is proper to attend well to theſe ſtates of male ſheep. See Ram.

HUNGARIAN Machine, in *Hydraulics*, is repreſented in *Plate* XIII. *Hydraulics*, *fig*. 1. In this figure, A A is thè ſide of a hill cloſe by the brink of the ſhaft or mine-pit B B, which is 104 feet deep below the ſurface of the ground C at the foot of the hill. In this hill is a large ſpring of water, 143 feet above thè ſurface of the ground at C (taken in perpendicular meaſure) and the ſpring affords much more water than what the ſpring D, under ground, lets into the mine.

A pipe E F G lets the water down from the ſpring in the hill, into a cloſe air-tight veſſel H that ſtands at the foot of the hill, and contains $57\frac{1}{2}$ cubic feet, or 430 gallons in wine meaſure. In this pipe is a cock *a*, which being opened or ſhut, lets the water of the ſpring run into H, or ſtops it, as occaſion requires: and in H are two cocks *b* and *c*, the uppermoſt of which is for letting air into H, and the lowermoſt for letting the water out of it.

A ſmall pipe I goes from the veſſel H on the ſurface of the ground to a veſſel K, in the bottom of the mine, and terminates in the top thereof. The veſſel is air-tight, and contains $27\frac{1}{2}$ cubic feet, or $205\frac{1}{3}$ gallons in wine meaſure, which is forced up the aſcending pipe L M, and runs off to waſte, at N, above ground. The lower end of this pipe goes down ſo far into the veſſel K, as almoſt to touch its bottom.

From this veſſel, a pipe O goes to the ſpring D under ground, which lets water into the mine, and would overflow it if the water was not forced up or raiſed from the mine through the pipe L M. The pipe O lets this water into the veſſel K when the cock *d* is turned open, and keeps back the water when the cock is ſhut,

The operation is as follows: the cock *b* being open, and the cocks *a* and *c* ſhut, and no water in the veſſel K, open the cock *d* to let the veſſel K fill with water from the ſpring in the mine. As this veſſels fills, the water will drive the air out of it, up through the ſmall pipe I into the veſſel H, and all that air will go out of the veſſel H by the open cock *b*, and then H will remain, as it was before, full of air in the ſame ſtate of denſity as the common air is on the outſide of H. When K is full of water, ſhut the cocks *b* and *d*, and open the cock *a*, to let water run down from the ſpring in the hill by the pipe E F, into the veſſel H. As the water riſes in that veſſel, the air will thereby be driven out of it, down through the pipe I, into the veſſel K: and as this air is compreſſed by the weight of the running water in the pipe E F, the compreſſed air will force all the water out of the veſſel K, up through the pipe L M, from which it will run off at N on the ſurface of the ground; and then the compreſſed air will ruſh out, after the water.

When the veſſel K in the mine is emptied of water, and the air is heard to begin to ruſh out, ſhut the cock *a* to ſtop the water from the ſpring, and open the cocks *b* and *c*: then the water that came from the ſpring will run out of the veſſel H by the cock *c*, and air will go in by the cock *b*: at the ſame time, open the cock *d* in the mine to let the veſſel K fill with water from D the ſpring in the mine; and as H empties above-ground, K will fill below it; and the air that remained in K will (by the riſing of the water in it) be driven back into the veſſel H through the pipe I.

When H is empty of water, and K full, ſhut the cocks *b*, *c*, and *d*, and open the cock *a*: then H will fill with water from the ſpring in the hill; and this water, as it riſes in H, will force the air out of H, down the pipe I, upon the water in K; and the force of the compreſſed air will drive all the water out of K, up the pipe L M, from which it will run off at N, as before.

And thus, wherever there is a ſpring in a hill, near a mine that affords more water than what flows into the mine from a ſpring under-ground; and the perpendicular height of the ſpring in the hill is greater than the depth of the mine, water may be thus raiſed from the mine, in a moſt ſimple and eaſy manner by an engine in which there are neither pumps, piſtons, nor valves: and ſuch an engine will not be liable to be out of order, nor need repairs in many years.

But as there are very few mines that have hills near them with high ſprings, water cannot then be raiſed from them in this manner; and therefore Mr. Blakey propoſed another method, which was, to make H an air-veſſel, with a pipe going from it to another veſſel in which is water, kept boiling by a fire under it, and this veſſel to have a cock to let out the ſteam occaſionally that riſes from the ſurface of the boiling water. When the cock is ſhut, the ſteam will go off from the boiler into the air-veſſel H, and drive the air out of it, down through the pipe I into the veſſel K in the mine: and the force of the air compreſſed by the elaſticity of the ſteam, will raiſe the water from K, up through the pipe L M, till K be emptied of water. Then the cock in the boiler is to be turned open, to let out the ſteam, and the cock *d* to be opened to let the veſſel K fill from the ſpring in the mine; and when it is full, both theſe cocks are to be ſhut, and the operation will go on as before.

That Blakey's ſcheme would do, the Hungarian machine puts beyond all doubt. In both of them the veſſels muſt be made very ſtrong, becauſe every part of each veſſel, equal in ſurface to the bore of the aſcending pipe L M, will ſuſtain an outward preſſure equal to the whole weight of water in that pipe. It will not anſwer for ſuch depths as the common fire-engine will, nor will it raiſe ſo much water: but it may be built for leſs than a third part of the expence, and would anſwer very well where the depth is not above a hundred feet.

Hungarian *Muſic*. There is no doubt (ſays Mr. Laborde) but that the Hungarians, in abandoning Aſia, about the ninth century, in order to inhabit Europe, made uſe of Aſiatic muſical inſtruments during their firſt year's reſidence there.

Theſe were almoſt all wind inſtruments; of which their names, that ſtill retain their Hungarian appellations, and are of that kind, is a proof. As the trumpet, *buccina*, is called *kuvt* in the Hungarian dialect, and the flute, *ſip*, &c. Other inſtruments have names, derived from other languages, as *izimlalom* ſignifies cymbalum; *orgona organum*; *trombita tuba*. All theſe words are of Greek, Latin, or German extraction, whence we conclude that the Hungarians, in quitting Aſia, had only wind-inſtruments. If they had had others, they would have had words to expreſs them. We ſee likewiſe that the pike, the bow, arrow, and ſabre, are the only arms of which the names are Hungarian, as theſe were the only arms which this people knew when they arrived in Europe: their other military weapons are expreſſed by foreign words.

Hungarian muſic remained in its priſtine ſtate of mediocrity till the reign of Corvinus, who was proclaimed king of Hungary at the age of 15, in 1458, and afterwards conquered the kingdom of Bohemia, and died at 47, in 1490.

This prince rendered Hungary equal to other countries in arts and ſciences, by his patronage and by cultivating them himſelf. The pope's nuncio, who came to Buda in 1483, to make peace between the emperor Frederic and Corvinus, in a letter to his holineſs, ſays, " the ſingers of this prince's chapel are the beſt of all thoſe I have ever heard."

Muſic was cultivated with the ſame eaſe under king Ladiſlaus VI. and Lewis II., but not with the ſame pomp, the number of the muſicians of the houſhold was conſiderably diminiſhed. It appears likewiſe by the ſtate of muſic which is ſtill preſerved, that wind inſtruments have the precedence over all others.

The Hungarians, like all people not quite civilized, had tunes without time or key, to which they ſung their coarſe national ballads without harmony; however, though almoſt all uncultivated people love high tones and noiſy muſic of a light and vulgar caſt, the Hungarians preferred ſoft ſounds and ſlow meaſures: which has rendered their muſic more of the feminine than the maſculine gender. And we ſtill ſee among the peaſants who preſerve their primitive manners longer than the higher orders of the people, that the girls aſſemble on great feſtivals, and ſing in chorus odes and ancient poetry, which is never done by boys. Men, however, cultivated muſic: but it was only to celebrate the proweſs of their anceſtors in patriotic ſongs. It is related that in a repaſt given by Attila, the Enckeſius, or director of the muſic, had a ſeat on the right hand of the throne; and that after the ſervice two men ſung verſes compoſed in honour of Attila's victories. Part of the audience wept, and, adds the hiſtorian, the reſt grew furious and deſired to be led to battle. Two ſtanzas of theſe ſongs have been preſerved in their original language, and in Latin, to the following purport.

" Let us ever remember thoſe ancient domains,
Which our anceſtors left when they flew
To a climate more mild, from the Scythian plains,
Where dread mountains of ſnow are in view.

" To Hung'ry they haſten'd, with God for their guide,
And choſe Tranſylvania for home;
Be their force and their courage for ever our pride,
But, like them, let us ne'er again roam."

The knowledge of muſic was introduced into Hungary by the Chriſtian religion and belles lettres.

As to the time when muſic was firſt in uſe at court, there appears, in a diploma granted by king Bela III. in 1192, that a perſon was ſent to Paris of the name of Elvin, to learn the French melody.

It likewiſe appears in the Journals of the kings of Hungary, that the Hungarians, who came from Aſia into Europe, brought to their new habitations the Aſiatic manners, airs, dances, and ſongs; but that in proceſs of time they cultivated the muſic and dancing of the neighbouring nations of Europe, till at length theſe two arts, practiſed by the ſovereigns themſelves, were held in great favour throughout the kindom of Hungary. Eſſais ſur la Muſique.

HUNGARICA Bolus, in the *Materia Medica*, a medicinal earth, commonly known by the name bolus Toccavienſis.

HUNGARICUS Morbus, or *Febris Hungarica*, the *Hungarian diſeaſe*, an epidemic and fatal fever, which originated in the camp of the emperor Maximilian II. in Hungary, in the year 1566, and ſpread through the greater part of Europe, cauſing every where a terrible mortality, and almoſt depopulating Vienna, where the returning army halted in order to recruit. In ſome inſtances it ſeems to have put on the form of a remittent fever; but in general was a ſevere and malignant typhus, reſembling the hoſpital or goal fever. (See Fever and Typhus.) Conſult Sennert. lib. iv. cap. 14. De Morbo Hungarico. Ruland. De Lue Hungarica:— Jordan, De Peſtis phænom. cap. 19. Pringle on Diſ. of the Army, part iii. chap. 4. § 4.

HUNGARY, in *Hiſtory* and *Geography*, a country of Europe, formerly regarded as an independent kingdom, is bounded on the north by Poland, from which it is ſeparated by the Carpathian mountains, on the eaſt by Tranſylvania and Walachia, on the ſouth by Sclavonia, and on the weſt by Moravia, Auſtria, and Stiria. Many authors comprehend under the general name of Hungary, Sclavonia, Dalmatia, Boſnia, Servia, Tranſylvania, Moldavia, and Walachia. The ancient inhabitants of the weſtern parts of Hungary were Pannonians, thoſe of the northern Jazygians. The Romans reduced Pannonia, and kept it almoſt 400 years, till they were driven out by the Vandals, who held it till the year 395, when the Goths took poſſeſſion of their ſettlements, who, in their turn, yielded to the Huns. In the year 888, the Huns, under the name of Hungarians, made another irruption into Pannonia, againſt the Bulgarians and Sclavonians, whom they reduced. They had ſeven commanders, and Germany and many parts of Italy felt the effects of their ſavage ferocity. By degrees they became more civilized, and in the 10th century their prince Geyſa embraced the Chriſtian religion. His ſon Stevin was the firſt king of Hungary, and he completed the eſtabliſhment of the Chriſtian religion about the year 1000. He erected biſhoprics, abbeys, and churches; annexed Tranſylvania as a province to Hungary, and at his death he was canonized. After him followed a ſucceſſion of kings, natives of the country, of whom may be mentioned Andrew II. who conferred great privileges on the nobility, and even empowered them to oppoſe the king if he ſhould attempt any thing hoſtile to the laws of the country. In 1342 Louis I., ſurnamed the Great, ſubdued a part of Dalmatia, and carried his arms into Italy. He was ſucceeded by his daughter Mary, who was ſtyled *King* of Hungary. She died in 1392, and the ſucceſſion, which was ſome time controverted, at length terminated in the election of Sigiſmund, marquis of Brandenburg, who, in 1411, was choſen emperor of Germany. Albert of Auſtria, having married Elizabeth the heireſs of Sigiſmund, was, with her, crowned king and queen of Hungary in 1438, an event which is ſaid to form the earlieſt baſis of the Auſtrian claim to the Hungarian monarchy. Upon the death of Albert, Ladiſlaus, king of Poland, was choſen king of Hungary, but periſhed in the battle of Werna againſt the Turks. The celebrated John Hunniades was appointed regent of the kingdom. In 1458 Matthias Corvinus, ſon of Hunniades, was proclaimed king of Hungary by the ſtates, and in 1485 he ſeized Vienna, and the other Auſtrian ſtates, and retained them till his death in 1490. Matthias was the moſt renowned prince that ever ſat on the Hungarian throne: he was the friend and patron of letters, and founded a magnificent library at Buda, and furniſhed it with the beſt Greek and Latin books, and many valuable manuſcripts. After repeated conteſts, the houſe of Auſtria again filled the throne of Hungary, in the perſon of Ferdinand, 1527, but towards the end of his reign the Turks ſeized the greater part of this kingdom. On his being choſen emperor of Germany, Ferdinand retained the crown of Hungary till 1563, when he reſigned it to Maximilian his ſon; and it has ſince continued a conſtant appanage of the houſe of Auſtria. The grand duchy of Tranſylvania was conſidered as a part of Hungary till the year 1540, when it began to be regarded as a diſtinct ſtate. Stephen Battori was elected prince of Tranſylvania in 1571, and his family held the ſovereignty till 1602, after which it continued ſubject to ſeveral elective princes, of whom the moſt diſtinguiſhed was Bethlem Gabor, a noble Hungarian and Calviniſt, who conquered great part of Hungary in 1619, and died in 1629. The laſt prince of Tranſylvania was Michael Abaffi, who gave up the ſovereignty to the emperor in 1694, ſince which period this country has formed a part of the Auſtrian dominions. In the year 1722, in the diet of Preſburg, the hereditary ſucceſſion of Hungary was ſecured to the houſe of Auſtria, and in caſe of failure of male heirs, it was enacted that females ſhould be capable of holding the crown. Such are the hiſtorical epochs of this country. With reſpect to its ſurface, it is mountainous and barren towards the north: the air is cold but healthy. Towards the Danube the ſoil is level and ſandy, and the climate very temperate. In the ſouth the marſhes are hot, moiſt, and unwholeſome. Hot days, with cold nights, and habitual intemperance, occaſion diſeaſes, particularly what is called the Hungarian fever. The level country bears abundance of corn, excellent fruit, and almoſt all kinds of vegetables. The foreſts are beautiful, and the meadows feed numerous herds of cattle. The ſides of the mountains are covered with vines, and in their bowels are found all kinds of metals and mineral ſubſtances. The chief mountains are the Carpathian or Crapack: the principal rivers are the Danube and Drave. The Hungarians and Sclavonians are regarded as the only native inhabitants, though the Croats, Ruſſians, Walachians, Vandals, Greeks, Jews, and Turks, likewiſe abound. Proteſtants are more numerous than Roman Catholics. Hungary is governed by the king and ſtates: the latter are divided into four claſſes; to the firſt belong the prelates and other high orders of the church: to the ſecond claſs belong the great barons, bans, or viceroys: to the third claſs belong the gentry, and to the fourth the royal free cities. Upon every view of the ſubject there appears to be between ſeven and eight millions of inhabitants, which are about one-third of the population of the Auſtrian dominions, and it yields about one-fifth of the whole revenue. The annual exports are equal in value to 1,600,000*l.* ſterling, and its imports to little more than a million. The ſtanding military force amounts to nearly ninety thouſand men. Preſburg is the capital. The Hungarians are tinctured with the manners of the Germans, but they remain a ſpirited people, and affect to deſpiſe their maſters. The nobility are numerous, well informed, and warlike. Their lands owe their ſovereigns no ſervice. The peaſant poſſeſſes nothing, he can be nothing but a farmer, and the proprietor can diſmiſs him at his pleaſure. Anciently the peaſants might change their maſters; they cannot do ſo now: they once had particular tribunals to which they might have recourſe, but this privilege is no longer allowed. The Hungarian dreſs is well known to be peculiar, and is copied by our huſſars. This dreſs, conſiſting of a tight veſt, mantle, and furred cap, is graceful; and the whiſkers add a military ferocity to the appearance. The languages ſpoken are numerous and diſcrepant: they belong chiefly to three grand diviſions; the Gothic or German; the Sclavonic; and laſtly, the Hungarian proper, which has been conſidered as a branch of the Finnic.

HUNGARY-*Town*, a poſt-town of America, in Lunenburgh country, Virginia; 215 miles from Virginia.

HUNGARY *Water, Aqua Hungarica,* a diſtilled water, ſo denominated from a queen of Hungary, for whoſe uſe it was firſt prepared, and who was cured by the continued uſe of it, of a paralytic diſorder.

Hungary-water is one of the diſtilled waters of the ſhops; and is directed in the college diſpenſatory, to be made of roſemary flowers infuſed ſome days in rectified ſpirit of wine, and the ſpirit then diſtilled. The college of Edinburgh directs a gallon of rectified ſpirit to be drawn over in the heat of a water-bath from two pounds of the flowers as ſoon as they are gathered; that of London takes the tops and a ſpirit not quite ſo ſtrong; putting a gallon of proof ſpirit to a pound and a half of the freſh tops, and drawing off in the heat of a water-bath five pints.

It is an agreeable perfume, and its virtues are much the ſame as thoſe of the ſimple it is drawn from. The Hungary water brought from France is more fragrant than ſuch as is generally prepared among us.

HUNGEN, in *Geography*, a town of Germany, in the circle of the Upper Rhine, and county of Solms-Braunfels; 14 miles S.E. of Wetzlar.

HUNGER, FAMES, a natural appetite or deſire for food. For the ſymptoms, proximate cauſe, &c. of hunger, ſee DIGESTION. See alſo ABSTINENCE, BULIMY, DIET, &c.

HUNGER, in *Biography*, in 1772 organiſt of the Duomo, or Frauen-Kirche, at Dreſden, of which church the organ was built by Silberman, and is regarded as one of the largeſt and moſt complete in Germany. The longeſt pipe in the pedals is 32 feet, and there are 48 ſtops.

Though M. Hunger poſſeſſed neither great fancy nor finger, his performance was truly maſterly, and manifeſted a perfect knowledge of his inſtrument.

HUNGER *Creek*, in *Geography*, a ſtream which ſupplies the water-machinery in the new and thriving manufacturing town of Hamilton, between Albany and Schenectady.

HUNGER *Rot*, the name of a morbid affection in ſheep, which is commonly produced by poor ſtinted keep, eſpecially in the winter ſeaſon. It is known with facility by the peculiar appearance of the ſheep, which becomes extremely thin, lean, ragged, and emaciated. The principal means of reſtoring ſuch animals, are thoſe of changing them to drier paſtures, and the gradual introduction of them into thoſe of richer and better kinds. See ROT.

It is ſometimes termed the hunger, or hungry evil.

HUNGERFORD, in *Geography*, is a market-town and pariſh, ſituated principally in the hundred of Kintbury Eagle, in the county of Berks, England, though a conſiderable part of the pariſh is in the hundred of Kinwardſtone, in the adjoining county of Wilts. The town ſtands on the banks of the river Kennet, near the road from London to Bath. Its ancient name, according to Camden, was Ingleford-Charnam-ſtreet; which Gough ſuppoſes to be a corruption from the ford of the Angles on Herman-ſtreet; a Roman road that croſſes the town, the name of which appears to be yet preſerved in one of its avenues, called Charman-ſtreet. The name of Hungerford, as now ſpelt, occurs in a record of the year 1204. At ſome diſtance weſt of the town is the church, an ancient ſtructure, which appears to have been erected at different periods. It contains ſome old monumental memorials to the family of Hungerford, who derived their name and origin from this town. The civil government of Hungerford is veſted in a conſtable, who is aſſiſted in the execution of his office by twelve feoffees and burgeſſes, a bailiff, ſteward, town-clerk, &c. The market, which is on Wedneſdays, has been held from time immemorial; it is mentioned as an eſtabliſhed market in a record dated 1297. The market-houſe and ſhambles, which were erected in 1787, are roomy and commodious. Over the latter is a large room, uſed as a town-hall, for the diſpatch of public buſineſs. In this room is depoſited a curious relict of antiquity, denominated the Hungerford-horn, given, with an extenſive right of fiſhery, by John of Gaunt to the inhabitants of the town. Here are three annual fairs. The town, by means of its canal navigation, has a conſiderable traffic; but no eſtabliſhed manufactures. Hungerford is 64 miles from London: in the year 1801 it contained 454 houſes, and 2292 inhabitants. At a ſhort diſtance S.E. of the town is

Hungerford-park, the property of John Willes, eſq. who purchaſed it of Mr. Dalbiac in the year 1796, ſince which time ſeveral improvements have been made to the houſe. Lyſons's "Magna Britannia," vol. i. Beauties of England, vol. i.

Hungerford, a townſhip of Upper Canada, in the county of Haſtings, lying in the rear and N. of the Mohawk tract. —Alſo, a townſhip in Franklin county, Vermont, containing, in 1790, 40 inhabitants; 7 miles S. of the Canada line, and 14 E. of lake Champlain.

HUNGRY Evil, a term uſed among the farriers for the ſame diſtemperature in horſes, which in men we call a canine appetite. It manifeſts itſelf ſufficiently in an inordinate deſire to eat, and is ſometimes the effect of long ſtarving, ſometimes of cold, or ſome other internal or external cauſe. In the latter caſe the horſe not only eats a large quantity, but he devours it in a very remarkable manner, chopping it up, as if he would eat the very manger. The method of cure is to give him large toaſts of bread, ſteeped in ſack, or ſome other ſweet wine; or give him a quantity of wheat flour in wine, or in milk, a quart or more at a time. Theſe are very good remedies in caſe of extremity, but otherwiſe he may be cured by feeding him moderately with bean-bread ſeveral times a-day, allowing no other food.

Hungry *Hill*, in *Geography*, a high mountain in the county of Cork, Ireland, on the north ſide of Bantry bay, which is a remarkable landmark, and on which ſome alpine plants have been found, as ſalix herbacea, empetrum nigrum, &c. A fine cataract falls from it, eſpecially after heavy rain.

Hungry *Point*, a cape on the E. coaſt of the iſland of St. Vincent. N. lat. 13° 28′. W. long. 61° 11′.

HUNGTONG, a town of Meckley; 35 miles S E. of Munnypour.

HUNINGUE, a town of France, in the department of the Upper Rhine, and chief place of a canton, in the diſtrict of Altkirch, ſituated on the Rhine; 14 miles E. of Altkirch. The place contains 774, and the canton 13,089 inhabitants, on a territory of 140 kiliometres, in 23 communes.

HUNNARYD, a town of Sweden, in the province of Smaland; 18 miles S.W. of Jonkioping.

HUNNEINE, a town of Algiers, near the coaſt; 10 miles N.N.W. of Tackumbreet.

HUNNERIC, in *Biography*, king of the Vandals, in Africa, ſucceeded his father Genſeric in 477. He was a violent Arian, and though he at firſt gave his opponents toleration, he afterwards commenced a perſecution againſt them, which, for ſavage barbarity, is ſaid to have exceeded the perſecutions under the heathen emperors. He died in 484.

HUNNIADES, John Corvin, one of the moſt conſiderable captains of his age, who contended with and defeated the Turks in 1442 before Belgrade and in Tranſylvania. When the peace which ſucceeded was violated by the Hungarians, Hunniades accompanied Uladiſlaus to the battle of Varna in 1444, in which the Chriſtian army was entirely defeated, with the death of the king. Hunniades drew off the remainder of the forces, and by his vigour put himſelf in a condition to act offenſively with ſucceſs againſt the Turks. He was declared governor of Hungary for the minor king Ladiſlaus, then educating at the court of the emperor Frederic, who refuſed to give him up to the ambaſſadors of the nation. For a conſiderable time he was a terror of the Turks, but was at length defeated by them in 1448. In 1456 he compelled Mahomet II. to raiſe the ſiege of Belgrade. At this time Ladiſlaus, who had been reſtored to his ſubjects, fled in alarm to Vienna, and the hoſtile torrent would have been irreſiſtible, had not Hunniades, after defeating a Turkiſh fleet on the Danube, thrown himſelf into Belgrade. Capiſtran, a monk, by his ſucceſs in preaching a cruſade, was inſtrumental in bringing him large reinforcements; by the aid of which Mahomet was repulſed with great ſlaughter. Not long after this glorious ſucceſs, Hunniades was ſeized with a fever, of which he died, at Zemlin, in September 1456, regarded as the hero of Chriſtendom. Univ. Hiſt. Moreri.

HUNNIUS, Giles, a Lutheran divine, was born at Winende, in the duchy of Wirtemberg, in 1550. He was educated at Tubingen, and became profeſſor of divinity at Marpurg, from whence he removed to Wirtemberg. In theſe ſituations his zeal for Lutheraniſm led him to act in a manner that reflects much infamy on his memory. He eſtabliſhed a kind of inquiſition which deprived many perſons of their employments, and drove them from their country. If they refuſed to ſign a formulary dictated by Hunnius and his colleagues, they were inſtantly regarded as Calviniſts, and found no mercy. Hunnius, after a ſeries of atrocious perſecutions, died in 1603, in the 53d year of his age. He was a man of conſiderable learning and abilities, but bigotted and intolerant. He was author of many controverſial pieces: alſo of commentaries on the goſpels; homilies, &c. His moſt celebrated work is entitled "Calvinus, Judaizans, &c." in which, ſays Bayle, Calvin was accuſed of ſo many heretical crimes that he might have been afraid of being treated like Servetus, had he lain at Hunnius's mercy. His works have been collected and publiſhed in five volumes, folio. Bayle.

HUNNOVER, in *Geography*, a town of Hindooſtan, in Myſore; 13 miles E.N.E. of Cheneroypatam.

HUNS, in *Ancient Geography* and *Hiſtory*, one of the northern nations, which, under the reign of Valens, threatened the empire of Rome, had been formidable, in a much earlier period, to the empire of China. Their ancient, perhaps their original ſeat, was an extenſive, though dry and barren, tract of country, immediately on the north ſide of the great wall. Theſe narrow limits, however, were extended by their valour; and their ruſtic chiefs, who aſſumed the appellation of "Tanjou," gradually became the conquerors and the ſovereigns of a formidable empire. Towards the eaſt, their victorious arms were ſtopped only by the ocean; and the tribes, which are thinly ſcattered between the Amoor and the extreme peninſula of Corea, adhered with reluctance to the ſtandard of the Huns. On the weſt, near the head of the Irtiſh, and in the vallies of Imaus, they found a more ample ſpace, and more numerous enemies. One of the lieutenants of the Tanjou ſubdued, in a ſingle expedition, 26 nations; and the Igours, or Vigours, diſtinguiſhed above the Tartar race by the uſe of letters, and conſiſting of three claſſes, of hunters, ſhepherds, and huſbandmen, were in the number of his vaſſals. On the north, the ocean was the limit of the power of the Huns. The pride of the Tanjou might be flattered by the ſubmiſſion of ſo many diſtant nations; but the valour of the Huns ſought the richer recompence of the wealth and luxury of the empire of the ſouth. In the third century before the Chriſtian era, a wall of 1500 miles in length was conſtructed in order to defend the frontiers of China againſt the inroads of the Huns; but this was an inſufficient defence to an unwarlike people. The cavalry of the Tanjou frequently conſiſted of two or three hundred thouſand men, formidable by the matchleſs dexterity with which they managed their bows and their horſes; by their hardy patience in ſupporting the inclemency of the weather; and by the incredible ſpeed of their march, ſeldom checked by torrents or precipices, by the deepeſt rivers, or by the moſt lofty mountains. They ſpread themſelves over the face of the country; and notwithſtanding the elaborate tactics of the Chineſe, directed in their operation by the emperor Kaoti, whoſe merit had raiſed him to the throne, were conſtrained to ſurrender to the victorious arms of the barbarians, B. C. 201. The ſucceſſors of Kaoti, whoſe lives were dedicated to the arts of peace, or the luxury of the palace, ſubmitted to a more permanent diſgrace, and to purchaſe a temporary and precarious peace by the regular payment of a tribute of money and ſilk. Beſides, a ſelect band of the faireſt maidens of China was annually devoted to the rude embraces of the Huns; and the alliance of the haughty Tanjous was ſecured by their marriage with the genuine or adopted daughters of the imperial family, which vainly attempted to eſcape the ſacrilegious pollution. At length, however, the pride of the Huns was humbled, and their progreſs checked by the arms and policy of Vouti, the fifth emperor of the powerful dynaſty of the Han. (B. C. 141—87.) Intimidated by the arms, or allured by the promiſes of Vouti and his ſucceſſors, the moſt conſiderable tribes of the eaſt and of the weſt diſclaimed the authority of the Tanjou. (B. C. 70.) The Tanjou was compelled to renounce the dignity of an independent ſovereign, and the freedom of a warlike and high-ſpirited nation. From this period the monarchy of the Huns gradually declined, till it was broken, by civil diſſenſion, into two hoſtile and ſeparate kingdoms. (A. D. 48.) One of the princes of the nation was urged, by fear and ambition, to retire towards the ſouth with eight hords, which compoſed between forty and fifty thouſand families. He obtained, with the title of Tanjou, a convenient territory on the verge of the Chineſe provinces; and his conſtant attachment to the ſervice of the empire was ſecured by weakneſs and the deſire of revenge. From the time of this fatal ſchiſm, the Huns of the north continued to languiſh about 50 years, till they were oppreſſed on every ſide by their foreign and domeſtic enemies. The Sienpi, a tribe of oriental Tartars, retaliated the injuries which they had formerly ſuſtained; and the power of the Tanjous, after a reign of 1300 years, was utterly deſtroyed before the end of the firſt century of the Chriſtian era. (A. D. 93.) The era of the Huns is placed, by the Chineſe, 1210 years before Chriſt, but the ſeries of their kings does not commence till the year 230. About this period more than 100,000 perſons of the pooreſt condition, and moſt puſillanimous temper were contented to remain in their native country, and to mingle with the victorious nation of the Sienpi. Fifty-eight hords, conſiſting of about 200,000 men, ambitious of a more honourable ſervitude, retired towards the ſouth, and were permitted to inhabit and to guard the extreme frontiers of the province of Chanſi and the territory of Ortous. But the moſt warlike and powerful tribes of the Huns maintained, in their adverſe fortune, the undaunted ſpirit of their anceſtors; and reſolved to explore the weſtern world, and diſcover ſome remote country, inacceſſible to the arms of the Sienpi, and to the laws of China. In the courſe of their emigration they ſoon paſſed the mountains of Imaus and the limits of the Chineſe geography. Of theſe formidable exiles two diviſions directed their march towards the Oxus, and towards the Volga. The firſt of theſe colonies eſtabliſhed their dominion in the fruitful and extenſive plains of Sogdiana, on the eaſtern ſide of the Caſpian, where they preſerved the name of Huns, with the epithet of Euthalites, or Nepthalites. Their manners were ſoftened, and even their features were improved, by the mildneſs of the climate, and their long reſidence in a flouriſhing province, which might ſtill retain a faint impreſſion of the arts of Greece. Theſe *white* Huns, a name which they derived from the change of their complexion, ſoon abandoned the paſtoral life of Scythia, and though their vicinity to the provinces of Perſia involved them in frequent conteſts with the power of that monarchy, they reſpected, in peace, the faith of treaties; and, in war, the dictates of humanity. The *ſecond* diviſion of their countrymen, the Huns, who gradually advanced towards the north-weſt, were exerciſed by the hardſhips of a colder climate, and a more laborious march. Their independent ſpirits ſoon rejected the hereditary ſucceſſion of the Tanjous; and while each hord was governed by its peculiar murſa, their tumultuary council directed the public meaſures of the whole nation. As late as the 13th century, their tranſient reſidence on the eaſtern banks of the Volga was atteſted by the name of Great Hungary. (See HUNGARY.) A chaſm occurs in their hiſtory after theſe Huns of the Volga were loſt in the eras of the Chineſe, and before they appeared to thoſe of the Romans, which is not eaſily filled up. There is reaſon, however, to apprehend, that the ſame force which had driven them from their native ſeats, ſtill continued to impel their march towards the frontiers of Europe. The Huns, whoſe martial ſpirit had not been impaired by a long reſidence in China, with their flocks and herds, their wives and children, their dependents and allies, were tranſported to the coaſt of the Volga; and they boldly advanced to invade the country of the Alani, a paſtoral people who occupied, or waſted, an extenſive tract of the deſerts of Scythia. (See ALANS.) The Huns united with the Alani in their invaſion of the Gothic empire. (A. D. 375.) The numbers, the ſtrength, the rapid motions, and the implacable cruelty of the Huns were felt, and dreaded, and magnified by the aſtoniſhed Goths, who beheld their fields and villages conſumed with flames, and deluged with indiſcriminate ſlaughter. To theſe real terrors they added the ſurpriſe and abhorrence which were excited by the ſhrill voice, the uncouth geſtures, and the ſtrange deformity of the Huns. Theſe ſavages of Scythia were compared (and the picture had ſome reſemblance) to the animals who walk very awkwardly on two legs; and to the miſ-ſhapen figures, the "Termini," which were often placed on the bridges of antiquity. They were diſtinguiſhed from the reſt of the human ſpecies by their broad ſhoulders, flat noſes, and ſmall black eyes deeply buried in the head; and as they were almoſt deſtitute of beards, they never enjoyed either the manly grace of youth, or the venerable aſpect of age. A fabulous origin was aſſigned to them, worthy of their form and manners; that the witches of Scythia, who, for their foul and deadly practices, had been driven from ſociety, had copulated in the deſert with infernal ſpirits; and that the Huns were the offspring of this execrable conjunction. The Goths greedily embraced the tale, and were the more eaſily induced to exert themſelves in repelling the invaſion of ſuch enemies. (See GOTHS.) Such is the character, with the addition of many other particulars, which Ammianus Marcellinus and Jornandes give of theſe Scythian and Sarmatian Huns, who anciently inhabited that part of Aſiatic Sarmatia, which bordered on the Palus Mæotis and the Tanais, the ancient boundary between Europe and Aſia. They are repreſented as the moſt ſavage and cruel of all the barbarous nations. Their cheeks were mangled and countenances diſtorted in their earlieſt infancy, with a view, in maturer age, of ſtriking terror into their enemies. They lived in the open air, without houſe or even huts, and ſubſiſted upon roots and raw meat; and inured themſelves, in the woods and on the mountains which they inhabited, to every kind of privation and hardſhip. They were accuſtomed to eat and to ſleep on horſeback, ſcarcely ever diſmounting; and they covered their nakedneſs with goat-ſkins, or the ſkins of a ſort of mice ſewed together. They had no law, nor any kind of religion; nor did they obſerve any diſtinction between good and evil, or ſubmit their inclinations and paſſions to any kind of reſtraint. In war, they began the battle with great fury and a hideous noiſe; but after the firſt onſet, their fury abated and they fled, when reſiſted, in the greateſt confuſion. They were notoriouſly faithleſs, ſo that they diſregarded the moſt ſolemn treaties. Sometimes they made incurſions into the Roman empire in defiance of the moſt ſacred oaths and engagements; and at other times they joined the Romans in fighting againſt the Goths, and other barbarous nations. They have fought againſt each other when they had proſpect of gaining any advantage to themſelves by ſuch conduct. Of their diſpoſition in this reſpect, Juſtinian was ſo fully appriſed, that by promiſing a large ſum to the Uturgurian Huns, who inhabited the ſouth ſide of the Palus Mæotis, he prevailed upon them to fall upon the Cuturgurians, another tribe, which had occupied the territory north of the others, towards the Tanais. Their form of government was not ſtrictly monarchical; but they were headed and conducted by ſome of their chiefs. It was about the year 376 that they entered the country of the Alans, and, obliging thoſe who ſurvived their cruelty to enliſt under their ſtandard, fell upon the Goths, called by Ammianus Greuthongi, and by Jornandes Oſtrogoths, and drove them out of their country. The Viſigoths were afterwards treated in the ſame manner. The Gothic nations, alarmed by the ſudden and unexpected irruptions of the Huns, determined to abandon their territories, and to ſeek ſhelter within the Roman dominions, ſeparated by the Danube from the countries which had been over-run by the Huns. Upon ſubmiſſive application to Valens, the Goths were admitted into Thrace, and their number was ſo conſiderable, that Ammianus compares them to the ſparks which at that very time iſſued out of Mount Ætna, and to the ſands of the Libyan ſhore. Thus the Huns, in the year 376, not only ſettled in Europe, but made themſelves maſters of that immenſe country, which extends from the Tanais to the Danube, and which, before their arrival, was poſſeſſed by the Alans, the Goths, and ſeveral other barbarous nations, whom they either drove out, or forced to ſubmit to their victorious arms. In the year 388 many of the Huns, who had ſettled in Europe, were induced by large ſums to enliſt under the Roman banner of Theodoſius I., who was then emperor, and they were thus prevented from raiſing diſturbances on the frontiers of the empire. In 391 they paſſed the Danube, and being joined by the Goths and other barbarians, committed dreadful havoc in Mœſia and Thrace; but their progreſs was reſtrained by the vigorous and ſucceſsful attack of Stilicho. About four years after, *viz.* in 395, the Huns made an unexpected inroad into the eaſtern provinces, and penetrated as far as Antioch, deſtroying the country with fire and ſword, and committing every where deplorable cruelties. Having over-run and plundered ſeveral provinces, they voluntarily returned home, loaded with ſpoils, and carrying with them an incredible number of captives. After this irruption they remained quiet for nine years, or till the year 404, when paſſing the Danube in great multitudes, they entered Thrace, and having traverſed that province, penetrated into Eaſt Illyricum, committing whereſoever they went dreadful ravages. In the following year great numbers of them entered the Roman ſervice, and joined Stilicho's army, in its march againſt Radagaiſus, who had invaded Italy. They were led by Uldin, one of their chiefs, and contributed to the victory gained by Stilicho in Etruria; but in two years after the ſignal victory, obtained chiefly by his means over Radagaiſus, Uldin became an irreconcileable enemy to the Romans; and paſſing the Danube, entered Thrace at the head of a numerous army; but having offended ſome of his principal officers, who joined the Romans, he was forced to recroſs the Danube after having loſt many of his men. From this period the Huns ſeem to have continued quiet till the year 423, when, upon the death of the emperor Honorius, John, his chief ſecretary, aſſumed the purple, and the celebrated Aetius (ſee his article) was prevailed upon to eſpouſe the cauſe of the uſurper. Aetius engaged 60,000 Huns to march to the aſſiſtance of the new emperor; but hearing of his death, the prudent leader ſubmitted to Theodoſius, and perſuaded the Huns, not without diſtributing among them conſiderable ſums, to return home. Soon after this event, which happened in 423, we find the Huns in poſſeſſion of Pannonia. As they were much indebted to Aetius for the lands they held in this country, Roas, their chief or king, received this able commander with the greateſt demonſtrations of kindneſs and friendſhip, upon his being diſgraced at the court of Placidia, mother of Valentinian III. and ſent him back at the head of a powerful army of Huns, which ſo terrified Placidia, that ſhe reſtored Aetius to all his employments, and raiſed him to the rank of patrician. In 435 a ſtrong body of Huns marched through Germany and Gaul, and joined Aetius againſt the Burgundians, who, having been allowed to ſettle in that part which bordered on the Rhine, had revolted from the Romans, and ravaged Belgic Gaul. On this occaſion 20,000 Burgundians, with their commander Gondicaeius, were cut off. Soon after the Burgundians marched againſt the Huns, and ſurpriſing them when they were left deſtitute of a leader, by the ſudden death of Uptar, their king, deſtroyed 10,000 of them, and obliged the ſurvivors to ſave themſelves by a precipitate flight. The Huns, notwithſtanding this defeat, marched either in the ſame or the following year to the aſſiſtance of the Romans againſt the Goths, who had been allowed to ſettle in Aquitain, but who, not contented with the territory allotted them, had taken poſſeſſion of ſeveral cities belonging to the Romans, and had laid ſiege to Narbonne. The Huns, having in the preceding year ſignalized themſelves againſt the Goths in Armorica, marched againſt the Goths of Aquitain. In 425 Rouas, or Roas, king of the Huns, concluded a peace with Theodoſius II., of which one of the conditions was, that the emperor ſhould pay him a yearly penſion of 350 pounds weight of gold. Soon after Rouas died, and was ſucceeded by his two nephews, Bleda and Attila. For the principal events that occurred under the reign of Attila, we refer to his biographical article. With the death of Attila the empire of the Huns is ſaid to have terminated: for after this event they were ſo weakened by inteſtine wars and by the irruptions of the Gepidæ and Goths, that they continued quiet till the year 466, when paſſing the Danube on the ice, they made an incurſion into Dacia, and committed dreadful ravages in that country. But their progreſs was interrupted by Anthemius the Roman commander, and in a pitched battle they were totally defeated. The Huns, diſpirited by their loſſes and the death of their leader, were not in a condition to moleſt either the Romans or their neighbours for about 60 years. In 526 Boarex, queen of the Huns, took part with the Romans againſt the Perſians, and led to the aſſiſtance of the emperor Juſtinian an army of 100,000 men, and obtained a victory, in the 13th year of Juſtinian's reign. The Huns, paſſing the Danube in great multitudes, laid waſte Thrace, Greece, Illyricum, and all the provinces from the Ionian ſea to the ſuburbs of Conſtantinople; and having croſſed the Helleſpont, extended their ravages to Aſia, whence, after practiſing unheard-of cruelties, they returned home loaded with an immenſe booty. Juſtinian, in order to keep them quiet, allowed them ſome lands in Thrace, and agreed to pay them an annual penſion, upon their promiſing to ſerve when wanted in the Roman armies. Theſe were the Cuturgurian Huns; the Uturgurians retired with their booty to their own country bordering on the Euxine ſea, and enlarged their territory by encroaching on that of their neighbours, without giving any further moleſtation to the Romans. But the Cuturgurians, notwithſtanding the penſion annually paid them by the emperor, made ſeveral inroads into the neighbouring provinces. Whilſt they were buſily plundering the provinces lying on the Danube, the Uturgurians, at the inſtigation and bribe of the emperor, fell upon them unexpectedly, defeated them with great ſlaughter, obliged them to quit their booty, and drove them entirely out of the empire. In a few years after, *viz.* A. D. 558, the Cuturgurian Huns, availing themſelves of the froſt, paſſed the Danube, and laid waſte a great part of Myſia and Thrace; but whilſt they were purſuing their ravages, they were put to flight by the aged Beliſarius, and by an youth of great promiſe, called Germanus. The next event in which the Huns were concerned was the war that took place between the two tribes of the Uturgurians and Cuturgurians, and which, after laſting many years, haſtened their deſtruction. In the reign of Charles the Great the Huns were maſters of Dacia, New Tranſylvania, and Walachia; of Upper Mœſia, New Servia, and of the two Pomeranias, namely, the Upper containing the preſent provinces of Carniola, Carinthia, and the greater part of Auſtria: and the Lower, compriſing Boſnia, Sclavonia, and that part of Hungary which lies beyond the Danube. In the year 776, two princes of the Huns ſent ambaſſadors to Charles, while he was in Saxony, deſiring his friendſhip and alliance. But as they proved unfaithful by entering into an alliance with Taſſilo, duke of Bavaria, the enemy of Charles, he raiſed two armies, which, in 794, laid waſte the territories of the Huns, burnt their villages, and took ſeveral of the ſtrong holds to which they had fled for ſecurity. In the ſpace of eight years, this warlike nation was entirely ſubdued, and almoſt wholly extirpated. The entire reductions of the Huns happened, according to the beſt chronologers, in the year 794. Some authors aſſert that by this long war the whole race of the ancient Huns was cut off; and that the country was afterwards peopled by the neighbouring nations, to whom the preſent Hungarians owe their origin. Anc. Un. Hiſt. vol. xvii. Gibbon's Rom. Emp. vol. iv. v. vi.

HUNT, Jeremiah, in *Biography*, was born in London in 1678. He was educated under Mr. Thomas Rowe, and after he had finiſhed his courſe with him, he went firſt to Edinburgh and then to Leyden; at the latter place he applied himſelf moſt diligently to the ſtudy of the Hebrew language and the Jewiſh antiquities. In Holland he preached to a ſmall Engliſh congregation, and upon his return he officiated ſome time at Tunſtead, in Norfolk, from whence he removed to London about 1710, and was appointed paſtor of the congregation at Pinner's hall. In 1729 the univerſity of Edinburgh conferred on him the degree of D.D. He died in the year 1744. He was author of ſeveral ſingle ſermons; and likewiſe of "An Eſſay towards explaining the Hiſtory and Revelations of Scripture in their ſeveral Periods, to which is annexed a Diſſertation on the Fall of Man." After his death four volumes of his "Sermons," with tracts, were publiſhed, to which was prefixed Dr. Lardner's Funeral Sermon for him: to this the reader is referred for farther particulars.

Hunt, Mrs. Arabella, a lady much celebrated the latter end of the 17th century, for her beauty, fine voice, and muſical talents. Congreve has left a rapturous and extatic ode on her performance, which, if not ſeraphically exquiſite, his verſes muſt be the moſt *mendacious*, that is, the moſt *poetical*, that ever were written. It ſeems the moſt animated of all the author's fugitive pieces; and we ſhould ſuppoſe that he felt ſtrongly what he ſo warmly deſcribes.

If matters of fact in our biographical articles were not more our buſineſs than amuſement of our readers, we ſhould inſert this whole poem, as it ſurpaſſes in intelligible panegyric all that ancient poets have ſaid of the miraculous powers of Orpheus, Amphion, or Linus. We cannot help giving the firſt ſtrophe as a ſpecimen of auricular rapture.

On Mrs. Arabella Hunt ſinging,

"Let all be huſht, each ſofteſt motion ceaſe,
Be every loud tumultuous thought at peace,
And every ruder gaſp of *breath*
Be calm as in the *arms* of death.

"And thou moſt fickle, moſt uneaſy part,
Thou reſtleſs wanderer, my heart,
Be ſtill; gently, ah, gently leave,
Thou buſy idle thing, to heave.
Stir not a pulſe, and let my *blood*,
That turbulent unruly flood,
Be ſoftly ſtaid.

"Let me be all, but my attention, dead.
Go, reſt, unneceſſary ſprings of life,
Leave your officious toil and ſtrife,
For I would hear her voice, and try
If it be poſſible to die, &c."

Whether this ſiren was a profeſſional ſinger, or a lady, does not appear; ſhe was contemporary with Purcell, and gained her muſical fame chiefly by her admirable performance of his compoſitions. She taught the princeſs Anne of Denmark to ſing; and was in ſuch favour with queen Mary, that ſhe beſtowed on her an employment in the houſhold, for the ſake of having her near her perſon, and was frequently entertained by her performance in private, even in ſinging to her majeſty common popular ſongs and ballads.

Old Mr. Goſtling of Canterbury, uſed to relate a ſtory which he had from his father, (one of the prieſts of the chapel royal, ſubdean of St. Paul's in the time of Charles II. and in the reign of king William, a favourite ſinger at court,) that queen Mary having expreſſed herſelf warmly in favour of the old Scots tune of "Cold and raw the wind doth blow," Purcell made it a perpetual baſe to an air in the next birth-day ode, 1692; beginning "May her bleſt example chaſe:" a piece of pleaſantry occaſioned by her majeſty aſking for this tune, after he, (Goſtling,) and Mrs. Arabella Hunt, with Purcell to accompany them on the harpſichord, had exerted all their talents and abilities to amuſe ſo great a perſonage with compoſitions which they miſtakenly thought of a ſuperior claſs.

Mrs. Hunt died in 1705, when Congreve, under her picture playing on the lute by ſir Godfrey Kneller, furniſhed the following lines, which in his works are called an epigram.

"Were there on earth another voice like thine,
Another hand ſo bleſt with ſkill divine;
The late afflicted world ſome hopes might have,
And harmony retrieve thee from the grave."

HUNTEBURG, in *Geography*, a town of Weſtphalia, in the biſhopric of Oſnabruck, ſituated on the river Hunte, which riſes in the Dummer ſee, and runs into the Weſer, about 20 miles N.E. of Oldenburg; 18 miles N.E. of Vorden.

HUNTER, William, M. D. in *Biography*, an eminent anatomical teacher and phyſician, was born on the 23d of

May, 1718, at Kilbride, in the county of Lanerk, in Scotland. His father, John Hunter, was deſcended from the family of Hunter of Hunterſtown, and reſided on a ſmall eſtate, called Long Calderwood, in the pariſh of Kilbride. William, the ſeventh of ten children, was of a quiet and diligent diſpoſition, and was ſent to the univerſity of Glaſgow, at the age of fourteen, as a ſtudent of divinity. But after a ſedulous ſtudy of theology, he conceived a repugnance to the ſubſcribing to the articles of the Scotch church; and in this ſtate of mind becoming acquainted with Mr Cullen (afterwards the celebrated profeſſor at Edinburgh), who had juſt ſettled in practice at Hamilton, he was led to give a preference to the profeſſion of phyſic, and in 1737 went to reſide with this excellent friend and preceptor, with the conſent of his father. The three years which he paſſed at Hamilton, he often declared were the happieſt in his life. Mr. Cullen and he entered into partnerſhip, with this liberal agreement, that each of them ſhould alternately purſue further improvement in ſome medical ſchool. Hunter, in conſequence, went to Edinburgh in November 1740, where he attended the winter courſe of lectures, and among others thoſe of the firſt Dr. Alexander Monro. In the ſummer of 1741, he arrived in London, with a recommendation to Dr. James Douglas, who was at that time engaged in a great anatomical work on the bones, which he did not live to complete. He was deſirous of engaging a young man of abilities and induſtry to aſſiſt him in his diſſections, and being favourably impreſſed with the converſation of Mr. Hunter, invited him to reſide in his family for that purpoſe, and alſo to ſuperintend the education of his ſon. Dr. Cullen readily gave his aſſent to a change of plan ſo favourable to his friend's advancement; and his venerable father, then near his end, reluctantly conſented; he died in October of the ſame year. Mr. Hunter was immediately enabled, by Dr. Douglas's friendly aſſiſtance, to enter himſelf as a ſurgeon's pupil at St. George's hoſpital, and as a diſſecting pupil of Dr. Frank Nichols, an anatomiſt of conſiderable reputation. He purſued his diſſections with ſuch aſſiduity and ſucceſs, that Dr. Douglas was at the expence of having ſeveral of his preparations engraved. But he ſoon had the misfortune to loſe this generous friend, who died in April 1742. He continued, however, to reſide with the doctor's family, and to purſue his ſtudies with the ſame diligence: for while he was convinced that he muſt now depend upon his own exertions for profeſſional ſucceſs, he alſo began to feel a conſciouſneſs of his own powers. In the following year, 1743, he communicated to the Royal Society a paper "On the Structure and Diſeaſes of articulating Cartilages," which was printed in their Tranſactions, vol. 42, and was admired for the ingenuity of the obſervations on a ſubject not much inveſtigated before. He now determined to become a teacher of anatomy; but difficulties at firſt preſented themſelves, and he was diſcouraged by Dr. Nichols, who about that time declined giving lectures in favour of Dr. Lawrence. A circumſtance, however, ſoon occurred, which called forth his abilities in this way. A ſociety of navy-ſurgeons had engaged Mr. Samuel Sharpe to deliver to them a courſe of lectures on the operations of ſurgery, at an apartment which they had in Covent-Garden. Mr. Sharpe at this time declined the taſk, and Mr. Hunter was ſolicited to continue it, which he did ſo much to their ſatisfaction, that they requeſted him to extend his plan to anatomy: and in the winter of 1746, he began his courſe of anatomical lectures in their room. At firſt he experienced conſiderable ſolicitude in ſpeaking in public; but at length his diffidence was overcome, and he acquired that facility for which he was peculiarly diſtinguiſhed, and which rendered the delivery of lectures a ſource of real pleaſure to him. We may here mention, that on returning home after his introductory lecture, accompanied by a young friend, Mr. Hunter, who had received about ſeventy guineas from his pupils, and had got the money in a bag under his cloak, obſerved, that it was a larger ſum than he had ever been maſter of before: an anecdote which, as Dr. Simmons remarks, deſerves to be recorded as an encouragement to young men, who with great merit poſſeſs but little advantages of fortune. Conſiderable as the emoluments of his two firſt courſes were, by contributing to the wants of different friends, he found himſelf, at the return of the next ſeaſon, obliged to defer his lectures for a fortnight, merely becauſe he had not money enough to defray the neceſſary expence of advertiſements. This produced a reſolution to be in future as cautious in lending money, as he was averſe to borrowing it. His own habits were ſtrictly economical, and laid the foundation of that ample fortune, which he ſo freely expended upon ſubjects of public utility.

In the ſpring of 1748, he ſet out on a tour through Holland to Paris, with his pupil young Douglas. The only circumſtance recorded of this journey, is his introduction to the celebrated Albinus at Leyden; whoſe admirable injections inſpired him with a ſtrong emulation to excel in that curious and important part of anatomy. Although admitted into the corporation of ſurgeons in the preceding year, he now relinquiſhed that branch of practice, to which he had always a ſtrong averſion, and directed his views to the practice of midwifery, in which his patron Dr. Douglas had acquired conſiderable reputation. His advancement in this department was accelerated by his being elected ſurgeon-accoucheur firſt to the Middleſex, and ſoon afterwards to the Britiſh Lying-in-hoſpital, as well as by the delicacy of his perſon and manners, which gave a great advantage over his countryman, Dr. Smellie. He was likewiſe recommended by ſeveral of the moſt eminent ſurgeons of that time, from a reſpect for his anatomical talents; and the death of ſir Richard Manningham, and the retirement of Dr. Sandys, (who then had the moſt lucrative practice in that branch,) concurred to aſſiſt Mr. Hunter's progreſs. In 1750, he obtained the degree of M. D. from Glaſgow; and as his reputation increaſed, he was much conſulted as a phyſician, both in caſes connected with his particular branch of practice, and in thoſe which required peculiar anatomical ſkill in their inveſtigation. About this time he quitted the family of Mrs. Douglas, and took a houſe in Jermyn-ſtreet.

In 1751, Dr. Hunter reviſited his native country; but with the exception of this journey, to which he devoted only a few weeks, he was never abſent from London but under profeſſional engagements. In 1756 he was admitted a licentiate of the College of Phyſicians, and ſoon afterwards was elected a member of the Medical Society, recently inſtituted; the "Medical Obſervations and Inquiries" of which he enriched by many valuable communications, and of which he was deſervedly choſen preſident on the death of Dr. Fothergill. It will be ſufficient here to notice the moſt important of the contributions to medical ſcience, of which Dr. Hunter was the author, in the excellent volumes publiſhed by this ſociety. In his hiſtory of an aneuriſm of the aorta, contained in the firſt volume, 1757, he was the firſt to notice a peculiar form of this diſeaſe, occaſioned by the wounding of an artery through a vein, with which veſſel, after healing externally, the artery continues to maintain a communication. Of this diſeaſe he afterwards treated more at large (ſee Med. Obſ. and Inquir. vol. ii. and iv.); and it has been ſince named an *aneuriſmal varix*, at the ſuggeſtion of

Dr. Cleghorn. (Ibid. vol. iii.) In the ſecond volume, among ſeveral other papers, is the deſcription of a caſe of emphyſema, followed by ſome judicious practical remarks on the cellular membrane and its diſeaſes. He here maintained the opinion that the veſicles, in which the fat is depoſited, are different from the cells that contain water in anaſarca. In the fourth and fifth volumes he communicated his valuable obſervations relative to the retroverſion of the uterus, which ſometimes occurs in pregnancy, and is liable to produce a fatal event, if not remedied in time; a diſeaſe not underſtood till accurately deſcribed by Dr. Hunter. All his papers, publiſhed in the volumes alluded to, are worthy of attention.

In the year 1762 Dr. Hunter came forward as a controverſialiſt, and with a degree of aſperity, which has very commonly attended anatomical controverſies, maintained his claims to different anatomical diſcoveries. In his "Medical Commentaries," to which a "Supplement" was afterwards added, he ſupported the priority of his diſcoveries over thoſe of Dr. Monro, jun. profeſſor of anatomy at Edinburgh, in reſpect to the ducts of the lachrymal glands, injections of the teſticle, the origin and uſe of the lymphatic veſſels, and abſorption by veins. There is nothing more difficult to aſcertain, as Dr. Aikin has juſtly obſerved (Gen. Biog.), than the exact ſhare in the improvements of a progreſſional ſcience, due to the individuals who are ſimultaneouſly purſuing it, with equal ardour and advantages; nor is the determination of any conſequence to the ſcience itſelf. The great doctrine of the abſorbent action of the lymphatic ſyſtem, which is now fully received, at leaſt by the anatomiſts of Great Britain, was taught and illuſtrated at the ſame time in the ſchools of London and of Edinburgh, and exerciſed the ingenuity of Hunter, Monro, Hewſon, Cruickſhank, and other anatomiſts. Dr. Simmons has ſhewn, however, that the principal points of this ſyſtem had been ſtated, ſo long ago as the year 1726, by Mr. Noguez, in the ſecond edition of a work entitled "L'Anatomie du Corps de l'Homme en abrégé," printed at Paris. Who may have firſt ſucceeded in a lucky injection ſeems a matter ſcarcely worthy of conteſt; but Dr. Hunter was extremely tenacious of any claims of this kind, and would not ſuffer the interference even of his own brother. Some papers, in which a claim of Mr. John Hunter, relative to the connection between the placenta and uterus, was diſputed by the doctor in 1780, are preſerved in the archives of the Royal Society. In the "Commentaries" there are alſo ſome obſervations on the inſenſibility of the dura mater, perioſteum, tendons, and ligaments, as taught with ſome ſlight difference by Haller; and likewiſe "Obſervations on the State of the Teſtis in the Fœtus, and on the Hernia Congenita, by Mr. John Hunter."

The profeſſional reputation which Dr. Hunter had already attained was evinced by his being conſulted in the pregnancy of the queen, in 1762. Two years afterwards he was appointed phyſician extraordinary to her majeſty; a diſtinction for which he was indebted ſolely to his perſonal merit. In 1767 he was elected a fellow of the Royal Society; and in the following year he communicated to that body ſome obſervations on the bones found near the river Ohio, in America, which were commonly ſuppoſed to belong to the elephant. But he proved, chiefly from the ſtructure of the teeth, that they belonged to ſome unknown quadruped, of a different ſpecies. (Phil. Tranſ. vol. 58.) In the 60th and 61ſt volumes of the ſame publication, were printed a memoir on ſome foſſil bones, found in the rock of Gibraltar, and an account of the Nyl-ghau, a non-deſcript Indian animal. In 1768, Dr. Hunter was elected into the Society of Antiquaries, and was appointed by his majeſty to the office of profeſſor of anatomy to the Royal Academy of Arts, on its firſt inſtitution. This appointment opened a new field for the application of his anatomical knowledge, in relation to external form, as the object of painting and ſculpture. He engaged in it, as in every other purſuit of his life, with unremitting zeal, and the novelty and ingenuity of his obſervations diſplayed the extent and verſatility of his talents. Finally, he received other literary honours from learned ſocieties abroad; being choſen a foreign aſſociate of the Royal Medical Society of Paris in 1780, and of the Royal Academy of Sciences, in the ſame city, in 1782.

So early as the year 1751, Dr. Hunter had commenced a work, upon which he continued to beſtow inceſſant attention and great expence for ſeveral ſubſequent years; this was his ſplendid publication, "The Anatomy of the Gravid Uterus," which appeared in 1775, illuſtrated by 34 large engravings, executed from capital drawings of ſubjects and preparations, by the firſt maſters. This great work, not leſs admirable for its accuracy than for its magnificence, exhibited all the principal changes that occur in the nine months of pregnancy, in a degree of perfection which had never before been approached. In this work he firſt delineated the retroverted uterus, and the membrana decidua reflexa, which he himſelf diſcovered. He drew up a detailed anatomical deſcription of the figures, which he did not live to finiſh, but which was completed and publiſhed by his nephew, Dr. Baillie, in 1794, under the title of "Anatomical Deſcription of the Gravid Uterus and its Contents." In 1778 he publiſhed his "Reflections on the Section of the Symphyſis Pubis," an operation introduced by the French, but which the cooler judgment of Engliſh practitioners rejected upon the moſt ſolid grounds. Among Dr. Hunter's papers were found "Two Introductory Lectures" to his anatomical courſe, correctly written out, which were publiſhed in 4to. in 1785, and which complete the catalogue of his publications.

Having followed the courſe of Dr. Hunter's labours as a teacher and writer, we muſt go back a little in order to trace his progreſs in the foundation of a muſeum, which he deſtined for public uſe. His firſt deſire, when he commenced the practice of midwifery, was to acquire a ſufficient fortune to ſecure him eaſe and independence; and in a few years he found himſelf in poſſeſſion of this competency. As his wealth continued to accumulate, he formed the laudable deſign of employing his ſuperfluity in ſome ſcheme of public utility; and the foundation of an anatomical ſchool in the metropolis naturally ſuggeſted itſelf. About the year 1765, therefore, he preſented a memorial to the miniſter, Mr. Grenville, requeſting a grant of ground in the King's Mews, on which he offered to build a proper edifice at the expence of ſeven thouſand pounds, and to endow a profeſſorſhip of anatomy in perpetuity. This offer was received coldly; and after ſome delay Dr. Hunter purchaſed a ſpot of ground in Great Windmill ſtreet, on which he built a houſe, together with an anatomical theatre, and a muſeum, and removed thither from Jermyn ſtreet in 1770. The firſt furniture of the muſeum conſiſted of an extenſive collection of anatomical preparations, formed with great labour and expence; to which, however, he now added foſſils, ſhells, and other objects of natural hiſtory; a great treaſure of Greek and Latin books in the rareſt editions; and, laſtly, a cabinet of ancient coins and medals, which was collected progreſſively at the expence of upwards of 20,000*l*. A deſcription of part of the coins, in this collection, ſtruck by the free Greek cities, was publiſhed by his friend Mr. (now Dr.) Combe, under the title of "Nummorum Veterum Populorum et Urbium, qui in Muſeo Gulielmi Hunter aſſervantur, deſcriptio, figuris illuſtrata Opera et ſtudio Caroli Combe, S. R. et S. A.

Soc." 4to. 1783. An eaſy acceſs was always given to perſons who wiſhed to view and conſult this muſeum, and its reputation among foreigners reflected honour upon the capital containing it.

Dr. Hunter continued to teach and to practiſe in his profeſſion, with unabated aſſiduity, until March 1783, when an attack of a wandering gout, to which he was ſubject, obliged him to keep to the houſe for ſome days. A partial recovery induced him, contrary to the advice of his friends, to deliver a lecture; but the effort ſo much exhauſted him that he fainted away, and a ſlight paralytic attack followed in the night. His intellects remained clear, however, until death, and he ſurveyed its approach with ſo much tranquillity, that in his laſt moments he ſaid to Mr. Combe, "If I had ſtrength enough to hold a pen, I would write how eaſy and pleaſant a thing it is to die." He expired on the 30th of March 1783.

In perſon Dr. Hunter was ſlender, and rather below the middle ſtature. He was a man of mild and ſedate character, eaſy in converſation, engaging in his addreſs, ſteady in the purſuit of his objects, ſimple and regular in his mode of life. As a practitioner he was cautious, perhaps to the verge of timidity; but ſingularly qualified to inſpire confidence in his patients. As a lecturer he peculiarly excelled in the clearneſs of his demonſtrations. No man has ſo much contributed to the propagation of anatomical knowledge in this kingdom, and to the reputation of London as a ſchool for that ſcience. By his will he bequeathed to his nephew, Matthew Baillie, M. D. (his ſucceſſor as a teacher of anatomy, and now the moſt eminent phyſician in the metropolis, 1810,) his muſeum, for a term of 30 years, with a ſum for its augmentation, and annuities to three truſtees for the care of it, while in London. At the end of that period it was to go to Glaſgow: but Dr. Baillie has already had it removed to that univerſity ſome years before the completion of that term. See an Account of the life, &c. of Wm. Hunter, M. D. by Dr. S. F. Simmons, 1783. Gen. Biog.

Hunter, John, a very eminent ſurgeon, brother of the preceding, and youngeſt of the family, was born in July 1728. Being his mother's favourite, and his father, through age and indiſpoſition, being unable to pay much attention to him, he was brought up in a courſe of indulgence, which proved injurious both to his temper and his progreſs in learning. It was late and with great difficulty that he was taught to read; and after his father's death, he was left, at the age of 10, an ill-governed boy, neglecting his education, and ſpending his time in idleneſs and country amuſements. Yet he exhibited marks of an acute underſtanding and of a bold diſpoſition. As he appeared to have a mechanical turn, and ſome manual dexterity, he was ſent to Mr. Buchanan, a brother-in-law, lately ſettled in Glaſgow, as a carpenter and cabinet-maker; but the want of ſucceſs in this perſon's buſineſs left young Hunter again unemployed. Having heard of the reputation which his brother William was now acquiring in London, he wrote to requeſt permiſſion to viſit him, and to try to make himſelf uſeful as an anatomical aſſiſtant, or, if that ſhould be refuſed, to enter the army. The offer was readily embraced by William, and John arrived in London in September 1748, juſt before the commencement of the winter courſe of lectures. His firſt eſſays in diſſection ſatisfied his brother of the certainty of his ultimate proficiency in anatomy, which he cultivated with ſuch ſucceſs, as to be capable of undertaking the demonſtrations to the pupils in the diſſecting room in the following winter. In the ſummer months he attended the practice of ſurgery at the Chelſea hoſpital, under Mr. Cheſelden, and afterwards at St. Bartholomew's and St. George's hoſpitals, of which laſt he was appointed houſe-ſurgeon in 1756. It does not appear with what intention he was entered as a gentleman-commoner at St. Mary's hall, Oxford, in 1753. Literary diſtinction ſeems never to have been his ambition, nor indeed within his reach. This probably he ſoon diſcovered; for we find no intermiſſion of his profeſſional purſuits in London. In the winter of 1755, Dr. Hunter admitted him to a partnerſhip in his lectures. He applied himſelf to diſſection, and to making anatomical preparations, with unexampled ardour and perſeverance, in which he was highly uſeful to his brother's collection. Having thus laboured for ten years in the inveſtigation of human anatomy, he turned his inquiries to the anatomy of other animals, with a view to elucidate the uſe of the different organs, by a comparative view of their ſtructure, and thus to acquire a more certain knowledge of the general principles of the animal economy. He proſecuted theſe reſearches with the ardour of an enthuſiaſt, and ſuffered no opportunity of examining animals of every deſcription to eſcape him. His health was ſo much impaired, however, by this exceſſive application, that in the year 1760 he went abroad as ſurgeon on the ſtaff, and ſerved during the war in Belle-iſle and in Portugal, where he acquired his knowledge of gun-ſhot wounds. On his return in 1763, he ſettled as a ſurgeon in London, and added to the ſcanty income derived from his practice, by teaching practical anatomy and operative ſurgery for ſeveral winters. His ardour for comparative anatomy continued unabated; and for the greater facility of carrying on his experiments, he purchaſed a piece of ground at Earl's Court, Brompton, where he built a houſe. Here he kept ſeveral foreign animals, of whoſe manners and habits he was a ſedulous obſerver, and ſubſequently made his obſervations and experiments relative to the economy of the bee, the ſilk-worm, and other inſects; to the progreſs of incubation in the egg; to the growth of vegetables; to the tranſplanting of teeth into the combs of cocks, &c. &c. with the deſcription of which he enriched the volumes of the Philoſophical Tranſactions, and with his preparations formed that unrivalled muſeum, of which we ſhall preſently ſpeak. He was elected a member of the Royal Society in 1767; and, in order to promote ſcientific improvement more effectually than could be done by formal meetings, he was the means of aſſociating ſome of the moſt active members in a converſation party at a coffee-houſe, after the public buſineſs of the ſociety was ended. This at firſt conſiſted only of Dr. G. Fordyce, Mr. Cumming, and himſelf; but they were ſoon joined by ſir Joſeph Banks, Dr. Solander, Dr. Maſkelyne, &c.

When Dr. Hunter removed to his new eſtabliſhment in Windmill-ſtreet, he aſſigned the leaſe of his houſe in Jermyn-ſtreet to Mr. Hunter. About the ſame time Mr. Hunter became a member of the corporation of ſurgeons, and, through his brother's intereſt, was elected one of the ſurgeons to St. George's hoſpital. In 1771, finding his buſineſs increaſing with his reputation, he married a lady to whom he had been long engaged, the eldeſt daughter of Mr. Home, a military ſurgeon, and ſiſter to the preſent Mr. Everard Home. She was a perſon of elegant accompliſhments, and has lately obliged the public with a volume of poems. His houſe was now frequented by medical ſtudents, who came to finiſh their education in London, and who were deſirous of a reſidence in a ſituation ſo favourable to their improvement. Among others of his pupils, who have ſince attained to profeſſional eminence, we may mention the name of Jenner, immortalized by the diſcovery of the preventive powers of the cow-pox. In 1771 he publiſhed his firſt work, "On the Natural Hiſtory of the Teeth," in 4to. It diſplayed great accuracy of reſearch, and was illuſtrated with excellent plates. In 1773 he commenced a courſe of lectures on the theory and principles of ſurgery, in which he brought forward many peculiar opinions, expreſſed in a peculiar language, which he introduced into phyſiological and pathological ſcience. Part of the peculiarity of his language, however, muſt be attributed to his want of a regular literary education, and aroſe from his miſconception of its proper uſe; and to the ſame defect muſt be aſcribed his failure to acquire that methodical arrangement of his ideas, and clearneſs and facility in expreſſing them, for which his brother was ſo much diſtinguiſhed. However, he was a real improver of his profeſſion, both in a theoretical and practical view. He ſuggeſted new methods of treatment in ruptures of the tendo Achillis, in the operation for hydrocele, and for fiſtula lachrymalis, &c.; but the moſt important of his chirurgical improvements was the method of operating for the popliteal aneuriſm, by taking up the femoral artery on the anterior part of the thigh.

In the year 1776, Mr. Hunter was appointed ſurgeon-extraordinary to his majeſty. In 1778 he publiſhed the ſecond, or practical part, of his "Treatiſe on the Teeth," in which their diſeaſes were conſidered. Soon afterwards, he was elected a member of the Royal Society of Gottenburgh, and of the Royal Medical Society, and Royal Academy of Surgery, at Paris. In the year 1783, the term of his leaſe in Jermyn-ſtreet expiring, and his collection being now too large to be contained in his dwelling-houſe, he purchaſed the leaſe of a large houſe on the eaſt ſide of Leiceſter-ſquare, with premiſes extending to Caſtle-ſtreet, on which he erected a ſpacious building for his muſeum, at a coſt much beyond the dictates of prudence. Had his age and ſtate of health, indeed, juſtified the expectation of a long continuance of the emoluments which were beginning to flow in upon him, no expenditure connected with his fame could have been thought cenſurable. At this period his faculties of body and mind ſeem to have been exerted to the utmoſt, and every moment had its full employ. He was now engaged in a very extenſive private practice; he was ſurgeon to St. George's hoſpital; he was giving a long courſe of lectures in the winter; he was carrying on his inquiries in comparative anatomy, and adding to his muſeum; he had a ſchool of practical anatomy in his own houſe, and was conſtantly employed in ſome experiments reſpecting the animal economy. The poſt of deputy ſurgeon-general to the army was conferred upon him in 1786; and in the ſame year his great and long-expected work "On the Venereal Diſeaſe" made its appearance. Few medical performances have been more read; but it underwent ſome ſevere criticiſms, both theoretical and practical: nevertheleſs it will ever remain a monument to his extraordinary ſagacity and talent of obſervation. He alſo publiſhed in this year, "Obſervations on various Parts of the animal Economy," chiefly compoſed of papers already printed in the Philoſophical Tranſactions. In the ſpring of this year Mr. Hunter was ſeized with a ſevere illneſs, from which he recovered ſlowly, and which left his conſtitution impaired; he became ſubject eſpecially to an affection of the heart, which came on upon every violent agitation of the mind, or ſudden exertion of the body. In 1790 he was appointed inſpector-general of hoſpitals, and ſurgeon-general to the army, which gave him much additional occupation; and he then reſigned his courſe of lectures to his brother-in-law, Mr. Home, ſtill employing all his little leiſure in ſcientific purſuits. From the autumn of this year, however, the ſeries of ſpaſmodic and other uneaſy ſymptoms, connected with the affection of the heart, and conſtituting what is named angina pectoris, which had for ſome time haraſſed him, increaſed conſiderably in violence, and to himſelf and others portended a ſuddenly fatal termination. During the years 1791 and 1792, he had many ſevere attacks, but of not more than a few hours duration. On the 16th of October 1793, when in his uſual ſtate of health, he went to St. George's hoſpital, where ſomething occurred which irritated him, but of the circumſtances of which he was not perfectly maſter. He therefore withheld his ſentiments, and withdrew into the next room, where, in the act of turning round to one of the phyſicians, he gave a deep groan, and dropped down dead.

On diſſection, the heart was found to be the principal ſeat of diſeaſe. That organ appeared as if ſhrunk in its ſize; the coronary arteries, which ramify in its ſubſtance, were completely oſſified, or in the ſtate of bony tubes; and the valves were in a ſtate of incipient oſſification.

Mr. Hunter was a man of a warm and impatient temper, but open and undiſguiſed. He was naturally cheerful and ſocial; and his countenance bore the ſtamp of frankneſs and animation, though in his latter years it was deeply impreſſed with thoughtfulneſs. The admirable print of him, from a portrait by ſir Joſhua Reynolds, ſtrongly confirms the judgment made of it by Lavater: "This man thinks for himſelf." In originality of genius and powers of inveſtigation, he appears to have ſurpaſſed his brother; induſtry and perſeverance equally belonged to both.

In order to avoid interruption to the biographical narrative, we have omitted to notice the very numerous and important papers which Mr. Hunter preſented to the Royal Society, in rapid ſucceſſion, eſpecially between the years 1773 and 1783, chiefly relating to comparative anatomy and phyſiology; nor have we room at preſent to enumerate their titles. His fame, however, will principally reſt upon his various diſcoveries in this branch of ſcience; and it would be injuſtice to his character not to deſcribe, as amply as our limits will admit, the anatomical muſeum, the formation of which may be regarded as having been the main object of his life. In its plan it was abſolutely unique, and the perfection to which he brought it rendered it the admiration of all who were capable of judging of its value. It embraced the grand deſign of expoſing to view the gradations of nature, from the moſt ſimple ſtate in which life is found to exiſt, to the moſt perfect and complete piece of animal mechaniſm, that of man. This collection of anatomical facts, is arranged according to the functions they are intended to illuſtrate, the different parts of animal bodies intended for ſimilar uſes being brought together in ſeries, ſo that the various links in the chain of perfection are readily followed, and clearly underſtood. This arrangement comprehends four great orders: the *firſt*, parts conſtructed for motion; *ſecond*, parts eſſential to animals reſpecting their own internal economy and preſervation; *third*, parts ſuperadded for purpoſes connected with external objects; and, *fourth*, parts for the propagation of the ſpecies, and the maintenance of the young. The *firſt order* exhibits the fluids of living bodies in a ſeries, from the ſimple colourleſs ſap of ſome vegetables to the coloured and coagulating blood;—the muſcles, from the ſtraight ſimple muſcle to the moſt complicated ſtructure with elaſtic ligaments;—the growth of bone, horn, ſhell, &c.;—and the varieties of joints. The *ſecond order* comprehends the organs of digeſtion, beginning with the hydatid, which is itſelf a ſimple pouch, and paſſing to the polypus, the leech, and more complicated animals, including a ſeries of ſtomachs, of inteſtinal canals, and of the glands connected with them, as livers, ſpleens, &c. After the organs of digeſtion follows the ſyſtem of abſorbing veſſels, from the roots of plants up to the lacteals and lymphatics of different animals. The next ſtep is to the heart, which, in the caterpillar is a ſimple canal, and receives various additions as we aſcend in the ſcale, until we find it a double heart in man and quadrupeds : this leads to the ſtructure of arteries and veins. Then the lungs are ſhewn in all their gradations, from the ſimple vaſcular lining of the egg-ſhell, which ſerves as lungs for the chicken, to thoſe of the more perfect animals, including gills, &c. The windpipe and organs of voice are ſhewn under their different forms. And, laſtly, the kidnies are exhibited, which ſeparate the ſuperfluous fluids from the circulation. The *third order* takes up the brain from its ſimpleſt ſtate in the leech, to the ſnail, inſects, fiſh, &c. upwards;—the varieties of all the organs of ſenſe in the different tribes of living things ; and, laſtly, the external coverings of hair, feathers, ſcales, &c. ; the weapons of offence and defence, as ſpurs, hoofs, horns, ſtings, and electric organs. As an appendix to this order, ſome peculiar ſtructures are added, ſuch as the air-bladder in fiſh, &c. The *fourth order* includes all the variety of parts connected with the proceſs of generation in plants and animals, from the polypus and coral, to the perfect animals ;—thoſe of females in the maiden and impregnated ſtate, including the products of ſeeds, ſpawn, eggs, &c. ; the progreſs of incubation ; the peculiarities of the fœtus ; and the various organs for the nouriſhment of the young. This ſketch gives a very inadequate idea of the amazing number of objects, from every department of nature, which the collection compriſed ; but it contains, beſides, a large ſeries of whole animals, arranged according to their internal ſtructure, many of them the rareſt ever brought into this country ; ſuch as the camelopard, hippopotamus, &c. It comprehends, moreover, a ſeries of ſkulls of different animals, and ſkeletons of almoſt every known genus ;—an immenſe number of calculi, urinary, biliary, and inteſtinal ;—a large collection of ſhells and inſects ;—and a moſt complete aſſortment of extraneous foſſils. By his will, Mr. Hunter directed that this muſeum ſhould be offered to the purchaſe of government ; and, after ſome negociation, it was bought for the public uſe for the ſum of 15,000*l.* and given to the college of ſurgeons, on condition of expoſing it to public view on certain days in the week, and giving a ſet of annual lectures explanatory of its contents. A large building for its reception has been completed in Portugal-ſtreet, connected with the college of ſurgeons, in Lincoln's-Inn-Fields ; and in the ſpring of the preſent year (1810) the firſt courſe of lectures was delivered by Mr. Home and ſir William Blizard.

At the time of his death, Mr. Hunter had made conſiderable progreſs in the printing of " A Treatiſe on the Blood, Inflammation, and Gun-ſhot Wounds," which was publiſhed in 1794, under the inſpection of Mr. Home, who prefixed a biographical account of the author. See this Account ; alſo Gen. Biog.

HUNTER, HENRY, a popular preacher and writer, was born at Culroſs, in Perthſhire, in the year 1741. He had the beſt education that the circumſtances of his parents would permit, and at the age of thirteen was ſent to the univerſity of Edinburgh, where, by his talents and proficiency, he attracted the notice of the profeſſors, and at the age of ſeventeen he was appointed tutor to Mr. Boſwell, afterwards one of the lords of ſeſſion. When he left Edinburgh he accepted the office of tutor to lord Dundonald's ſons at Culroſs abbey. In 1764 he was licenſed to preach, having paſſed the ſeveral trials with great applauſe : and very quickly became much followed on account of his popular pulpit talents. He was ordained in 1766, and was appointed miniſter of South Leith. On a viſit to London in 1769, he preached in moſt of the Scotch meeting-houſes with great acceptance, and ſoon after his return he received an invitation to become paſtor of the Scotch church in Swallow-ſtreet, which he declined ; but in 1771 he removed to London, and undertook the paſtoral office in the Scotch church at London Wall. He appeared firſt as an author in 1783, by the commencement of his " Sacred Biography," which was at length extended to ſeven volumes octavo. While this work was in the courſe of publication, he engaged in the tranſlation of Lavater's " Eſſays on Phyſiognomy," and in order to render his work as complete as poſſible, he took a journey into Swiſſerland, for the purpoſe of procuring information from Lavater himſelf. He attained, in ſome meaſure, his object, though the author did not receive him with the cordiality which he expected, ſuſpecting that the Engliſh verſion muſt injure the ſale of the French tranſlation. The firſt number of this work was publiſhed in the year 1789, and it was finiſhed in a ſtyle of reſpectability worthy the improved ſtate of the arts. From this period Dr. Hunter ſpent much of his time in tranſlating different works from the French language. In the year 1790 he was elected ſecretary to the correſponding board of the " Society for propagating Chriſtian Knowledge in the Highlands and Iſlands of Scotland." He was likewiſe chaplain to the " Scotch Corporation," and both theſe inſtitutions were much benefited by his zealous exertions in their behalf. In the year 1795, he publiſhed two volumes of ſermons, and in 1798 he gave the world eight " Lectures on the Evidences of Chriſtianity," being the completion of a plan begun by Mr. Fell. The whole contains a popular and uſeful elucidation of the proofs in favour of the Chriſtian religion, ariſing from its internal evidence, its beneficial influence, and the ſuperior value of the information which it conveys with reſpect to futurity. During the latter years of his life, Dr. Hunter's conſtitution ſuffered the ſevereſt ſhocks from the loſs of three children, which, with other cauſes, contributed to render him unable to withſtand the attacks of diſeaſe. He died at the Hot-Wells, Briſtol, on the 27th of October 1802, in the 62d year of his age. Dr. Hunter was a man of learning : his writings are eloquent, and ſhew how well he had ſtudied human nature. In the pulpit his manner was unaffected, ſolemn and impreſſive. He indulged his liberal and friendly heart in the exerciſe of hoſpitality, charity, and the pleaſures of ſocial intercourſe, frequently beyond the limits which a regard to prudence and economy ſhould have preſcribed. He was the tranſlator of " Letters of Euler to a German Princeſs, on different Subjects in Phyſics and Philoſophy ;" " The Studies of Nature by St. Pierre ;" " Saurin's Sermons ;" " Sonnini's Travels." Miſcellaneous pieces and ſermons of his own have been publiſhed ſince his death, to which are prefixed Memoirs : from theſe the foregoing particulars have been taken. Dr. Hunter, about the year 1796 or 7, begun " A Hiſtory of London and its Environs," which came out in parts, and which has lately been finiſhed by other editors. It makes two large quarto volumes.

HUNTER, a name given to a horſe qualified to carry a perſon in the chaſe. The ſhape of the horſe deſigned for this ſervice, ſhould be ſtrong and well knit together, as the jockies expreſs it. Irregular or unequal ſhapes in theſe creatures are always a token of weakneſs. The inequalities in ſhape which ſhew a horſe improper for the chaſe, are the having a large head and a ſmall neck, a large leg and a ſmall foot, and the like. The head of the hunter ſhould, indeed, always be large, but the neck ſhould alſo be thick and ſtrong to ſupport it. The head ſhould be lean, the noſtrils wide, and the wind-pipe ſtraight.

The whole ſhape of a horſe intended for a hunter ſhould be this : the ears ſhould be ſmall, open, and pricked ; or though they be ſomewhat long, yet if they ſtand up erect, and bold, like thoſe of a fox, it is a ſign of toughneſs or hardineſs. The forehead ſhould be long and broad, not flat; or, as it is uſually termed, mare-faced, but riſing in the middle like that of a hare; the feather ſhould be placed above the eye, the contrary being thought by ſome to threaten blindneſs. The eyes ſhould be full, large and bright; the noſtrils not only large, but looking red and freſh within; for an open and freſh noſtril is always eſteemed a ſign of a good wind. The mouth ſhould be large, deep in the wicks, and hairy. The wind-pipe ſhould be large, and appear ſtraight when he bridles his head; for if, on the contrary, it bends like a bow on his bridling, it is not formed for a free paſſage of the breath. This defect in a horſe is expreſſed among the dealers by the phraſe cock-throppled. The head ſhould be ſo ſet on to the neck, that a ſpace may be felt between the neck and the chine; when there is no ſuch ſpace, the horſe is ſaid to be bull-necked, and this is not only a blemiſh in the beauty of the horſe, but it alſo occaſions his wind not to be ſo good. The creſt ſhould be ſtrong, firm, and well riſen; the neck ſhould be ſtraight and firm, not looſe and pliant; the breaſt ſhould be ſtrong and broad; the ribs round like a barrel, the fillets large; the buttocks rather oval than broad; the legs clean, flat, and ſtraight; and, finally, the mane and tail ought to be long and thin, not ſhort and buſhy, the laſt being counted a mark of dulneſs. When a hunter is thus choſen, and has been taught ſuch obedience, that he will readily anſwer to the rider's ſignals, both of the bridle and hand, the voice, the calf of the leg, and the ſpurs; that he knows how to make his way forward, and has gained a true temper of mouth, and a right placing of his head, and has learned to ſtop and to turn readily, if his age be ſufficiently advanced, he is ready for the field. It is a rule with all ſtaunch ſportſmen, that no horſe ſhould be uſed in hunting till he is full five years old; ſome will hunt them at four, but the horſe at this time is not come up to his true ſtrength and courage, and will not only fail at every tough trial, but will be ſubject to ſtrains and accidents of that kind, much more than if he were to be kept another year firſt, when his ſtrength would be more confirmed.

When the hunter is five years old, he may be put to graſs from the middle of May till Bartholomew-tide; for the weather between theſe is ſo hot, that it will be very proper to ſpare him from work. At Bartholomew-tide the ſtrength of the graſs beginning to be nipped by froſts and cold dews, ſo that it is apt to engender crudities in the horſe, he ſhould be taken up while his coat is yet ſmooth and ſleek, and put into the ſtable. When he is firſt brought home, he ſhould be put in ſome ſecure and ſpacious place, where he may evacuate his body by degrees, and be brought, not all at once, to warm keeping; the next night he may be ſtabled up. It is a general rule with many not to clothe and ſtable up their horſes till two or three days after they are taken from graſs, and others who put them in the ſtable after the firſt night, yet will not dreſs and clothe them till three or four days afterward; but all this, except the keeping the horſe one day in a large and cool place, is needleſs caution.

There is a general practice among the grooms, in many places, of giving their hunters wheat-ſtraw as ſoon as they take them up from graſs. They ſay they do this to take up their bellies; but there ſeems much reaſon to diſapprove of this. The change is very violent, and the nature of the ſtraw ſo heating and drying, that there ſeems great reaſon to fear that the aſtringent nature of it would be prejudicial, more than is at firſt perceived. It is always found that the dung is hard after this food, and is voided with pain and difficulty, which is in general very wrong for this ſort of horſe. It is better, therefore, to avoid this ſtraw-feeding, and to depend upon moderate airing, warm cloathing, and good old hay, and old corn, than to have recourſe to any thing of this kind.

When the horſe has evacuated all his graſs, and has been properly ſhod, and the ſhoes have had time to ſettle to his feet, he may be ridden abroad, and treated in this manner: the groom ought to viſit him early in the morning, at five o'clock in the long days, and at ſix in the ſhort ones; he muſt then clean out the ſtable, and feel the horſe's neck, flank, and belly, to find the ſtate of his health, if the flank feels ſoft and flabby, there is a neceſſity of good diet to harden it, otherwiſe any great exerciſe will occaſion ſwellings and goutineſs in the heels. After this examination, a handful or two of good old oats, well ſifted, ſhould be given him; this will make him have more inclination to water, and will alſo make the water ſit better on his ſtomach than if he drank faſting. After this he is to be tied up and dreſſed. If in the doing of this he opens his mouth, as if he would bite, or attempts to kick at the perſon, it is a proof that the teeth of the curry-comb are too ſharp, and muſt be filed blunter. If after this he continues the ſame tricks, it is through wantonneſs, and he ſhould be corrected for it with the whip. The intent of currying being only to raiſe the duſt, this is to be bruſhed off afterwards with a horſe-tail nailed to a handle, or any other light bruſh. Then he is to be rubbed down with the bruſh, and duſted a ſecond time; he ſhould then be rubbed over with a wet hand, and all the looſe hairs, and whatever foulneſs there is, ſhould be picked off. When this is done, and he is wiped dry as at firſt, a large ſaddle-cloth is to be put on, reaching down to the ſpurring-place; then the ſaddle is to be put on, and a cloth thrown over it, that he may not take cold; then rub down his legs, and pick his feet with an iron picker, and let the mane and tail be combed with a wet mane-comb. Laſtly, it is a cuſtom to ſpurt ſome beer into his mouth juſt before the leading him out of the ſtable. He ſhould then be mounted, and walked a mile at leaſt to ſome running water, and there watered; but he muſt only be ſuffered to take about half his water at one drinking.

It is the cuſtom of many to gallop the horſe at a violent rate as ſoon as he comes out of the water, but this is extremely wrong for many reaſons. It endangers the breaking a horſe's wind more than any other practice, and often has been the occaſion of burſting very good horſes. It uſes them alſo to the diſagreeable trick we find in many horſes, of running away as ſoon as ever they come out of the water; and with ſome it makes them averſe to drinking, ſo that they will rather endure thirſt, and hurt themſelves greatly by it, than bring on the violent exerciſe which they remember always follows it. The better way is to walk him a little after he is out of the water, then put him to a gentle gallop for a little while, and after this to bring him to the water again. This ſhould be done three or four times, till he will not drink any more. If there is a hilly place near the watering place, it is always well to ride up to it; if otherwiſe, any place is to be choſen where there is free air and ſun. That the creature may enjoy the benefit of this, he is not to be gallopped, but walked about in this place an hour, and then taken home to the ſtable. The pleaſure the horſe himſelf takes in theſe airings, when well managed, is very evident, for he will gape, yawn, and ſhrug up his body; and in theſe, whenever he would ſtand ſtill to ſtale, dung, or liſten to any noiſe, he is not to be hindered from it, but encouraged in every thing of this kind.

The advantages of theſe airings are very evident; they purify the blood, teach the creature how to make his breathing agree with the reſt of the motions of his body, and give him an appetite to his food, which hunters and racers, that are kept ſtalled up, are otherwiſe very apt to loſe. On returning from airing, the litter of the ſtable ſhould be freſh, and by ſtirring this, and whiſtling, he will be brought to ſtale. Then he is to be led to his ſtall, and tied up, and again carefully rubbed down; then he ſhould be covered with a linen cloth next his body, and a canvas one over that, made to fit him, and reaching down to his legs. This, as the duke of Newcaſtle obſerves, is a cuſtom which we learnt of the Turks, who are, of all people, the moſt nice and careful of their horſes. Over this covering there ſhould be put a body-cloth of ſix or eight ſtraps; this keeps his belly in ſhape, and does not hurt him. This cloathing will be ſufficient while the weather is not very ſharp, but in ſevere ſeaſons, when the hair begins to riſe and ſtart in the uncovered parts, a woollen cloth is to be added, and this will always prove fully ſufficient.

Different horſes and different ſeaſons make a variety of the degree of cloathing neceſſary; but there always is an obvious rule to point out the neceſſary changes, the roughneſs of the coat being a mark of the want of cloathing, and the ſmoothneſs of it a proof that the cloathing is ſufficient. Therefore, if at any time the hair is found to ſtart, it is a notice that ſome farther cloathing is to be added.

If the horſe ſweat much in the night, it is a ſign that he is over-fed, and wants exerciſe; this, therefore, is eaſily remedied. An hour or more after the horſe is come in from his airing, the groom ſhould give him a whiſp of clean hay, making him eat it out of his hand: after this let the manger be well cleaned out, and a quartern of oats clean ſifted be given him. If he eats up this with an appetite, he ſhould have more given him; but if he is ſlow and indifferent about it, he muſt have no more. The buſineſs is to give him enough, but not to cloy him with food.

If the horſe gets fleſh too faſt on this home feeding, he is not to be ſtinted to prevent it, but only his exerciſe increaſed; this will take down his fleſh, and at the ſame time give him ſtrength and wind. After the feeding in the morning is over, the ſtable is to be ſhut up, only leaving him a little hay on his litter. He need be no more looked at till one o'clock, and then only rubbed down, and left again till the time of his evening watering, which is four o'clock in the ſummer, and three in the winter. When he has been watered, he muſt be kept out an hour or two, or more, if neceſſary, and then taken home and rubbed as after the morning watering. Then he is to have a feed of corn at ſix o'clock, and another at nine at night; and being then cleaned, and his litter put in order, and hay enough left for the night, he is to be left till morning. This is the direction for one day, and in this manner he is to be treated every day for a fortnight, at the end of which time his fleſh will be ſo hardened, his wind ſo improved, and his mouth ſo quickened, and his gallop brought to ſo good a ſtroke, that he will be fit to be put to moderate hunting. During the time that he is uſed to hunting, he muſt be ordered on his days of reſt exactly as he is directed for the fortnight when he is in preparation; but as his exerciſe is now greatly increaſed, he muſt be allowed a more ſtrengthening food, mixing ſome old ſplit beans at every feeding with his oats.

And if this is not found to be ſufficient, the following bread muſt be given: let two pecks of old beans, and one peck of wheat be ground together, and made into an indifferently fine meal; then knead it into dough, with ſome warm water, and a good quantity of yeaſt: let it lie a time that it may riſe and ſwell, which will make the bread the lighter; then make it into loaves of a peck each, and let it be baked in a ſlow oven, that it may be thoroughly done, without being burnt; when it is taken out of the oven, it muſt be ſet, bottom upwards, to cool; when it is one day old, the cruſt is to be chipped off, and the crumb given him for food. When this is ready, he ſhould have ſome of it at leaſt once in the day; but it is not to be made the only food, but ſome feeds are to be of oats alone; ſome of oats and this bread, and ſome of oats and beans mixed together. The making a variety in this manner, being the beſt of all methods of keeping up the appetite, which is often apt to fail.

The day before the horſe is to hunt, he muſt have no beans, becauſe they are hard of digeſtion, but only ſome oats with this bread; or if he will be brought to eat the bread alone, that will be beſt of all. His evening feed ſhould, on this day, be ſomewhat earlier than uſual; and after this, he is only to have a whiſp of hay out of the groom's hand till he return from hunting.

The hunter, in order to his behaving well in the field, ought to have great care and indulgence in the ſtable: he ought to have as much reſt and quiet as may be, to be kept well ſupplied with good meat, clean litter, and freſh water by him; he ſhould be often dreſſed, and ſuffered to ſleep as much as he pleaſes. He ſhould be ſo fed that his dung may be rather ſoft than hard, and it muſt be of a bright and clean colour. All this may be eaſily managed by the continual obſervance and change of his food, as occaſion requires. After his uſual ſcourings he ſhould have exerciſes and maſhes of ſweet malt, or bread and beans; or wheat and beans mixed together, are to be his beſt food, and beans and oats his worſt.

Some very great ſportſmen are for keeping their horſes out at graſs all the buck-hunting ſeaſon, never taking them up into the ſtable at all, but allowing them in the field as much oats with their graſs as they will eat. The horſe may be thus rid three days in the week for the whole ſeaſon, and never damaged by it, nor ever ſhewing any marks of harm afterwards.

Hunter's *Bay*, or *Rigg bay*, in *Geography*, a bay of Scotland, on the E. coaſt of the county of Wigton.

Hunter's *Town*, a town, or village, of Pennſylvania, ſituated in York county; 25 miles W. by S. of York town.

HUNTERDON, a county of New Jerſey, in America, bounded N. by that of Morris, E. by Somerſet, S.E. by Burlington, S.W. and W. by Delaware river, which ſeparates it from the ſtate of Pennſylvania, and N.W. by Suſſex county; about 40 miles long and 32 broad, divided into 10 townſhips, containing 21,261 inhabitants, including 1220 ſlaves. On Muſkonetcong mountain in this county, is a ſtrong chalybeate ſpring, to which many perſons reſort; it iſſues from the ſide of an eminence into an artificial reſervoir, for the accommodation of thoſe who wiſh to bathe in, as well as to drink, the waters. The chief town of the county is Trenton.

HUNTING, the art, or act, of purſuing and chaſing beaſts of game. See Game.

In its general ſenſe, hunting includes the purſuit both of hairy and feathered game; but in its more proper and reſtrained ſignification, it is only applicable to beaſts of venery and chaſe.

F. De Launay, formerly profeſſor of the French laws, has an expreſs treatiſe of hunting.

The antiquity of hunting may be traced back upwards of

2600 years before the Chriſtian era. The ſacred hiſtory deſcribes the firſt warriors under the name of hunters. Thus Nimrod is repreſented as "a mighty hunter before the Lord." (Gen. x. 9.) In the ſequel, he made ſoldiers of his companions, who had aſſiſted him in hunting and deſtroying the ſavage beaſts that laid waſte the country about Babylon, and employed them in extending and eſtabliſhing his conqueſts.

> "Bold Nimrod firſt the lion's trophies wore,
> The panther bound, and lanc'd the briſtling boar:
> He taught to turn the hare, to bay the deer,
> And wheel the courſer in his mid career." Tickell.

We find, that among the more civilized nations, as the Perſians, Greeks, and Romans, it always made one of their genteeler diverſions; and as to the wilder and more barbarous, it ſerved them with food and neceſſaries. The Roman juriſprudence, which was formed on the manners of the firſt ages, made a law of it, and eſtabliſhed it as a maxim, that as the natural right of things which have no maſter belongs to the firſt poſſeſſor; wild beaſts, birds, and fiſhes, are the property of him, whoever he be, that can firſt take them.

But the northern nations of barbarians, who over-ran the Roman empire, bringing with them a ſtronger taſte for the diverſion, and the people being now poſſeſſed of other, and more eaſy means of ſubſiſtence from the lands and poſſeſſions of thoſe they had vanquiſhed; their chiefs and leaders began to appropriate the right of hunting, and, inſtead of a natural right, to make it a royal one. Thus it continues to this day, the right of hunting, among us, belonging only to the king, and thoſe who derive it from him.

And hence have ariſen all our laws and charters of the foreſt, laws and regulations for preſervation of the game, &c. See FOREST, GAME, and TRESPASS.

The hunting uſed by the ancients was much like that now practiſed for the rein deer; which is ſeldom hunted at force, or with hounds; but only drawn with a blood-hound, and foreſtalled with nets and engines. Thus did they with all beaſts; whence a dog is never commended by them for opening, before he has diſcovered where the beaſt lies: hence they were not in any manner curious as to the muſic of their hounds, or the compoſition of their kennel or pack, either for deepneſs, loudneſs, or ſweetneſs of cry, which is become a principal point in the hunting of our days.

Their huntſmen, indeed, were accuſtomed to ſhout and make a great noiſe, as Virgil obſerves in the third of his Georgics: "ingentem clamore premes ad retia cervum." But that clamour was only to bring the deer to the nets laid for him.

The Sicilian way of hunting had ſomething in it very extraordinary. The nobles or gentry being informed which way a herd of deer paſſed, gave notice to one another, and appointed a meeting; every one bringing with him a croſsbow or long-bow, and a bundle of ſtaves, ſhod with iron, the heads bored, with a cord paſſing through them all: thus provided they came to the herd, and caſting themſelves about in a large ring, ſurrounded the deer. Then, each taking his ſtand, unbound his faggot, ſet up his ſtake, and tied the end of his cord to that of his next neighbour, at the diſtance of ten feet from one another. Then taking feathers dyed in crimſon, and faſtened on a thread, they tied them to the cord; ſo that with the leaſt breath of wind they would whirl round. Which done, the perſons who kept the ſtands withdrew, and hid themſelves in the next covert. Then the chief ranger entering within the line with hounds to draw after the herd, rouſed the game with their cry; which flying towards the line, were turned off, and ſtill gazing on the ſhaking and ſhining feathers, wandered about as if kept in with a real wall or pale. The ranger ſtill purſued, and calling every perſon by name, as he paſſed by their ſtand, commanded him to ſhoot the firſt, third, or ſixth, as he pleaſed; and if any of them miſſed, or ſingled out another than that aſſigned him, it was counted a grievous diſgrace. By ſuch means, as they paſſed by their ſeveral ſtations, the whole herd was killed by the ſeveral bands.

Hunting conſtituted a great part of the employment of the ancient Germans and alſo of the Britons, when the more furious occupations of war did not engage their attention. This was not merely an amuſement to which, in many caſes, the ferocity of their temper actually inclined them, but it was the principal means by which, in the uncultivated ſtate of the countries which they inhabited, they procured their ſubſiſtence. Such was the caſe ſo late as the third century with thoſe unconquered Britons who lived beyond Adrian's wall. With the Celtic nations hunting, to which they were inordinately attached, ſerved as a preparatory diſcipline for war; and it has anſwered the ſame purpoſe in many other nations, which we have been accuſtomed to denominate barbarous. So general and ſo ardent was the attachment to hunting among the ancient Britons, that, whilſt the chieftains practiſed it in order to prepoſſeſs their miſtreſſes with a favourable opinion of their valour and agility, young ladies of diſtinguiſhed rank and beauty devoted much of their time to the chaſe. On account of the general prevalence of this paſtime, and its apprehended injury to the general intereſts of ſociety, the liberty of the chaſe has been more or leſs reſtrained from early ages, and kings and princes have ſucceſſively augmented their aſſumed rights in hunting; claiming to themſelves the primitive and ſole title to hunt, and controlling their nobles, and all perſons of inferior rank, from enjoying this amuſement, unleſs, as we have before obſerved, the privilege was granted by them, and liable to be revoked at their will. Hence aroſe the numerous and ſevere reſtraints and penalties of the game laws. See GAME.

Among the Mexicans hunting was a favourite exerciſe; and in purſuing it they uſed, with ſingular dexterity, bows and arrows, darts, nets, ſnares, and a kind of tubes, through which they ſhot out, by blowing, little balls at birds. Thoſe inſtruments, of this kind, that were uſed by their kings and great men, were curiouſly carved and painted, and adorned with ſilver and gold. Beſides their private hunting exerciſes, in which they engaged for amuſement or ſubſiſtence, they had alſo hunting matches, either appointed by the king, or undertaken with a view of providing victims for their ſacrifices. A wood, not far from the capital, was ſelected for this purpoſe; and it was encloſed by ſome thouſands of hunters, who formed a circle of ſix, ſeven, or eight miles, according to the number of animals which they propoſed to take. Fire was then ſet to the graſs in a number of places, and a terrible noiſe was made with drums, horns, ſhouting and whiſtling. The hunters at the ſame time gradually contracted their circle, and thus encloſed the game in a very ſmall ſpace, and it was taken in the ſnares that had been previouſly ſet, or killed by the hunters. The number of animals, comprehending deer, wild goats, hares, rabbits, &c. collected and deſtroyed on theſe occaſions, is almoſt incredible.

Hunting was alſo much practiſed by the ſavage and bloody conqueror Genghiz-Khan; and his method of employing his ſoldiers in a kind of warfare with the beaſts, when they had no human enemies with whom to contend, was ſimilar to that of the Mexicans. The chaſe is ſtill an object to which the Eaſt Indian princes are much inclined, Mr. Blane, who attended the hunting excurſions of Aſoph ul Dowlah, viſir of the Mogul empire, and nabob of Oude in 1785 and 1786, gives the following account of them.

The time choſen for the hunting party is about the beginning of December; and the diverſion is continued till the heats, which commence about the beginning of March, oblige them to ſtop. During this time a circuit of between 400 and 600 miles is generally made; the hunters bending their courſe towards the ſkirts of the northern mountains, where the country is wild and uncultivated. The viſir takes along with him not only his court and ſeraglio, but a great part of the inhabitants of his capital. His immediate attendants may amount to about 2000; but beſides theſe he is alſo followed by 500 or 600 horſe, and ſeveral battalions of regular ſepoys with their field-pieces. Four or five hundred elephants are alſo taken along with him: of which ſome are uſed for riding, others for fighting, and ſome for clearing the jungles and foreſts of the game. About as many ſumpter horſes of the beautiful Perſian and Arabian breeds alſo accompany him. A great many wheel carriages drawn by bullocks likewiſe attend, which are uſed chiefly for the convenience of the women; ſometimes alſo he has an Engliſh chaiſe or two, and ſometimes a chariot; but all theſe, as well as the horſes, are merely for ſhow, the viſir himſelf never uſing any other conveyance than an elephant, or ſometimes, when fatigued or indiſpoſed, a palanquin. The animals uſed in the ſport are principally gre-hounds, of which there may be about 300; he has alſo about 200 hawks, and a few trained leopards for hunting deer. There are a great number of markſmen, whoſe profeſſion it is to ſhoot deer; with many fowlers, who provide game: as none of the natives of India know how to ſhoot game with ſmall ſhot, or to hunt with ſlow hounds. A vaſt number of matchlocks are carried along with the company with many Engliſh pieces of various kinds, 40 or 50 pairs of piſtols, bows and arrows, beſides ſwords, daggers, and ſabres without number. There are alſo nets of various kinds, ſome for quail, and others very large, for fiſhing, which are carried along with him upon elephants, attended by fiſhermen, ſo as always to be ready for throwing into any river or lake that may be met with. Every article that can contribute to luxury or pleaſure is likewiſe carried along with the army. A great many carts are loaded with the Ganges water, and even ice is tranſported for cooling the drink. The fruits of the ſeaſon and freſh vegetables are daily ſent to him from his gardens by bearers ſtationed at the diſtance of every ten miles; by which means each article is conveyed day or night at the rate of four miles an hour. Beſides the animals already mentioned, there are alſo fighting antelopes, buffaloes, and rams in great numbers; alſo ſeveral hundred pigeons, ſome fighting cocks, with a vaſt variety of parrots, nightingales, &c.

To complete the magnificence or extravagance of this expedition, there is always a large bazar, or moving town, which attends the camp; conſiſting of ſhop-keepers and artificers of all kinds, money-changers, dancing-women; ſo that, on the moſt moderate calculation, the whole number of people in his camp cannot be computed at fewer than 20,000. The nabob himſelf, and all the gentlemen of his camp, are provided with double ſets of tents and equipage, which are always ſent on the day before to the place to which he intends to go; and this is generally eight or ten miles in whatever direction moſt game is expected; ſo that by the time he has finiſhed his ſport in the morning, he finds his whole camp ready pitched for his reception.

The nabob, with the attending gentlemen, proceed in a regular moving court or durbar, and thus they keep converſing together and looking out for game. A great many foxes, hares, jackals, and ſometimes deer, are picked up by the dogs as they paſs along: the hawks are carried immediately before the elephants, and let fly at whatever game is ſprung for them, which is generally partridges, buſtards, quails, and different kinds of herons; theſe laſt affording excellent ſport with the falcons or ſharp-winged hawks. Wild boars are ſometimes ſtarted, and either ſhot or run down by the dogs and horſemen. Hunting the tyger, however, is looked upon as the principal diverſion, and the diſcovery of one of theſe animals is accounted a matter of great joy. The cover in which the tyger is found is commonly long graſs, or reeds of ſuch an height as frequently to reach above the elephants; and it is difficult to find him in ſuch a place, as he commonly endeavours either to ſteal off, or lies ſo cloſe to the ground that he cannot be rouſed till the elephants are almoſt upon him. He then roars and ſkulks away, but is ſhot at as ſoon as he can be ſeen; it being generally contrived that the nabob ſhall have the compliment of firing firſt. If he be not diſabled, the tyger continues to ſkulk along, followed by the line of elephants; the nabob and others ſhooting at him as often as he can be ſeen till he falls. The elephants themſelves are very much afraid of this terrible animal, and diſcover their apprehenſions by ſhrieking and roaring as ſoon as they begin to ſmell him or hear him growl; generally attempting to turn away from the place where he is. When the tyger can be traced to a particular ſpot, the elephants are diſpoſed of in a circle round him; in which caſe he will at laſt make a deſperate attack, ſpringing upon the elephant that is neareſt, and attempting to tear him with his teeth or claws. Some, but very few, of the elephants, can be brought to attack the tyger; and this they do by curling up their trunks under their mouths, and then attempting to toſs, or otherwiſe deſtroy him with their tuſks, or to cruſh him with their feet or knees. It is conſidered as good ſport to kill one tyger in a day; though ſometimes, when a female is met with her young ones, two or three will be killed.

The other objects of purſuit in theſe excurſions are wild elephants, buffaloes, and rhinoceroſes. Our author was preſent at the hunting of a wild elephant of vaſt ſize and ſtrength. An attempt was firſt made to take him alive by ſurrounding him with tame elephants, while he was kept at bay by crackers and other fire-works; but he conſtantly eluded every effort of this kind. Sometimes the drivers of the tame elephants got ſo near him, that they threw ſtrong ropes over his head, and endeavoured to detain him by faſtening them around trees; but he conſtantly ſnapped the ropes like pack-threads, and purſued his way to the foreſt. Some of the ſtrongeſt and moſt furious of the fighting elephants were then brought up to engage him; but he attacked them with ſuch fury that they were all obliged to deſiſt. In his ſtruggle with one of them he broke one of his tuſks, and the broken piece, which was upwards of two inches in diameter, of ſolid ivory, flew up into the air ſeveral yards above their heads. Orders were now given to kill him, as it appeared impoſſible to take him alive; but even this was not accompliſhed without the greateſt difficulty. He twice turned and attacked the party who purſued him; and in one of theſe attacks ſtruck the elephant obliquely on which the prince rode, threw him upon his ſide, but then paſſed on without offering farther injury. At laſt he fell dead, after having received, as was ſuppoſed, upwards of 1000 balls into his body. See ELEPHAS.

Hunting, conſidered as an exerciſe, is perhaps the beſt that can poſſibly be contrived for ſtrengthening the general habit, and procuring health and vigour. The ſeaſon of the year, the time of the day deſtined for this amuſement, and the motion neceſſary on this occaſion, are all admirably adapted to the reſtoration and continuance of health. It is, beſides, of no ſmall importance to have the mind recreated at the time the body is exerciſed; for this admirably aſſiſts the due circulation of the fluids through the minute canals deſtined for their conveyance; and there are few people not utterly abandoned to idleneſs and debauchery of ſome kind or other, who do not perceive a ſpontaneous flow of ſpirits when they ride at or about the riſe of the ſun, when they reſpire the pureſt air, when variety of perpetually changing ſcenes preſent themſelves, and when the mind is agreeably agitated concerning the event of the chaſe.

If we advert to the character of thoſe nations in ancient times, which were moſt addicted to this exerciſe, we ſhall find that they delighted in war, and in oppreſſing and enſlaving their own ſpecies. Nimrod, the mighty hunter, was a tyrant. The Lacedæmonians indulged themſelves without controul in this exerciſe, whilſt they cruelly oppreſſed thoſe whom they had in their power. (See Helots.) The wiſe legiſlator Solon reſtrained the Athenians from gratifying themſelves in this way, leſt they ſhould be led to neglect the mechanic arts. The Egyptians, Perſians, and Scythians, &c. were fond of hunting and of war. As mankind became more civilized, hunting became leſs prevalent: ſuch was in a degree the caſe with the Romans, although they continued to a late period to make death and ſlaughter familiar to the citizens, by the diverſions of the amphitheatre and circus, which conſiſted of exhibitions of wild beaſts, and of human gladiators, deſtroying one another. Thoſe who think the exerciſe of hunting incompatible with the principles of humanity, allege that it is allowable only when an uncultivated country is over-run with noxious animals, or when it is neceſſary to kill wild animals for food. For a defence of this diverſion, and an attempt to reconcile it with the ſentiments and feelings of humanity, ſee Mancheſter Tranſactions, vol. i. p. 341, &c.

Hunting is practiſed in a different manner, and with a different apparatus, according to the nature, genius, and addreſs, of the particular beaſt which is the object of it. Theſe beaſts are, the hart, hind, hare, boar, wolf, buck, doe, fox, marten, and roe; the five firſt of which are denominated beaſts of the foreſt, or venery, *ſylveſtres*; and the five latter, beaſts of the field, or of chaſe, *campeſtres*.

The gentlemen, and maſters of the ſport, have framed a new ſet of terms, which may be called the *hunting language*; a conciſe vocabulary of which we ſhall here give the reader.

The terms, then, uſed for beaſts of venery and chaſe, as they are in company, are theſe: they ſay, a *herd* of harts, and all manner of deer; a *bevy* of roes; a *ſounder* of ſwine; a *rout* of wolves; a *richeſs* of martens; a *brace* or *leaſh* of bucks, foxes, or hares; a *couple* of rabbits or conies.

There are alſo terms for their lodging; a hart is ſaid to *harbour*; a buck *lodges*; a roe *beds*; a hare *ſeats*, or *forms*; a coney *ſits*; a fox *kennels*; a marten *trees*; an otter *watches*; a badger *earths*; a boar *couches*.

Hence, to expreſs their diſlodging, they ſay, *unharbour* the hart; *rouſe* the buck; *ſtart* the hare; *bolt* the coney; *unkennel* the fox; *untree* the marten; *vent* the otter; *dig* the badger; *rear* the boar.

The terms for their noiſe at rutting time are as follows: a hart *belleth*; a buck *growns* or *troats*; a roe *bellows*; a hare *beats* or *taps*; an otter *whines*; a boar *freams*; a fox *barks*; a badger *ſhrieks*; a wolf *howls*; a goat *rattles*.

Terms for their copulation: a hart or buck goes to *rut*; a roe goes to *tourn*; a bear goes to *brim*; a hare or coney goes to *buck*; a fox goes to *clicketing*; a wolf goes to *match* or *make*; an otter *hunteth* for his kind.

Terms for the footing and treading: of a hart we ſay, the *ſlot*; of a buck, and all fallow deer, the *view*; of all deer, if on the graſs, and ſcarce viſible, the *foiling*; of a fox, the *print*; and of other the like vermin, the *footing*; of an otter, the *marks*; of a boar, the *track*; the hare, when in open fields, is ſaid to *ſore*; when ſhe winds about to deceive the hounds, ſhe *doubles*; when ſhe beats on the hard highway, and her footing comes to be perceived, ſhe *pricketh*; in ſnow, it is called the *trace* of the hare.

The tail of a hart, buck, or other deer, is called the *ſingle*; that of a boar, the *wreath*; of a fox, the *bruſh* or *drag*; and the tip at the end, the *chape*; of a wolf, the *ſtern*; of a hare and coney, the *ſcut*.

The ordure or excrement of a hart, and all deer, is called *fewmets* or *fewmiſhing*; of a hare, *crotiles* or *crotiſing*; of a boar, *leſſes*; of a fox, the *billeting*; and of other the like vermin, the *fuants*; of an otter the *ſpraints*. As to the heads of deer, ſomething has already been ſpoken under the article Head.

For the attire or parts thereof, thoſe of a ſtag, if perfect, are, the *bur*, the *pearls*, the little *knobs* on it, the *beam*, the *gutters*, the *antler*, the *ſur-antler*, *royal*, *ſur-royal*, and all at top, the *croches*; of the buck, the *bur*, *beam*, *brow-antler*, *back-antler*, *advancer*, *palm*, and *ſpellers*.

If the croches grow in the form of a man's hand, it is called a *palmed head*. Heads bearing not above three or four, and the croches placed aloft, all of one height, are called *crowned heads*. Heads having double croches, are called *forked heads*, becauſe the croches are planted on the top of the like forks.

They ſay a *litter* of cubs; a *neſt* of rabbits; a ſquirrel's *dray*.

The terms uſed in reſpect to the dogs, &c. are as follow: of grey-hounds, two make a *brace*; of hounds, a *couple*; of grey-hounds, three make a *leaſh*; of hounds, a *couple* and *half*:—they ſay, let *ſlip* a grey-hound; and *caſt off* a hound: the ſtring wherein a grey-hound is led is called a *leaſh*; and that of a hound a *lyome*: the grey-hound has his *collar*, and the hound his *couples*: we ſay a *kennel* of hounds, and a *pack* of beagles.

Hunting, *ſtyles or manners of*, are various, according to the country, the beaſt, and the means whereby he is to be caught.

Hunting, as practiſed among us, is chiefly performed with dogs; of which we have various kinds, accommodated to the various kinds of game: *hounds*, *grey-hounds*, *ſtaunch-hounds*, *blood-hounds*, *terriers*, &c. See Dog, Hound, &c.

In the kennels or packs, they generally rank them under the heads of *enterers*, *drivers*, *flyers*, *tyers*, &c.

On ſome occaſions, nets, ſpears, and inſtruments for digging the ground are alſo required: nor is the hunting-horn to be omitted. See Horn.

The uſual chaſes among us are, the *hart*, *buck*, *roe*, *hare*, *fox*, *badger*, and *otter*. We ſhall here give ſomething of what relates to each of theſe.

With regard to the ſeaſons of hunting: hart and buck hunting begins at the end of fence-month, which is a fortnight after Midſummer, and laſts till Holy-rood-day. The hind and doe come in courſe on Holy-rood-day, and laſt till Candlemas. Fox hunting comes in at Chriſtmas and holds till Annunciation.

Roe hunting begins at Michaelmas and ends at Candlemas. Hare hunting commences at Michaelmas, and goes out at the end of February. Where the wolf and boar are hunted, the ſeaſon for each begins at Chriſtmas; the firſt ending at the Annunciation, the ſecond at the Purification.

Here, too, is the place for ſome general terms and phraſes, more immediately uſed in the progreſs of the ſport itſelf; what belongs to the ſeveral ſorts of game in particular, being reſerved for the reſpective articles.

When the hounds, then, being caſt off, and finding the ſcent of ſome game, begin to open and cry, they are ſaid to *challenge;* when they are too buſy before the ſcent be good, they are ſaid to *babble;* when too buſy where the ſcent is good, *bawl;* when they run it end-ways orderly, holding in together merrily, and making it good, they are ſaid to be in *full cry;* when they run along without opening at all, it is called *running mute.*

When ſpaniels open in the ſtring, or a grey-hound in the courſe, they are ſaid to *lapſe.*

When beagles bark and cry at their prey, they are ſaid to *yearn.*

When the dogs hit the ſcent the contrary way, they are ſaid to *draw amiſs.*

When then they take freſh ſcent, and quit the former chaſe for a new one, it is called *hunting change.*

When they hunt the game by the heel or track, they are ſaid to *hunt counter.*

When the chaſe goes off, and returns again, traverſing the ſame ground, it is called *hunting the foil.*

When the dogs run at a whole herd of deer inſtead of a ſingle one, it is called *running riot.*

Dogs ſet in readineſs where the game is expected to come by and caſt off after the other hounds are paſſed, are called a *relay.* If they be caſt off before the other dogs be come up, it is called a *vauntlay.*

When, finding where the chaſe has been, they make a proffer to enter, but return, it is called a *blemiſh.*

A leſſon on the horn to encourage the hounds is named a *call* or *recheat.* That blown at the death of a deer is called the *mort.* The part belonging to the dogs of any chaſe they have killed is the *reward.* They ſay, *take off* a deer's ſkin; *ſtrip* or *caſe* a hare, fox, and all ſorts of vermin; which is done by beginning at the ſnout, and turning the ſkin over the ears down to the tail.

Hunting, *Laws relating to.* See Game.

Notwithſtanding all the game laws, and the various qualifications for hunting pointed out by ſtatutes, which imply a power for perſons ſo qualified to hunt, yet, according to judge Blackſtone, no man but he who has a chaſe, or free-warren, by grant of the crown or preſcription, which ſuppoſes one, can juſtify hunting or ſporting upon another man's ſoil; nor indeed, in thorough ſtrictneſs of common law, either hunting or ſporting at all. By ſtat. 1 Hen. VII. c. 7. unlawful hunting in any legal foreſt, park, or warren, not being the king's property, by *night,* or with *painted faces,* was declared to be ſingle felony. But now by the ſtatute 9 Geo. I. c. 22. to appear armed in any encloſed foreſt or place where deer are uſually kept, or in any warren for hares or conies, or in any high road, open heath, common, or down, by day or night, with faces blacked or otherwiſe diſguiſed, or (being ſo diſguiſed) to hunt, wound, kill, or ſteal any deer, to rob a warren, or to ſteal fiſh, or to procure by gift or promiſe of reward any perſon to join them in ſuch unlawful act, is felony without benefit of clergy. Perſons ſo hunting are liable to actions of treſpaſs by the poſſeſſors of the land. Comment. vol. ii. p. 418, and vol. iv. p. 174. See Trespass.

Hunting, *Badger.* A badger is called by ſeveral names viz a *grey, brock, boreſon,* or *bauſon:* the male is called a *badger,* or *boar-pig,* and the female a *ſow.* See Ursus Meles.

This beaſt is very frequent in Italy, Sicily, the Alpine, and Helvetian coaſts; and is not uncommon in France and England. It is found alſo as far north as Norway and Ruſſia; in Siberia, about the rivers Tom and Lena; it inhabits China, and is expoſed to ſale for food in the markets of Pekin.

The badger is a very ſleepy beaſt, eſpecially in the daytime, ſeldom ſtirring abroad but in the night; whence the denomination *lucifuga,* q. d. *avoider of the light.* It burrows under ground like the fox, and forms ſeveral different apartments, though with only one entrance, carrying in its mouth graſs in order to form a bed for its young. It is ſo cleanly an animal, that it never obeys the call of nature in its apartments, but goes out for that purpoſe. It breeds only once in a year, and brings four or five at a time.

The badger is a deep biting beaſt, having very ſharp teeth; to guard againſt the effects of which, it is uſual to put great broad collars about the dogs' necks. He fights on his back, and by this means is at liberty to uſe both his teeth and nails. He has a faculty of blowing up his ſkin after a ſtrange manner, by which he defends himſelf againſt any blow or bite of the dogs; ſo that you may threſh on his back till you are weary to no purpoſe: but a ſmall ſtroke on the noſe diſpatches him preſently. The ſkin of the badger, when dreſſed with the hair, is uſed for piſtol furniture. The Highlanders make their pendant pouches of it. The hair is often uſed for making bruſhes to ſoften the ſhades in painting, called ſweetening tools. Theſe animals are alſo hunted in the winter nights for the ſake of their fleſh, for the hind quarters may be made into hams, not inferior in goodneſs to the beſt bacon. The fat is much valued for ointments and ſalves.

The method of hunting the badger is thus: ſeek the earth and burrows where he lies, and in a clear moonſhine night go and ſtop all the holes but one or two, and therein place ſacks, faſtened with drawing ſtrings, which may ſhut him in as ſoon as he ſtrains the bag. The bags thus ſet, caſt off your hounds, and beat all the groves, hedges or tufts within a mile or two: the badgers that are abroad being alarmed by the dogs, will ſtraight repair to their earths, and ſoon be taken. He that ſtays to watch the ſacks muſt ſtand cloſe, and upon a clear wind, or elſe the badger will find him, and fly ſome other way for ſafety. If the hounds either encounter him, or undertake the chaſe before he can get into his earth, he will ſtand at bay like a boar, and make excellent ſport.

If the badger be attacked in his earth, as ſoon as he perceives the terriers yearn him, he will ſtop the hole between the dogs and himſelf; and if the dogs continue baying, he removes his baggage with him, and goes into another apartment or chamber, of which he uſually has half a dozen in the burrow; thus retreating from one to the other, till he can go no farther, and barricading the way as he goes. In hunting the badger as well as the fox, a man cannot juſtify breaking the ſoil, and digging him out of his earth.

Another mode of catching badgers is by a "pit-fall" acroſs their accuſtomed path. This ſhould be five feet deep and four feet long, narrow at the top and bottom, and wide in the middle. This pit muſt be covered with ſmall boughs or ſticks, which retain their leaves (either withered or green, according to the ſeaſon): they muſt be ſo laid, that the weight of the badger when he treads upon them will inſtantly make them give way. The digging of badgers is, without very good terriers, a work of time: for if terriers do not keep conſtantly at him, from his facility in penetrating and throwing back the earth (which he poſſeſſes beyond any other animal) he will, in looſe ſand, bury himſelf faſter than the workmen can ſink pits, by which he may be got into an angle.

HUNTING, *Boar*. See BOAR.

HUNTING, *Buck*, or *hunting fallow deer*. See BUCK, and CERVUS *Dama*.

The female is called *doe*, or *doo:* the firſt year a *fawn;* ſecond, a *togg;* the third, a *doe*. See DEER.

Leſs art and ſkill are required in lodging a buck, than in harbouring a hart or ſtag; nor does there need ſo much drawing after; it is ſufficient that you judge by the view, and mark what grove or covert he enters; for he does not wander and rove ſo often as a hart, nor ſo frequently change his layer. When hard hunted he uſually takes to ſome ſtrong hold or covert, with which he is acquainted; not flying far before the hounds, nor croſſing nor doubling, nor uſing any of the ſubtleties the hart is accuſtomed to.

The buck will beat a brook, but ſeldom a great river as the hart, nor can he ſtay ſo long at ſoil.

The greateſt ſubtilty a huntſman need uſe in hunting the buck, is to beware of hunting counter or change, becauſe of the plenty of fallow deer, which uſe to come more directly upon the hounds than the red deer do.

The buck herds more than the hart, and lieth in the drieſt places; but if he be at large, unconfined in a park, he herds but little from May to Auguſt, becauſe the flies trouble him. He takes delight in hilly places, but chooſes the dales to feed in.

HUNTING, *Fox*. See FOX. His nature, in many reſpects, is like that of a wolf; and both bring the ſame number of cubs at a litter: but the fox litters deep under ground, which the wolf does not.

The fox ſleeps much and ſound during the day, and, like the dog, lies in a round form, and may be approached without waking him; but he is in motion and ſeeking his prey the whole night. When only repoſing himſelf he ſtretches out his hind legs, and lies on his belly: in this poſition he ſpies the birds, as they alight near him, and is ready to ſpring upon ſuch as are within his reach. Crows, magpies, and other birds, which conſider the fox as a common enemy, have ſuch an antipathy to him, that they often give notice of his retreat, by the moſt clamorous notes. Jays and blackbirds, in particular, will inceſſantly repeat the watch cries; and when the hounds are in chaſe of him, crows and magpies will follow him with their ſcreams from tree to tree to a conſiderable diſtance, and not unfrequently, when hounds are at a check, indicate which way the fox has ſhaped his courſe. The fox has proverbially a ſtrong and offenſive ſmell; he has alſo a yelping kind of bark, which conſiſts of a quick ſucceſſion of ſimilar tones, at the end of which he generally raiſes his voice, like the cry of the peacock. In winter, and eſpecially during froſt and ſnow, and when going to clicket, he yelps much; but in ſummer he is almoſt entirely ſilent; and during this ſeaſon he caſts his hair.

A bitch fox is hard to take when breeding and with cub, in regard ſhe lies near her burrow, into which ſhe runs upon hearing the leaſt noiſe: indeed it is no eaſy matter to take her at any time, as being a beaſt of exceeding ſubtilty. After littering, if ſhe perceives her retreat is diſcovered, ſhe carries off her cubs, one by one, to a more ſecure ſituation.

What makes fox-hunting the more entertaining, is the ſtrong hot ſcent this creature affords, which keeps up an excellent cry; but as his ſcent is hotter at hand, ſo it dies ſooner than that of a hare, &c. Add, that he never flies far before the hounds, as not truſting to his legs or the champaign ground, but has recourſe to the ſtrongeſt coverts. When he can no longer ſtand up before the hounds, he takes earth, and muſt be dug out. When courſed by grey-hounds on a plain, his laſt refuge is uſually to piſs on his tail, and flap it in their faces as they come near him; ſometimes ſquirting all his thicker excrement upon them, to make them give over their courſe.

When a bitch fox goes a clicketing, and ſeeks the dog, ſhe cries with a hollow voice, not unlike the howling of a mad dog; and the like noiſe ſhe makes when ſhe miſſes any of her cubs: but ſhe never cries at all when ſhe is about to be killed, but defends herſelf in ſilence to the laſt gaſp.

The fox is taken with hounds, grey-hounds, terriers, nets, and gins. Of terriers there are two ſorts: the one crook-legged, and commonly ſhort-haired, which take earth well, and lie long at fox or badger; the other is ſhagged, and ſtraight-legged, which will not only hunt above ground as others, but alſo enter the earth with great fury, though theſe cannot ſtay in ſo long on account of their vehemence.

The fox chuſes to earth in ground hard to dig: as in clay or ſtony ground, or amongſt the roots of trees; and his earth has commonly but one hole, which goes ſtraight along in, before it comes at their couch: he ſometimes by craft poſſeſſes himſelf of a badger's old burrow, which has variety of chambers, holes, and angles. Geſner relates, that he frequently cheats the badger of his habitation, by laying his excrement at the mouth of the other's burrow.

The modes of hunting the fox formerly, and that practiſed at preſent, are very different. In the earlieſt days, when this country was far more woody, and foxes ſo much abounded, as to be in a degree like wolves a general nuiſance, what was then termed fox-hunting was effected by a great number of people, with dogs of all kinds, who aſſembled at the coverts where the foxes harboured. And whilſt ſome beſet the place, others went into the woods with ſome of the dogs and forced them out, to be either courſed by the reſt of the dogs, which were held ready to be ſlipped at them, or they were taken in nets and hays ſet on the outſides for that purpoſe.

As the covers were reduced in ſize and number, this ſyſtem of ſelf-defence againſt the fox's depredations, gave riſe to the chaſe as an object of amuſement; the ſeaſon for hunting them began in November and ended in March, as in the cold weather the fox was ſuppoſed to leave a ſtronger ſcent; the earths were ſtopped in the courſe of the night before hunting, (which is perhaps the *only* point in which the fox-hunting of the former and preſent time concurs,) a huntſman was appointed, whoſe buſineſs was to take all his dogs in *couples* and *hardled*, early the following morning to the wood deſigned to be tried, there to throw off his ſure finders or *ſtaunch hounds*, that would undertake no other ſcent, but that of the fox; if they ſtruck upon a drag, he caſt off more of his beſt hounds, and ſo continued to do until they ran the drag up to the fox's kennel, which was the moſt opportune moment to throw off the major part of the coupled hounds; the fox, finding himſelf thus hotly purſued, after trying to hunt the hounds, was compelled to forſake the cover and truſt to his feet, fleeing from wood to wood, and ſometimes extending his courſe for twenty miles; the huntſman on *foot* was to croſs (with what hounds he had in reſerve) the neareſt cut from cover to cover, and to be as much as poſſible in the way to throw off thoſe freſh hounds, either as an encouragement to the finders or ſtaunch hounds that might begin to run lag, and which he was alſo to encourage by all poſſible means, or he was to keep back this *corps de reſerve*, to have them, as occaſion might offer, ready for a dead ſcent, or, as he judged prudent, for the latter end of the day. When the fox was killed the pack was to be all hallooed in to bay him, but they were not allowed to eat him, becauſe his *fleſh was hurtful* to them; his fat was however in high eſteem for ſhrunk ſinews.

If the fox ran to ground, the huntſman, who was to be provided with good terriers, was to lay him up in the earth, which, in the opinion of ſome, was ſooner done by putting a collar of bells on the terrier's neck; when dug out, he was ſometimes given to the hounds to be killed on the earth as an encouragement, and alſo to make them lie when they came to a ſtrange wood and to an unknown earth, at other times he was reſerved alive for a future day's ſport; if the earth proved ſo deep that it was impoſſible to dig him out, ſteel-traps were ſet at the mouth of the hole, or hay nets pitched round it, to take him at his going off, and theſe implements were to be carefully watched.

The whole art of fox-hunting, ſays Daniel in his "Rural Sports," is to keep hounds (ſee HOUND) well in blood; and therefore every advantage is taken of the fox. Sport is a ſecondary conſideration with a true fox-hunter: his firſt motive is the killing of the fox, by which he makes his hounds: preſent ſucceſs is almoſt a ſure fore-runner of future ſport, and he is better pleaſed with an indifferent chaſe with death at the cloſe of it, than with the beſt chaſe poſſible, if it terminates with the loſs of the fox. Good chaſes are, generally ſpeaking, long ones, and if unſucceſsful, do more harm than good to hounds. It will be an advantage to hounds when out of blood to go out early. The morning is the part of the day which uſually affords the beſt ſcent, and the animal itſelf, which you are at this time more than ever deſirous of killing, is then leaſt able to eſcape; the want of reſt, added perhaps to a full belly, gives hounds a decided ſuperiority over an early-found fox. Hounds ſhould never be taken out in a very windy or bad day, becauſe ſcent is at ſuch times extremely precarious. (See SCENT.)

Two things, ſays Mr. Daniel (ubi ſupra), are ever to be remembered and accompliſhed in fox-hunting; the one is, to make hounds *ſteady*, the other to teach and compel them all to *draw;* never ſuffer *any* hounds *out of cover*, it is the effect of bad management if they attempt to be ſo; hounds once become ſteady will be more likely to draw well than if they were not, their eagerneſs is then to find their proper game, and they are indifferent to the ſcent or view of any other. Many huntſmen are fond of having hounds at their *horſe's heels*, and it is a modern faſhion for the huntſman and whippers-in to *ride into* the cover, and by their noiſe, in ſome meaſure, to *find* the fox for their hounds; but this proceeding invariably renders hounds *bad* drawers, independent of the great chance of ſtubbing the horſes, which in an incloſed country too often occurs, without needleſsly courting the danger; it is liable alſo, where there are but few finders, to have a fox found by them, which goes down the wind, and they are heard of no more that day; beſides, hounds never get ſo well or ſo ſoon together as when they ſpread the cover.

There is infinite pleaſure, ſays a ſportſman, in hearing when a fox is well found, the chorus increaſing from the firſt challenge, and the correſponding "Hark to Chirper" inſpires a joy more eaſy to be felt than deſcribed; and one fox found with a good drag in this lively manner, ſurpaſſes the beſt hare chaſe that was ever ran.

Much alſo depends on the firſt finding a fox, who, if well found, may be ſaid to be half killed. The huntſman ſhould draw quietly, and *up the wind;* this is material; the fox, by drawing up the wind, does not hear the approach of the hounds, who by this means are alſo within hearing; beſides, ſhould the fox turn down the wind, as moſt probably he will, it lets the hounds all in. If covers are ſmall, and from which a fox cannot break unſeen, *noiſe* can then do no hurt, but late in the ſeaſon foxes are wild, particularly in covers that are often hunted, and ſhould there be any noiſe, they will ſlink their kennels and get too much advantage; the whipper-in, where this is ſuſpected to happen, ſhould get the oppoſite ſide of the cover, *before* the hounds are thrown into it.

Judicious huntſmen will obſerve where foxes like beſt to lie; this muſt of courſe vary in different countries, and a knowledge of the country will beſt direct them in this reſpect. Where there are large tracts of cover, ſuch obſervation will ſave time in finding; generally ſpeaking, foxes prefer covers that lie high, are dry and thick at bottom, that are out of the wind, and are on the ſunny ſide of hills. The cover where a fox is found, when it has remained ſtill any time, will probably produce a ſecond. In nutting time, *furze brakes* and two or three years coppices are then the only quiet places for a fox to kennel in; when pheaſant ſhooting begins, older covers are more likely. The ſeaſon when foxes are moſt wild and ſtrong, is near Chriſtmas; a huntſman muſt at that ſeaſon loſe no time in drawing, and be as ſilent as poſſible; three or four years coppices, with *heath or furze at bottom*, are then moſt likely. The *male* foxes, about Chriſtmas, travel miles after the *females*, and when hunted, generally run directly for the country *from whence* they came; the huntſman has at that ſeaſon, in the courſe of three weeks, killed two brace of dog foxes from one cover, where the leaſt diſtance was twelve, and in one of the four chaſes was extended to double the number of miles, from the place of unkennelling, to the ſpot where the fox was killed.

When a ſtring of ſmall covers have plenty of foxes in them, ſome caution is neceſſary to prevent them being all diſturbed in one day. Foxes are ſaid to go *down wind to their kennel*, but however that may be, the huntſman ſhould begin drawing at the fartheſt cover down the wind, and proceed from cover to cover *up the wind*, till he finds; theſe advantages will attend it, he will draw the covers more ſpeedily, there will be leſs difficulty in getting hounds away, and as the fox moſt likely will run the covers already drawn, there is the leſs probability of *changing*, and the covers which are up the wind, *beyond* where the fox is found, remain perfectly undiſturbed.

Never hunt the ſmall, until the large covers have been well rattled; for it would be bad policy to drive from the former to the latter to increaſe the number. If foxes are meant to be thinned and diſperſed, hounds muſt throw off at the ſame cover, ſo long as a fox can be found. Hounds that come away with the firſt fox that breaks, do not diſturb the cover, and may expect to find there again the next day; but where foxes are ſcarce, the ſame cover ſhould never be drawn *two days following*.

Furze covers cannot be drawn too cloſe, and if a fox is there found, he ſhould never be hallooed until *quite clear* of them; from ſuch places, hounds are ſure to go off well with him, and it would be the height of cruelty to head him back into the hounds mouths.

Long drags in large covers give advantage to the fox, who frequently takes the hint and ſets off; this may be prevented, by throwing hounds into that part of the cover where he is moſt likely to kennel, the huntſman ſhould then be careful not to take the *heel* of the drag. When a fox gets ſo far the ſtart of hounds, that they are obliged to hunt after him with a bad ſcent, if foxes are in plenty, they had better be ſtopped, and find another; yet if this was a conſtant practice, it might make the hounds indifferent when upon a *cold ſcent*, and hounds ſhould be made to believe, they are to kill *that game* which they are *firſt* encouraged to purſue.

When hounds approach a cover intended to be drawn, and daſh away towards it, whippers-in ride to ſtop them; they had better let them alone, it checks their drawing, and it will be ſoon enough to rate, when they have found and hunt improper game. Some hounds will in this daſhing ſtyle break away from the huntſman, ruſh to the cover ſide, and then ſtop and not go into it; but hounds under ſuch good command as not to break off from the huntſman until he encourages them, will be then ſo confident, that they will not return to him again, but proceed to find their game with an eager ſteadineſs.

Whilſt hounds are drawing, the company ſhould place themſelves ſo that a fox cannot go off unſeen. Gentlemen ſhould take this neceſſary part of fox-hunting to themſelves; upon thoſe occaſions, when two gentlemen are ſeen *together*, it is a reaſonable concluſion, that one of them at leaſt knows nothing of the matter. The greater number of thoſe who ride after hounds are no ſportſmen; few gentlemen will take pains to ſtop a hound, although he ſhould run riot cloſe beſide them, or will ſtand quiet a moment although it is to halloo a fox, and thereby to promote the amuſement they are come in ſearch of.

The firſt day a cover is hunted, where there is plenty of foxes, and blood is wanted, let them not be headed back into the cover, which is the uſual practice, but allow ſome of them to get off, otherwiſe with continual *changing*, and ſometimes running the *heel*, it is probable the hounds will not kill any. Another precaution may be alſo neceſſary, that is, to ſtop ſuch earths *only as cannot* be digged; if ſome foxes go to ground, and blood be wanted at laſt, it will then be known where to get it.

Covers *near the kennel* ſhould not be drawn while foxes can be found elſewhere, it will render them certain places when hounds go out late, or may otherwiſe be in want of foxes; they ſhould not be much diſturbed after Chriſtmas, foxes will then reſort to, and breed in them, and there they can be preſerved with little trouble.

Before hounds are drafted, let the huntſman determine within himſelf the number it will be proper to take out, and alſo what young hounds he can venture in the country he is going into. Much accuracy is required in drafting hounds properly, nor can it be done with any expedition, without ſome method. Too many huntſmen deem it immaterial, which they take or which they leave, provided they have the number requiſite. A perfect knowledge in feeding and drafting hounds, is the moſt eſſential part of fox-hunting; good hounds will need but ſmall aſſiſtance afterwards. By *feeding*, is meant the bringing the hound into the field in his higheſt vigour, and this can be done but by a diſcernment of the different conſtitutions of ſo many animals, ſome of which muſt be fed ſparingly, and yet frequently, to maintain the full force of their powers. By *drafting*, is particularly meant the taking out no unſteady hound, nor any that are not likely to be of ſervice to the pack. To hunt two days following with a ſmall pack, calls forth the greateſt nicety to make the moſt of it; ſome conſideration is alſo neceſſary to place hounds to the greateſt advantage, where foxes are either plentiful or very ſcarce; a huntſman ſhould be able to marſhal every hound, giving to each his proper rank; without this knowledge, he cannot make a draft as he ought. There are in moſt packs ſome hounds that aid little in *killing* the fox; it is the *judicious drafting off* ſuch hounds, that is a certain ſign of an *intelligent* huntſman.

When foxes are numerous, there is no occaſion for an early hour, and when they are weak, by hunting late, they give better chaſes; when foxes are ſtrong, hounds ought then to have the advantage which hunting early affords them. When hounds go out late, they ſhould immediately proceed where it is likely to find, which, for the moſt part, is that cover where hounds have been leaſt in; if a fox is not ſoon found, a long and tireſome day is generally the conſequence; when the cover is thick, particularly if it be *furzy*, it ſhould be drawn ſlowly, a fox at a late hour will keep his kennel, until hounds come cloſe upon him.

A huntſman, although he ought to be as ſilent as poſſible when his hounds go into a cover, cannot be too noiſy at their coming out of it again; and if at any time he ſhould turn back ſuddenly, let him give as much notice of it as he can to his hounds, or many will be left behind, and ſhould he turn *down* the wind he may ſee no more of them.

Gentlemen are generally in too great haſte when a fox is firſt found, hounds are always mad enough when they find, and the enthuſiaſm attending this diverſion, is at this criſis particularly to be reſtrained; it is quite time enough for it to appear when hounds are away, and well ſettled to the ſcent. The huntſman ſhould ſet off with the foremoſt hounds, no hounds can then ſlip down the wind, and get out of his hearing; but in preſſing hounds forward whilſt the ſcent is good, care is to be taken that they are not hurried beyond it when it is bad; he ſhould keep ſo cloſe to them as to enable him to ſee how far they carry the ſcent, without this, he can never make a caſt with any certainty. It is the huntſman's buſineſs to be ready at all times to lend that aſſiſtance, which when they are firſt at a fault is then moſt critical, a fox-hound at that moment will exert himſelf moſt, he afterwards becomes more indifferent about his game. Thoſe huntſmen who do not get forward enough to take advantage of this eagerneſs, and direct it properly, are ſeldom ſufficiently ſkilled in hunting to be of much uſe to hounds afterwards.

With a high ſcent, hounds cannot be puſhed on too much; ſcreams keep the fox forward, the hounds together, or let in the tail hounds, they enliven the ſport, but in cover, ſhould be given with the greateſt caution; halloos are of ſervice when hounds are running up the wind, for then none but the *tail hounds* can hear them; when running down the wind, there ſhould be no more halloos than are neceſſary to bring the tail hounds forward, for hounds that know their buſineſs, when upon a ſcent, rarely want encouragement.

When hounds are at a check, every one ſhould be ſilent and ſtand ſtill; the huntſman had better let the hounds alone, or content himſelf with holding them forward, without taking them off their noſes; ſhould they continue at fault after having made their own caſt, (in which not a word ſhould be ſaid to them, and which the huntſman ſhould always firſt encourage them to do, as they will of themſelves ſpread more, and try better for the ſcent than he can make them;) it is then his buſineſs to aſſiſt them, but except in ſome very particular inſtances, ſuch as to get beyond the *taint of ſheep*, or where a fox has been *courſed* by farmers' dogs; (in the former caſe, much time is ſaved in keeping hounds forward, and not ſuffering them to try through a flock of ſheep; and in the latter it is the only chance of getting hounds to hit upon the ſcent, or its at all ſerving them to hunt up to their fox afterwards;) without theſe reaſons, or others equally urgent, hounds ſhould never be caſt ſo long as they are inclined to hunt. It is the judiciouſly preventing hounds from loſing time by hunting when they might run, and the encouraging them to hunt when they cannot run, that ſhows a good ſportſman; for though too much help will make them ſlack, too little will make them tye on the ſcent and hunt back the heel. The huntſman ſhould obſerve the tail hounds, they are leaſt likely to over-run the ſcent, by them he may ſee how far they brought it; in moſt packs there are ſome hounds that will ſhew the point of a fox, which, if attended to, may direct his caſt; when ſuch hounds follow ſlowly and unwillingly, he may be certain the reſt are running without a ſcent; but a huntſman ſhould by no means turn back on ſeeing hounds at head when firſt at a check, of which he has no opinion; they may be right, and he ſhould by a ſhort caſt forward be ſure they are wrong, before his own ſuppoſitions of the fox being gone another way, are to be indulged.

When hounds are at fault, ſtaring about and truſting to their eyes and ears, a forward caſt is the leaſt likely to regain the ſcent; the place where they left, is the moſt probable ſpot for them to hit the ſcent, and hounds knowing where they left the ſcent will there try to recover it, nor is a wide caſt often to be made without good reaſon; the ſcent ſhould be tried to be retrieved by *croſſing the line* of it, and a huntſman, by attending to this, will not fail to make a good caſt, if he obſerves the point of the fox. When hounds cannot hit off a fault by themſelves, the firſt caſt ſhould be ſpeedy, the ſcent is then good, and hounds not likely to go over it. Every huntſman ſhould adopt theſe rules; with a good ſcent his caſt ſhould be *quick*, with a bad ſcent, *ſlow*, and when hounds are picking along a cold ſcent, *he is not to caſt them at all.*

When a fox is killed, hounds ſhould eat him ravenouſly: he ſhould be flung acroſs the branch of a tree, and the hounds ſuffered to bay him for ſome minutes before he is thrown amongſt them, it will ſhew hounds the meaning of *tally ho*, and learn them to fly like lightning to it; it will alſo make the hounds more eager, will let them all in, they will recover their wind, and eat him more readily.

When a fox is ſuſpected to be gone to ground, the huntſman ſhould try all round, and be perfectly ſatisfied that the fox is not forward, *before* he tries the earth, as a fox will frequently run over an earth, and ſometimes go into, and not ſtay in it. When a fox goes to ground, after a long chaſe, and hounds want blood, it is beſt to kill him *on the earth*, the holes ſhould be all ſtopped whilſt digging, leſt he ſhould bolt; when this happens, it cauſes no ſmall confuſion, the hounds are diſperſed and aſleep in different places, the horſes often at a diſtance, and many a fox by taking this advantage of the moment has ſaved his life.

With reſpect to the digging of foxes which hounds run to ground, if the hole be ſtraight and earth ſlight, follow it, and in following the hole, by keeping below its level, it cannot be loſt; but in a ſtrong earth, the beſt way is to let the terrier fix the fox in an angle of it, and a pit be then ſunk as near to him as can be, a terrier ſhould always be kept at the fox, who otherwiſe may move, and in looſe ground dig himſelf further in; in digging keep plenty of room, and take care to throw the earth where it may not have to be moved again.

The time for leaving off hunting, as much depends upon the quantity of foxes as on the country hunted; no good country ſhould be hunted after *February*, nor ſhould there, where hounds regularly hunt in the ſeaſon, be any hunting *at all after March*. Spring hunting is ſad deſtruction to foxes, and ought not to be attempted but in countries never viſited by hounds in the hunting ſeaſon, or where the foxes are wiſhed to be deſtroyed by wholeſale; in one week, hounds by killing a brace or two of bitch foxes, either in cub, or that have juſt littered, murder as many as would ſhew diverſion for a whole ſeaſon.

Notwithſtanding the *common* law allows of the hunting of foxes and badgers (being beaſts of prey) in another mans' ground, becauſe their deſtruction is a public benefit, and by the old law the pariſh officers are to give a certain ſum by the head for both male and female, to promote it;) yet the digging and breaking the ground to unearth them, is held to be unlawful, and in the caſe of Gedge v. Minne, it was determined, that the defendant could not juſtify digging for a badger; the breaking ground to *ſtop* an earth is alſo illegal, and the owner of the ground may maintain an action of treſpaſs; it was alſo decided in the aforementioned caſe, that if a perſon goes into the ground of another, to beat or draw for a fox or a badger in order to hunt it, this action for treſpaſs lies. Daniel's Rural Sports, p. 84—133.

HUNTING, *Hare.* A hare the firſt year is called a *leveret*; the ſecond year, a *hare*; the third, a *great hare*. See HARE.

Each part and member of the hare is formed for celerity. The head is round and ſhort, of a convenient length; the ears long and lofty, to hear the enemy at a diſtance, and ſave itſelf in time; the lips continually move, ſleeping and waking; and the eye is too big and round for the lid to cover it, even when aſleep; ſo that the creature ſleeps as it were on the watch. Straight forward there is a deficiency in the hare's ſight, ſo that when cloſely purſued ſhe will run againſt objects in her way. The breaſt is capacious, and fitted to take more breath than that of any other beaſt. They feed abroad, to conceal their forms; and never drink, but content themſelves with the dew. The hare's ears lead the way in her chaſe; for with one of them (it has been ſaid) ſhe hearkeneth to the cry of the dogs, the other being ſtretched forth like a ſail to promote her courſe.

Others, however, have aſſerted that this notion is ridiculous. Whenever the hare pricks her ears on end, or draws one apart from or more forward than the other, it is to liſten more diſtinctly on that ſide the forwardeſt ear inclines; had Nature deſigned any ſingular aid to her *feet* from ſtretching forth the ears, ſhe would have ſupplied her with *two pair*, one to lie flat upon the ſhoulders for liſtening, whilſt ſhe ſailed by the other, and never would ſhe have had more occaſion for *both*, than when ſeverely courſed, at which time, the ears ſhe has may be obſerved to lie cloſe to the neck; and although ſhe is compelled, when thus preſſed, to try every ſhift to eſcape, this quality of *ſailing* by the ears is never ſeen; both ears are very ſtrictly applied to catch the ſmalleſt ſound of the greyhound *behind*, by which ſhe accordingly retards or increaſes her celerity.

The hares of the mountains often exerciſe themſelves in vallies and plains, and through practice grow acquainted with the neareſt way to their forms; thoſe which frequent buſhes and brakes are not able to endure labour; nor are very ſwift, being tender footed, and growing fat through diſcontinuance of exerciſe.

When the hare has left the dogs far behind, ſhe goes to ſome hill or riſing ground, where, rearing on her hinder legs, ſhe obſerves at what diſtance her purſuers are.

The trail, *i. e.* the path which the hare takes in going to her ſeat is long, ſays Xenophon, in his Obſervations upon Hare-hunting, in proportion to the length of the night. In the winter, he ſays, there is no ſcent early in the morning, when either a hoar or a hard froſt occurs. The trail is alſo ſpoiled by much dew, and by ſhowers after a long drought.

The ſcent is naturally ſtronger in wood-hares than field-hares; but in all ſorts it is ſtrongeſt when they feed on green corn. The ſcent of young hares is ſaid to be ſtronger than that of thoſe full-grown, the weakneſs of their limbs ſuffering the whole body to touch the ground. In winter mornings, the ſcent does not lie till the froſt be a little thawed ; and it may be added, that a hare always leaves more ſcent when ſhe goes to relief, than when ſhe goes to form.

Her footſteps are more ſeen in winter than ſummer ; becauſe, as the nights are longer, they travel farther. Their prints are very uncertain at the full moon, at which time they leap and play together. The young, it is to be obſerved, tread heavier than the old, becauſe their limbs are weaker. A buck, or male hare, is known by his beating the hard highways, feeding farther out in the plains, and making his doublings of a greater compaſs than the female, who keeps cloſe by ſome covert ſide ; turning, winding, and croſſing in the buſhes, like a coney, and rarely running out an end ; whereas the buck, having once made a turn or two about his form, runs ſtraight forward for four or five miles, or more, without once turning his head. Add, that the buck is known, at his riſing out of form, by his hinder parts, which are more white, and his ſhoulder, which is redder than the doe's. His head is alſo ſhorter, and his ears more grey.

The hare regulates its conduct according to the weather. In a moiſt day ſhe holds the highways more than at any other time, becauſe the ſcent is then moſt apt to lie ; and if ſhe come at the ſide of any young grove or ſpring, ſhe forbears to enter, but ſquats down at the ſide, till the hounds have overſhot her ; upon which ſhe returns the ſame way ſhe came, without turning into any covert, for fear of the wet and dew hanging on the boughs.

Regard is alſo to be had to the place where the hare ſits, and upon what wind ; for if her form be either upon the north or ſouth wind, ſhe will not willingly run into the wind, but aſide, or down the wind ; on the contrary, if ſhe form on the ſide of the water, it is a ſign ſhe is foul and meaſled, and in the courſe will make all her doubling and croſſing about brook-ſides and near plaſhes ; for her ſcent, under this condition, being very ſtrong, ſhe needs a place that will take but little. Sometimes, when hunted down, ſhe will ſtart a freſh hare, and ſquat in the ſame form ; at other times, ſhe will creep under the door of a ſheep-cote, and hide among the ſheep, or run among a flock of ſheep, and will not, without the utmoſt difficulty, be taken from among them. Add, that ſome will take the ground like a coney : this is called going to *vault*.

Some hares will go up one ſide of the hedge, and come down the other ; and it is ſaid that a hare, being ſorely hunted, has got upon a quickſet hedge, and ran a good way on the top of it, and then leaped off upon the ground ; and that it is no unuſual thing for them to take themſelves to furze-buſhes, and leap from one to another, whereby the hounds are frequently in default. Theſe accounts, however, are diſregarded by ſome as fabulous.

A hare, it is ſaid, does not live above ſeven years at moſt, eſpecially the buck ; and if he and the doe keep one quarter, they will not ſuffer any ſtrange hare to ſit by them : whence the proverb, " The more you hunt, the more hares you ſhall have ;" ſince, having killed one hare, another comes and poſſeſſes his form.

In entering a young kennel of hounds, regard muſt be had to the nature of the country and of the quarry ; for, according to the place wherein they are entered, and the game firſt given them, will they afterwards prove. Thus, if they be entered in a champaign country, they will ever after more delight to hunt there than on any other ground. The beſt time, it is ſaid, for the entering of hounds is in the heat of the day, and about October or November, the weather being then temperate, and young hares that have not been hunted, are more eaſily taken for their encouragement. Hounds, after the age of two years, ſhould be hunted three times a week, if they feed well, and may be kept out the greateſt part of the day, to try their ſtrength. See ENTRANCE and HOUND.

Having found where a hare hath relieved in ſome paſture, or corn-field ; to find her form, the ſeaſon of the year, and the ſtate of the weather are to be conſidered. In the ſpring or ſummer, a hare will not ſit in the buſhes, becauſe frequently offended with piſmires, ſnakes, and adders ; but will ſit in corn-fields, and open places. In winter they chooſe to ſit near towns and villages, in tufts of thorns and brambles, eſpecially when the wind is northerly or ſoutherly. According to the ſeaſon, and nature of the place where the hare is accuſtomed to ſit, there beat with your hounds, and ſtart her : which is better ſport than trailing of her from her relief to her form. Having ſtarted her, ſtep in, and halloo in the hounds till they have undertaken it : crying, *that, that*, or *there, there*, and go on with full cry ; then recheat them, and follow at a diſtance, taking care not to forward them too much at firſt, as being apt, if the firſt heat, to overſhoot the game. Some of the early ſportſmen never permitted the hare to be hallooed, or the hounds to be aſſiſted when they were at fault, but ſuffered them to work it out by themſelves, which, though tedious, was conſidered as a ſure way to aſcertain the goodneſs of the hounds. Above all things, mind the firſt doubling the hare makes, which is to be a key or direction for the whole day ; all the other doublings ſhe afterwards makes being like the firſt. According to the policies you ſee her uſe, and the place where you hunt, make your compaſs, to help the defaults, great or little, long or ſhort ; always ſeeking the moiſteſt and moſt commodious place for the hounds to ſcent in.

A young huntſman, ſays an ingenious ſportſman, ſhould take care, when the ſcent lies well, always to keep himſelf far behind. At ſuch a time, eſpecially if it be againſt the wind, it is impoſſible for the hare to hold forward, nor has ſhe any mode of eſcaping, but to ſtop ſhort, and when all are paſt, to ſteal immediately back. This is often the occaſion of an irrecoverable fault in the midſt of the warmeſt ſport, and is the beſt trick the hare has for her life in ſcenting weather. If the huntſman, therefore, is not too forward, he will have the advantage of ſeeing her manœuvre, and of aſſiſting his hounds at this critical moment.

Upon ſight of the hare, avoid, above all things, the vile practice of hallooing hounds off *a ſcent*, to lay them on after a *view*, it not only ſpoils the dogs, by accuſtoming them at every fault to liſten for, and expect the halloo, but it is foul ſporting ; equally unfair and to be condemned is, the ſuffering the pricks of the hare's footing to be ſmoothed when ſhe runs the foil ; for although it is admitted that by ſuch pricking and diſcovering her ſteps, no hare can eſcape, yet it is an unmanly mode of aſſiſting hounds, which no huntſman, who is a *ſportſman*, will ever be guilty of himſelf, or condeſcend to make uſe of when done by others.

The huntſman ſhould never be noiſy when a hare is firſt ſtarted ; let him not only check his own forwardneſs, but that likewiſe of the inexperienced ſportſman. Hounds are apt enough in the firſt heat of their mettle to overſhoot their game, and hours of ſad ſport have happened from driving them too faſt. Too many people think a chief part of hunting conſiſts in *hallooing loud* and *riding hard*, but they are miſtaken, and muſt not be offended ſhould the huntſman ſwear at their performances. No tongue can be allowed but his, nor, at this peculiar time, ought any one to be more forward.

The chief conſiderations for the huntſman, when the hounds are at default, are, how long the hare has been on foot, and how far the hounds make it good; if ſhe has *not* been long and hard preſſed, he muſt expeditiouſly try a wide circle, and ſo perſiſt in contracting his circles, until he returns to the place where the dogs threw up. Should the hare have been drove hard, or be nearly dead run, the huntſman need only try a ſmall compaſs, and that ſlowly and cautiouſly, for ſhe will only leap off a few rods and *quat*, until one or other of the dogs jumps upon her.

A huntſman ſhould be careful of talking too loud to hounds, and in a *key* which inſtead of cheering confounds them. Give me, ſays this author, a fellow of everlaſting patience and good temper, who does not conſider hunting merely as his *buſineſs*, but who naturally loves it, one with a clear, moderate voice, that ſpeaks to an old hound when at fault frequently and with quickneſs, and cheriſhes him in a tone that enforces courage, and induces him to ſtoop perpetually to recover the ſcent. It is by no means the huntſman's buſineſs to endeavour by pricking the hare to hit her off; in the firſt place it is unfair, and, ſecondly, whilſt he is poring with his eyes upon the ground, not one in twenty of the hounds will have his noſe to it. If there is a long *default*, the huntſman ſhould attend to the tender-noſed dog, which perhaps he diſregarded in the morning as a *babbler*, and whom he pronounced worthy of a halter for opening at nothing; his ſuperior excellence of ſcenting may now ſhew itſelf to have merited a different judgment, and may encourage ſome ſtauncher hound to ſtoop, which he would not otherwiſe do."

A huntſman is never to give up a default whilſt day-light and weather permit; if the hare is not killed and taken up, there is no good reaſon why it is not to be recovered, and it ſhould be a ſtanding maxim, that it is always as eaſy to recover a *loſt* hare as to ſtart a *freſh* one.

In the opinion of Mr. Beckford, the number of hounds ſhould not exceed twenty couple in the field, from the difficulty of getting a greater number to run well together, and a pack of harriers (as well as fox-hounds,) are incomplete if they do not. A hound that runs too faſt for the reſt ought not to be kept. Some huntſmen load them with heavy collars, or tie a long ſtrap round their necks; a better way would be to part with them. Whether they go too *ſlow* or too *faſt*, they ought equally to be drafted. The hounds moſt likely to ſhow ſport are between the large, ſlow hunting harrier, and the little fox beagle; the former are dull, heavy, and too ſlow; the latter are lively, light, and too fleet. The firſt ſort have moſt excellent noſes, and will kill their game at laſt, if the day be long enough. The other, on the contrary, daſh and are all alive, but every cold blaſt affects them, and in a deep and wet country it is not impoſſible but that ſome of them may be drowned. His opinion reſpecting the huntſman is, that he ſhould not be young, and for *patience* he ſhould be a very *Grizzle*; the quieter he is the better, and he ſhould have perſeverance and never give up a hare when it is poſſible to hunt her, as ſhe is ſure to ſtop, and therefore may always be recovered; he jocularly remarks, that were it cuſtomary to attend to the breed of huntſmen as well as to that of hounds, the family of the *ſilent gentleman*, mentioned by the Spectator, would furniſh an excellent croſs, and that a female of his lineage, married to a knowing huntſman, would probably produce a perfect hare-hunter. The whipper-in to a pack of harriers ſhould not be allowed to ſtop a hound or ſmack his whip, without the huntſman's order. Noiſe and rattle are directly adverſe to the firſt principle of hare-hunting, which is to be quiet and leave the hounds to themſelves. If a long fault makes the huntſman's aſſiſtance neceſſary, and the hare ſhould have headed back, he will obſerve whether ſhe has turned of her own accord, or has met any thing in her courſe to turn her. When he caſts his hounds, let him begin with a ſmall circle, if that is unſucceſsful, try a larger, and as a hare generally reviſits her old haunts, and returns to the place where ſhe was firſt found, if the ſcent be quite gone, and the hounds can no longer hunt, *that* is as likely a caſt as any to recover her. Let him remember in all his caſts, that the hounds are not to follow his horſe's heels, nor are they to carry their noſes in the air. At theſe times they muſt try for the ſcent, or they will never find it; and he is to make his caſt either quick or ſlow, as he perceives his hounds try, and according to the goodneſs or badneſs of the ſcent.

When hounds are at a check, the huntſman ſhou'd not move his horſe one way or the other. Hounds lean naturally towards the ſcent, and if nothing be ſaid, will ſoon recover it: if a hound is ſpoken to at ſuch a time, calling him by his name, (which is too much practiſed,) he ſeldom fails, ſays Mr. Beckford, to look up, as much as to ſay, *What the deuce do you want?* Had he the faculty of ſpeech, he would add, before he ſtooped to the ſcent again, *You fool, let me alone.* When hounds are at fault, not a word ſhould be ſaid; no other tongue ſhould be heard but that of a hound; and ſo inflexible was a friend of Mr. Beckford who kept harriers, in this particular, that a gentleman accidentally coughing whilſt his hounds were at fault, he rode up to him immediately, and ſaid "*I wiſh, ſir, with all my heart, that your cough was better.*"

When the hare is firſt ſtarted, ſays Mr. Beckford, ſportſmen cannot be too quiet. Hounds through the whole chaſe ſhould be left almoſt entirely to themſelves, and never be much hallooed; when the hare doubles, they ſhould hunt through theſe doubles; nor is a hare hunted *fairly* if hunted otherwiſe; they ſhould follow every ſtep ſhe takes, as well over greaſy fallows, as through flocks of ſheep, nor ſhould they be ever caſt, if able to do any thing without it. On high roads and dry paths, the huntſman ſhould always be doubtful of the ſcent, nor give them much encouragement; but when a hit is made on either ſide, it is then right to cheer them as much as you pleaſe. A hare generally deſcribes a circle in her flight, larger or ſmaller, according to her ſtrength and the openneſs of the country. In encloſures and where there is much cover, the circle is ſo ſmall that it is a conſtant puzzle to the hounds. Beſides running the foil, they frequently make doubles, which is going forward, to tread the ſame ſteps, back again, on purpoſe to confuſe their purſuers; and the ſame manner in which the firſt double is made, they moſtly continue, whether long or ſhort. This information, ſays Mr. Beckford, if properly marked by the huntſman, may be uſeful in his caſts. When hares make their doubles on a high-road, or dry path, and then leave it with a ſpring, it is often the occaſion of a long fault: the *ſpring* which a hare takes on theſe occaſions, is hardly to be credited, any more than her ingenuity in thus trying to eſcape. Often, after running a path a conſiderable diſtance, ſhe will make a double, and ſtop until the hounds are paſt her, ſhe will then ſteal away, and return the ſame way ſhe came; this is the greateſt of all trials for hounds. It is ſo hot a foil, that in the beſt packs there are not many hounds that can hunt it; thoſe hounds muſt be followed that can, and the foil when ſhe breaks it, (which in all probability ſhe will ſoon do, as ſhe now thinks herſelf ſecure,) be tried to be hit off. When the ſcent lies bad in cover, ſhe will ſometimes ſeem to hunt the hounds. Particular directions, ſays Mr. Beckford, ſhould be given to the huntſman, to prevent the hounds all in his power, from *chopping* hares. In furze they lie very cloſe, hedges are alſo dangerous: the beſt way is to have the hedge well beaten ſome diſtance before the hounds, for if the huntſman beats the hedge himſelf, as is the general practice, the hounds are always upon the watch, and a hare muſt have great luck to eſcape them all. Hares ſeldom run ſo gallantly as when they do not know where they are; in a fog they run well; if they ſet off down the wind, they rarely return, and hounds cannot then be puſhed on too much; when the hare is ſinking, the old hounds will get forward; they, *then*, will run at *head*.

Keep no *babblers* or hounds that run falſe; the loſs of one hare is more than ſuch dogs are worth.

Hunting, *Hart* or *Stag*. (See Cervus *Elaphus*.) This animal the firſt year is called a *calf*, or *hind-calf*; the ſecond year, a *knobber*; the third, a *brock*; the fourth a *ſtaggard*; the fifth a *ſtag*; the ſixth a *hart*.

The female is called a *hind*. The firſt year ſhe is a *calf*; the ſecond a *hearſe*, and ſometimes a *brocket's ſiſter*; the third a *hind*.

Terms occurring more eſpecially in hunting the hart, and not yet explained, are as follow. The print or impreſſion, where a deer has lain, is called a *layer*; if it be in covert, or a thicket, it is called his *harbour*; where a deer has paſſed into a thicket, leaving marks whereby his bulk may be gueſſed at, it is called an *entry*; when they caſt their heads they are ſaid to *mew*; when they rub their heads againſt trees, to bring off the peels of their horns, they are ſaid to *fray*; when a deer, hard hunted, takes to ſwimming in the water, ſhe is ſaid to go to *ſoil*; when they turn head againſt the hounds, they are ſaid to *bay*; when the hounds touch the ſcent, and draw on till they put up the hart, they are ſaid *to draw on the ſlot*.

As to the nature and qualities of the hart, it is to be obſerved that he is an excellent ſwimmer; there being inſtances, when ſore hunted, of his plunging in the ſea, and being killed by fiſhermen twelve miles from land. When, in going to rut, they have occaſion to croſs a great river, or arm of the ſea, it is ſaid they aſſemble in great herds; the ſtrongeſt goes in firſt, and the next of ſtrength follows; and ſo one after the other, relieving themſelves by ſtaying their heads on the buttocks of each other.

The hind commonly carries her calf eight or nine months, which uſually falls in May: ſome have two at once; and they always eat up the ſkin wherein the calf lay. As the young grow up, the old one teacheth it to run and leap, and how to defend itſelf from the hounds.

The hart is amazed at hearing any one call, or whiſtle, in his fiſt; if you cry *ware, ware*, or *take heed*, you will ſee him inſtantly turn back, and make ſome little ſtand. His ſenſe of hearing is very perfect when his head and ears are erected; but very imperfect when he holds them down: hence when he pricks up his ears, he is known to be apprehenſive of danger. When he is on foot, and not afraid, he wonders, and takes a pleaſure to gaze at every thing he ſees.

The hart is long lived, but leſs ſo than ſome perſons have conceived. (See Cervus *Elaphus*.) The principal marks of his age are taken from his head, yet this is ſomewhat precarious; ſome having more croches thereon at the ſame age than others.

The capture of this beaſt requires great art and attention. When the hunter goes for ſport, he is firſt to encompaſs the beaſt *en ſon giſte*, in her own layer, and thus unharbour her in the view of the dogs, ſo that they may never loſe her ſlot or footing. But note, a conſiderable degree of choice and diſcretion is here required; for he may not ſet off upon every one, either of the herd, or thoſe which wander ſolitary: the young, the ſmall, &c. are to be paſſed over; and partly by ſight, and partly by the footing, fewmets, the largeneſs of the layer, &c. he muſt make judgment of the game, ſingling out for that purpoſe the largeſt head in the whole herd.

There are divers means for knowing an old hart; *viz.* by the *ſlot*, the *entries*, the *abatures*, and *foils*, the *fumets*, *gait*, and *walks*, *fraying-ſtocks*, and the *head* and *branches*. 1. As to the ſlot. The treadings of the hart's foot are to be carefully noted: if you find the treadings of two, the one long, and the other round, yet equally big, the longeſt ſlot declares the largeſt hart; add, that the old hart's hind foot never over-reaches the fore-foot, as that of the young one does. 2. The fewmiſhing is chiefly to be judged of in April or May: if it be large and thick, it ſignifies the hart to be old. 3. To know the height and thickneſs of the hart, obſerve his entries and galleries into the thickets, and what boughs he hath over-ſtridden, and mark from thence the height of his belly from the ground; for a young deer uſually creeps low, as he paſſes to his harbour, and goes through places which the old one, being ſtiff and ſtately, will not ſtoop to. 4. By his gait it may be known whether the hart be large, and whether he will ſtand long before the hounds: if he have a long ſtep, he will ſtand long, being ſwift, light, and well breathed; if he have a great ſlot, which is the ſign of an old deer, he will be a laſter. As to his fraying-poſt, note, that the older the hart is, the ſooner he goeth to fray, and the greater is the tree he chooſes to fray upon; it being neceſſary it be ſuch as may not bend. Now, to ſeek or find out a hart in his haunt, or feeding-place, it is to be obſerved, that he changes his manner of feeding every month. From the concluſion of the rutting time, which is in November, they feed in heaths and broomy places. In December they herd together, and withdraw into the ſtrength of the foreſts, to ſhelter themſelves from the ſevere weather, feeding on holm-trees, elder-trees, brambles, &c. The three following months they leave the herding, but keep four or five in a company, and in the corners of the foreſt will feed on the winter paſture, ſometimes making their excurſions into the neighbouring corn-fields, if they can perceive the blades of wheat, rye, &c. appear above ground. In April and May they reſt in thickets and ſhady places, ſtirring very little till rutting time, unleſs diſturbed. The three ſucceeding months they are in their pride of greaſe, and reſort to ſprings, copſes, and corn-fields. In September and October they leave the thickets, and go to rut; during which ſeaſon, they have no certain place either for food or harbour.

Having found out the game, the hunters diſcouple and caſt off the dogs; and ſome on horſeback, others on foot, follow the cry with the utmoſt art, obſervation, and ſpeed, remembering and preventing the ſubtle turning and headings of the hart; ſtanding with dexterity and intrepidity to leap hedge, pales, ditch, &c.

The utmoſt addreſs and circumſpection are to be uſed to keep to the beaſt firſt attempted, and to prevent the dogs from purſuing any other: this, in effect, makes one of the principal difficulties and glories of the chaſe; the beaſt having a hundred devices to put off ſome other head for his own: ſometimes he will ſend forth ſome other little deer in his ſtead into the dogs' way, laying cloſe at this time himſelf; on which occaſion the huntſman is to ſound a retreat, and break off the dogs, and take them in leam, till the game be recovered.

Sometimes he will purpoſely ſeek out other deer at layer, and rouſe them to make the hounds hunt change, himſelf lying down flat in ſome of their layers upon his belly, to make the hounds over-ſhoot him: add, that they may neither ſcent nor vent him, he will gather up his fore-feet under his belly, and blow or breath on ſome moiſt place of the ground, ſo that the hounds ſhall paſs within a yard, without apprehending him. He will break into one thicket after another, to find deer, rouſing, gathering them together, and herding with them, and even beating ſome of them into his treads, that he may the more eaſily eſcape. Finding himſelf ſpent, he will break herd, and fall to doubling and croſſing in ſome hard beaten highway, always running againſt the wind, not only to cool himſelf, but the better to hear the voice of his purſuers.

The laſt refuge of a hart ſorely hunted, is the ſoil; keeping the middle for fear, leaſt by touching a bough, or the like, he may give ſcent to the hounds. He always ſwims againſt the ſtream; whence the old rule, "He that will his chaſe find, let him try up the river, and down the wind." In taking ſoil, he will ſometimes cover himſelf under water, ſo as to ſhew nothing but his noſe.

Where opportunity of water fails, he will fly into herds of cattle, as cows, ſheep, &c. and will ſometimes leap on an ox, cow, or the like, laying the fore part of his body thereon, that ſo touching the earth with his hinder feet, he may leave a ſmall or no ſcent behind. What is farther ſtill, the chief huntſman of Lewis XII. relates, that a hart which they were in hard chaſe of, leaped into a great tall white thorn, which grew in a ſhadowy place, and there ſtood aloft till he was run through by a huntſman, rather than he would ſtir.

The hart being killed the huntſman with his horn windeth the fall of the beaſt; upon which every one approaches: the ſkilfulleſt opens the breaſt, rewarding the hounds with what properly belongs to them; the huntſman, at the ſame time, dipping bread in the ſkin and blood of the beaſt to give the hounds their full ſatisfaction.

The hart is known to be ſpent by his running ſtiff, high, and lampering, by his mouth being black and dry, without foam on it, and his tongue hanging out; though he will ſometimes cloſe his mouth to deceive the ſpectators; and by his ſlot, for he will ſometimes cloſe his claws together, as if he went at leiſure, and immediately again open them wide, making great glidings, and hitting his dewlaps upon the ground, &c. When quite ſpent, and cloſe beſet, or intercepted on all ſides, the hart uſually takes to bay, and makes force with his head againſt the firſt man or dog that cloſes in upon him, unleſs prevented with a ſpear, ſword, or the like. Hence it is very dangerous going in to a hart at bay, either on land or in the water, eſpecially at rutting time, for then they are more than ordinarily fierce.

The hart being killed, his death is ſolemnized with great ceremony. The firſt thing, when the huntſmen come in, is, to cry, *Ware haunch*, that the hounds may not break into the deer: having ſecured this, they cut his throat, and blood the younger hounds, to make them love deer; and learn to leap at his throat; then having blown the mort, and all the company being come in, the moſt diſtinguiſhed perſon, who has not taken *ſay* before, takes up the knife, and lays it acroſs the belly of the deer, (ſome of the aſſiſtants holding by the fore-legs, and at the ſame the huntſman drawing down the pizzle,) and thus he draws the knife along the middle of the belly, beginning near the briſket, cutting deep enough to diſcover how fat he is. Then the moſt ſkilful perſon breaks up the deer, by firſt ſlitting the ſkin from the cutting of the throat downwards, making the arber, that the ordure may not break forth, and then paunching him, and rewarding the hounds with it.

Laſtly, the perſon that took the *ſay*, being preſented with a drawn hanger, he is to cut off the head; which done, and the hounds rewarded with it, the concluding ceremony, if a buck, is a double; if a ſtag, a treble mort, blown by one, and a recheat in concert by all that have horns: the whole is then concluded with a general *whoop*, *whoop*.

HUNTING, *Otter*. See OTTER.

The otter is to be hunted by particular dogs, called *otter hounds*, and alſo with ſpecial inſtruments, called *otter ſpears*. To find him out, ſome are to go on one ſide of the river, and ſome on the other, beating all the way on the banks, with the dogs following. Thus it is ſoon found if there be an otter in that quarter; for the otter cannot endure long in the water, but muſt come forth to make his ſpraints, (excrements,) and in the night ſometimes to feed on graſs and other herbs. If the hounds find an otter, look in the ſoft and moiſt places, to learn by the prints which way he bent his head: if theſe make no diſcovery, it may be partly perceived by the ſpraints. This done, follow the hounds, and lodge him as a hart or deer.

The otter always endeavours to keep to the water, where he is maſter. In hunting him, therefore, you are to be ready with your ſpears, to watch its vents; for that is the chief advantage: if you perceive where he ſwims under water, ſtrive to ſet a ſtand before him, where you expect he will vent, and there endeavour to ſtrike him with the ſpear; if you miſs, purſue him with the hounds; which, if they be good, and well entered, will come chaunting and trailing along the river-ſide and beat every tree, root, every oſier-bed, and tuft of bulruſhes; nay, ſometimes they will take the water, and beat it like a ſpaniel; by which means the otter can hardly eſcape.

If the beaſt find himſelf wounded with a ſpear, he uſually makes to land, where he will maintain a furious battle with the dogs.

HUNTING, *Roe-buck*. See ROE-BUCK, *Roe* DEER, and CERVUS *Capreolus*.

We have no roe-deer in England; but they abound in the Highlands of Scotland, Germany, Africa, &c. And it ſhould ſeem that they have been more common among us, our huntſmen ſtill retaining the proper terms for the chaſe.

They make good chaſe, ſtand long, and fly end-way. When a roe croſſes and doubles, it is called *trapyning*. Their ſwiftneſs appears not only on the earth, but in waters, through which they cut their way as with oars; whence they love lakes and ſtreams, breaking the floods to come at freſh paſture, feeding on ruſhes, &c.

Horns grow only on the male; being ſet with ſix or ſeven branches not palmed, but branchy, yet ſhorter than fallow-deer. After rutting he caſts his head.

They are ſaid never to wink, not even when aſleep; for which conceit their blood is by ſome fanciful people preſcribed to perſons dim-ſighted or purblind. The tail of this beaſt is leſs and ſhorter than that of a fallow-deer, inſomuch that it is queſtioned whether it ought to have that denomination.

They keep moſtly in mountains among the rocks: and when hunted, Martial tells us, will hang on them with their horns, to delude the dogs. They are often taken by counterfeiting their voice, which the huntſman does by the aſſiſtance of a leaf in his mouth.

When hunted, they turn much and often, and will come back on the dogs directly. When they can no longer endure, they alſo take ſoil, as the hart; and will ſometimes hang by a bough in ſuch a manner, as that nothing ſhall appear above the water but their ſnout.

HUNTING-*match*. The firſt thing that is to be conſidered by one who deſigns to match his horſe for his own advantage, and his horſe's credit, is not to flatter himſelf with the opinion of his horſe, by fancying that he is a ſwift, when he is but a ſlow gallopper; and that he is a whole running horſe (that is, that he will run four miles without a ſob at the height of his ſpeed) when he is not able to run two or three. Very probably ſome gentlemen are led into this error, by their being miſtaken in the ſpeed of their hounds, who, for want of trying them againſt other dogs that have been really fleet, have ſuppoſed their own to be ſo, when, in reality, they are but of a middling ſpeed; and becauſe their horſe, when trained, was able to follow them all day, and upon any hour, to command them upon deep as well as light earths, have therefore made a falſe concluſion, that their horſe is as ſwift as the beſt; but upon trial againſt a horſe that has been rightly trained after hounds that were truly fleet, have bought their experience perhaps full dear: therefore it is adviſable for all lovers of hunting to procure two or three couple of tried hounds, and once or twice a week to follow after them a train-ſcent, and when he is able to top them on all ſorts of earth, and to endure heats and colds ſtoutly, then he may better rely on his ſpeed and toughneſs.

That horſe which is able to perform a hare-chaſe of five or ſix miles briſkly and courageouſly, till his body be as it were bathed in ſweat: and then after the hare has been killed, in a nipping froſty morning, can endure to ſtand till the ſweat be frozen on his back, ſo that he can bear being pierced with the cold as well as the heat, and then even in that extremity of cold to ride another chaſe as briſkly and with as much courage as he did the former, that horſe which can thus endure heats and colds is moſt valued by ſportſmen. Therefore, in order to make a judgment of the goodneſs of a horſe, obſerve him after the death of the firſt hare, if the chaſe has been in any degree briſk; if when he is cold he ſhrinks up his body, and draws his legs up together, it is an infallible ſign of want of vigour and courage; the like may be done by the ſlackening of his girths after the firſt chaſe, and from the dulneſs of his teeth, and the dulneſs of his countenance, all which are true tokens of faintneſs, and being tired; and ſuch a horſe is not to be relied on, in caſe of a wager.

Here it will not be improper to take notice of the way of making matches in former times, and the modern way of deciding wagers. The old way of trial was, by running ſo many train-ſcents after hounds, as were agreed upon between the parties concerned, and a bell-courſe, this being found not ſo uncertain, but more durable than hare-hunting; and the advantage conſiſted in having the trains laid on earth moſt ſuitable to the qualifications of the horſes. But now others chooſe to hunt the hare till ſuch an hour, and then to run this *wild-gooſe* CHASE (which ſee), a method of racing that takes its name from the manner of the flight of wild-geeſe, which is generally one after another: ſo the two horſes, after running of twelveſcore yards, had liberty, which horſe ſoever could get the leading, to ride what ground he pleaſed, the hindmoſt horſe being bound to follow him, within a certain diſtance agreed on by articles, or elſe to be whipped up by the triers or judgers which rode by; and whichever horſe could diſtance the other, won the match.

But this chaſe was found by experience ſo inhuman, and ſo deſtructive to good horſes, eſpecially when two good horſes were matched; for neither being able to diſtance the other, till both were ready to ſink under their riders through weakneſs, that oftentimes the match was fain to be drawn and left undecided, though both the horſes were quite ſpoiled.

This brought up the cuſtom of train-ſcents, which afterwards was changed to three heats, and a ſtraight courſe; and that the lovers of horſes might be encouraged to keep good ones, plates have been erected in many places of England. The fewer of theſe before you come to the courſe, if your horſe be fiery and mettled, the better, and the ſhorter the diſtance the better. Alſo, above all things, be ſure to make your bargain to have the leading of the firſt train, and then make choice of ſuch grounds where your horſe may beſt ſhow his ſpeed, and the fleeteſt dogs you can procure: give your hounds as much law before you as your triers will allow, and then, making a looſe, try to win the match with a wind; but if you fail in this attempt, then bear your horſe, and ſave him for the courſe; but if your horſe be ſlow, but well winded, and a true ſpurred nag, then the more train-ſcents you run before you come to the ſtraight courſe, the better. But here you ought to obſerve to gain the leading of the firſt train; which in this caſe you muſt lead upon ſuch deep earths, that it may not end near any light ground; for this is the rule received among horſemen, that the next train is to begin where the laſt ends, and the laſt train is to be ended at the ſtarting place of the courſe; therefore remember to end your laſt on deep earths, as well as the firſt.

HUNTING *Cap*, in the language of the *Sportſman*, is a cap made of leather, and covered with black velvet, fitting cloſe to the head behind, and having a ſemi-circular peak before, for the protection of the face in caſe of falls, as well as in paſſing through ſtrong coverts during the chaſe. In the ſporting world it is termed a "daſher."

HUNTING *Whip*, is of different lengths in the handle or ſtock, and has at one end a long thong and laſh, to aſſiſt occaſionally in managing the hounds, and at the other a hook, hammer, or claw, for the purpoſe of holding or opening gates.

HUNTING *Saddle*. See SADDLE.

HUNTING *Creek*, in *Geography*, a river of America, in Virginia, which runs E. into Potowmack river, at the S. corner of the territory of Columbia.

HUNTING *Iſlands*, a cluſter of ſmall iſlands in the Atlantic ocean, near Port Royal, in the ſtate of South Carolina. N. lat. 32° 24′. W. long. 80° 35′.

HUNTING *Sound*, a narrow channel on the coaſt of North Carolina, between Core bank and the continent.

HUNTINGDON, the principal town in Huntingdonſhire, England, is ſituated on the northern ſide of the river Ouſe, and is nearly connected, by three bridges and a cauſeway, with the village of Godmancheſter, whence, according to Camden, it ſprung. This place is called Huntandene in the Saxon chronicle, and Huntantun in other ancient writings. Henry of Huntingdon, the archdeacon and hiſtorian, deſcribes it as "ſurpaſſing all the neighbouring towns in pleaſantneſs of ſituation, beauty of buildings, nearneſs to the fens, and plenty of game and fiſh." Moſt writers agree with Camden reſpecting the origin of this town; and like him, have placed the Duroliponte of Antoninus at Godmancheſter; yet the nature of the ground affords almoſt deciſive evidence that the Roman ſtation could not have been at that village, but was rather at Huntingdon, where the entrenchments, yet remaining, ſhew the works to have been very ſtrong and extenſive; and even Camden's own teſtimony may be urged in ſupport of the opinion, that theſe fortifications had a far more remote origin than is commonly aſſigned. "On the river near the bridge," he obſerves, "which is fair built of ſtone, are to be ſeen the mount and ſeite of a caſtle, which, in the year 917, king Edward the Elder built anew; and David the Scot, (to whom, according to an ancient hiſtorian, king Stephen gave the borough of Huntingdon, for an augmentation of his eſtate,) enlarged with many works." Now, the re-building of the caſtle by Edward evinces, in a great meaſure, its previous antiquity; and its ſcite, as in Camden's time, ſtill remains to prove, that no ſpot of ground in this neighbourhood could be better adapted for a ſtation or fortreſs. On the ſouth it is bounded by the river, from which it riſes very abruptly to a conſiderable height; the outer ramparts incloſe an area of ſeveral acres, of a ſquare form, with the angles rounded off, and the whole was environed by a deep ditch; the banks on the ſouth, and ſouth eaſt, are ſtill very bold. Not any veſtiges of buildings now remain, but the foundations may, in various places, be traced from the unevenneſs of the ſurface; the artificial mount, on which moſt probably ſtood the keep of the caſtle, was alſo ſurrounded by a ditch. Below the high ground, to the ſouth-weſtward of the entrenchments, is an extenſive and fertile meadow, called Portſholm, which Camden deſcribes as "the moſt freſh and beautiful that the ſun ever ſhone upon." This meadow is partly ſurrounded by the Ouſe river; and here the Huntingdon races are held; a ſmall part of it, which belonged to the protector Cromwell, and is now the property of the earl of Sandwich, ſtill bears the appellation of Cromwell's-Acres.

Huntingdon is a borough by preſcription, and the only one in the whole county. In the time of Edward the Confeſſor, as appears from the Domeſday book, there were in "this burgh, four ferlings, in two of which were 116 burgeſſes, paying cuſtom and geld, and under them 100 bordarii, who help to pay the geld; in the other two ferlings were 140 burgeſſes, ſubject to all cuſtoms, and the king's geld."

Scarcely any hiſtorical events are recorded as happening in this town. During the civil war, in the time of Charles I., it was pillaged by the king's troops, who were commanded by the king in perſon.

The religious houſes, of which there were formerly four of different deſcriptions, are almoſt as entirely obliterated as the buildings of the caſtle. The moſt ancient was a priory of Auſtin canons founded on the ſpot where St. Mary's church now ſtands, before the year 973, as appears from a charter of that date, granted by king Edgar to Thorney abbey. The buildings have long been demoliſhed; but the lanes which ſeparated the cloſes ſtill retain their ancient appellation. The next foundation in order of time, was an hoſpital for a maſter and brethren, and ſeveral leprous and infirm people, to which Malcolm IV. king of Scotland, and earl of Huntingdon, was a great benefactor. Another hoſpital, for leprous and poor people, was founded by David, earl of Huntingdon, in the time of Henry II. A houſe of Auguſtine friars was alſo eſtabliſhed at the north end of the town, previous to the nineteenth year of Edward I. Huntingdon is generally ſtated to have been once much larger than at preſent; and ſir Robert Cotton, as quoted by Speed, aſcribes its decay to ſome alterations made in the river by one Grey, a minion of the time, by which its navigation was impeded. Leland ſays, that ſome ages before it had fifteen churches, though, in his time, reduced to four; the reſt fallen through time and neglect, but traces of their walls and yards remaining. There are now only two churches, thoſe of St. Mary and All Saints; but the town ſtill conſiſts of four pariſhes; that of St. John being connected with All Saints, and that of St. Benet with St. Mary's. The church of St. Mary, which is the corporation church, was rebuilt in the reign of James I., between the years 1608 and 1620, as appears from thoſe dates over the north door-way: on the tower is the date 1613. It conſiſts of a nave, chancel, and aiſles, with a handſome embattled tower at the weſt end, having ſtrong buttreſſes with ornamental niches at the angles. The chancel contains ſeveral monuments to the Sayer family, one of whom, George Sayer, gent. contributed largely towards the internal repairs of this edifice, and beſides ſeveral other donations, gave 500*l.* to purchaſe lands, the rents to be appropriated to the miniſters of the two churches. Nearly oppoſite to St. Mary's church is a reſpectable manſion, now the property and ſeat of ſir John Arundel, bart. All Saints church, which ſtands on the north ſide of the market place, appears, from the character of its architecture and ornaments, to have been built in the time of Henry VII. It is an embattled edifice with a ſmall tower at the north-weſt angle; below the battlements is a bold cornice, charged with a multiplicity of ſculptures, repreſenting human and animal heads, flowers, &c., and among them the Tudor roſe and the portcullis.

The principal charitable eſtabliſhments in this town are, a free grammar ſchool, well endowed; and a green coat ſchool, wherein twenty four boys are cloathed and educated. This is called Walden's charity, from Lyonel Walden, eſq. who, by will dated July 1719, left a ſufficient endowment for the purpoſe of ſupporting it. Among various other donations for charitable uſes in Huntingdon, was the ſum of 2000*l.* bequeathed by Richard Fiſhbourn, a citizen of London, who died in 1625; this money was to purchaſe lands, the rents of which were to be appropriated to the uſe of the poor: he made ſimilar bequeſts to other places, the amount of the whole being 11,000*l.* The market place is a ſpacious area, on the ſouth ſide of which ſtands the town-hall, a modern brick building, ſtuccoed, with a ſort of piazza in front and at the ſides for the market people; and behind it the butchers' ſhambles. The aſſizes for the town and county are held here twice a-year; the lower part of the building being divided for the purpoſe into two courts; one for criminal, and one for civil cauſes. Above is a ſpacious aſſembly room, ornamented with full length portraits of their majeſties, George II. and III. with their reſpective queens; and alſo a well painted picture of John, earl of Sandwich, who died in 1792. The market, which is held on Saturdays, is well ſupplied with proviſions in general; and great quantities of corn are ſold. Huntingdon had its firſt charter about the year 1206; king John granted it a peculiar coroner, a recorder, town-clerk, and two bailiffs, with the receipt of tolls and cuſtoms. Charles II., by a new charter, veſted the government in a mayor, twelve aldermen, and an indefinite number of burgeſſes or common council, choſen from the principal inhabitants. This borough ſent members to parliament *ab origine*, from the twenty-third of Edward I; the right of returning the two members is generally underſtood to be poſſeſſed by the freemen and inhabitant houſholders, paying ſcot and lot; the number of voters is about 200; both the repreſentatives are however nominated by the earl of Sandwich. The town principally conſiſts of one ſtreet, extending, in a north-weſterly direction, from the banks of the Ouſe, to nearly the diſtance of a mile, and having ſeveral lanes branching off at right angles. The ſtreets are paved, and lighted in the winter by a ſmall aſſeſſment levied on the houſholders. The ancient town appears to have ſpread further eaſtward; yet whatever might formerly have been the extent of Huntingdon, the population ſeems to be nearly the ſame as it was a century paſt; as biſhop Gibſon ſtates the number of families it contained in 1717 to be 400, whilſt the return made to parliament in 1801, records their amount to be 350, conſiſting of 2035 perſons, inhabiting 356 houſes.

Among the more eminent natives of this town, was Henry, ſurnamed *de Huntingdon*, from the place of his birth, a diſtinguiſhed eccleſiaſtic and hiſtorian; who lived in the reigns of Henry III. and Edward I.; and wrote a hiſtory of the Saxon heptarchy, with accounts of the ſucceeding kings to the reign of Stephen. Richard Fiſhbourn, gent. who has been already mentioned for his charities, was alſo a native. Huntingdon was likewiſe the birth-place of one of the moſt extraordinary characters that ever lived, the protector Oliver Cromwell, who, though prevented by conſiderations of policy from aſſuming the regal title, enjoyed all the eſſentials of ſovereignty, and ruled this country with more than regal power. (See CROMWELL.) Beauties of England and Wales, vol. vii.

HUNTINGDON, an extenſive and mountainous county in Pennſylvania, bounded N. and N.W. by Lycoming county, E. and N.E. by Mifflin, S.E. by Franklin, S. and S.W. by Bedford and Somerſet, and W. by Weſtmoreland. It is about 75 miles long, and 39 broad; comprehending 1,432,960 acres of land, divided into 18 townſhips, containing 3068 inhabitants. In this county are found limeſtone, iron ore, and lead. Works have been eſtabliſhed for the manufacture of iron and lead.

HUNTINGDON, the capital of the above county, which is a poſt-town, ſituated on the N.E. ſide of Juniatta river, and at the mouth of Standing-ſtone creek, 50 miles from the mouth of Juniatta, and containing about 90 houſes, a court-houſe, gaol, and 1251 inhabitants; 184 miles W.N.W. of Philadelphia. About ſix miles N.N.E. of the town is a mineral ſpring, celebrated for relieving rheumatiſm, and curing cutaneous diſorders. N. lat. 40° 26′. W. long. 78° 2′.—Alſo, a poſt-town on the N. ſide of Long iſland, New York, at the head of a bay in Suffolk county, containing about 70 houſes, a Preſbyterian and an epiſcopal church; 38 miles E. by N. of New York city, containing 3892 inhabitants.—Alſo, a poſt-town in Fairfield county, Connecticut, containing 2792 inhabitants.

HUNTINGDON, *North* and *South*, two townſhips, in Weſtmoreland county, Pennſylvania, the former containing 1484, and the latter 2317 inhabitants.

HUNTINGDONSHIRE, one of the inland counties of England, is bounded on the ſouth-eaſt and north-eaſt ſides by Cambridgeſhire, on the north and north-weſt by Northamptonſhire, and on the ſouth-weſt by Bedfordſhire. Its limits are chiefly artificial: the river Nene, on the Northamptonſhire border, with the King's Delf, the Old Weſt Water, and the Ouſe river, on the Cambridgeſhire ſide, being the principal exceptions. The general form of this county is an irregular ſquare: its extent, from north to ſouth, is nearly thirty miles; its greateſt breadth, from eaſt to weſt, twenty-three; and its circumference about one hundred: its ſuperficial contents have been eſtimated at from 220,000 to 240,000 acres. It contains four hundreds, ſix market towns, 107 pariſhes, 6976 houſes, and 37,568 inhabitants, *viz.* 18,521 males, and 19,047 females, according to the late returns made under the population and poor acts. It ſends four members to parliament; two for the ſhire, and two for the town of Huntingdon. The government of this county is very peculiar; Cambridgeſhire being joined to it under one ſheriff, who is choſen out of that county one year, out of the iſle of Ely the ſecond, and out of this county the third: and in the iſle of Ely alternately out of the north and ſouth parts. The whole of this county is in the dioceſe of Lincoln.

Ancient Hiſtory.—Huntingdonſhire, with the adjacent counties of Cambridge, Norfolk, and Suffolk, originally compoſed the territory of the Iceni; and in the Roman diviſion of the kingdom was included in the diſtrict named Flavia Cæſarienſis. The principal Roman ſtations in Huntingdonſhire, were Duroliponte at Huntingdon, and Durobrivæ, near Dornford Ferry, about midway between Cheſterton in this county, and Caſtor in Northamptonſhire. The principal ancient roads, of which there appear to have been three, interſected each other near Huntingdon: one of them has been called the Britiſh Ermin. This ſeems to have entered the county from the vicinity of Cæſar's camp, or Salenæ, in Bedfordſhire, and to have proceeded by Cranehill, in the track ſince known by the name of Hell-lane, whence paſſing through Toſeland, Godmancheſter, and Huntingdon, it continued by Alconbury, Weſton, and Upton; and entered Northamptonſhire at Wandsford. The Roman Ermin-ſtreet came into this county from Cambridgeſhire, near Papworth St. Agnes, and proceeded to Godmancheſter; branching off to the eaſtward, it croſſed Northamptonſhire, and entered Rutlandſhire, near Stamford. The Via Devana, the third and laſt of theſe roads, entered this county from Cambridgeſhire in the neighbourhood of Fenny Stanton, and quitted it for Northamptonſhire in the vicinity of Clapton. In the early Saxon times, this diſtrict formed a part of the kingdom of Eaſt Anglia, and was then called Hunteduneſcyre, and Huntanduneſcyre. It was afterwards ſubjugated by the Mercian ſovereigns, and continued under their dominion till the union of the Saxon ſtates into one monarchy, by Egbert. "In the decline of the Saxon government," Camden obſerves, "this county had an officiary earl, Siward; for earldoms were not yet hereditary in England, but the governors of ſhires were, according to the cuſtom of that period, called earls, with the additional title of the ſhires they preſided over: as this Siward, while governor here, was called earl of Huntingdon, but afterwards having the government of Northumberland conferred upon him, he was called earl of Northumberland." The principal land owners in this county in the Norman times, as recorded in the Domeſday book, were the king, the biſhops of Lincoln and Conſtance; the abbots of Ely, Croyland, Ramſey, Thorney, and Peterborough; the counteſs Judith, ſheriff Euſtace, earl Euſtace, earl of Ow, earl Hugh, Walter Giffard, William de Warren, Hugh de Bolebec, Eudo Fitz-Hubert, Swain of Eſſex, Roger de Iveri, Arnulf de Heſding, Gilbert de Gaunt, Aubrey de Ver, Ralph Fitz-Oſmund, and Rothais, wife of Richard Fitz-Gilbert.

Surface, Fens, Soil, &c.—Huntingdonſhire, Leland ſays, "in old time, was much more woody than it is now, and the dere reſorted to the fennes; it is full long ſins it was deforeſtid." Camden corroborates this, and ſtates, "that the inhabitants ſay it was once covered with woods; and it appears to have been a foreſt, till Henry II., in the beginning of his reign, disforeſted the whole, as ſet forth by an old perambulation, except Waybridge, Sapple, and Herthei, which were the lord's woods and remain foreſt." Sir Robert Cotton ſays, "this country was not completely diſafforeſted till the time of Edward I., when that ſovereign, in his twenty-ninth year, confirmed the great charter granted by Henry III., and left no more foreſt than his own demeſne." This deſcription of foreſt land cannot be ſuppoſed to apply to the fens, of which there are 44,000 acres in this county, excluſive of about 5000 acres of what are called ſkirty lands. Theſe conſtitute nearly a ſeventh part of what is called the Great Bedford Level, but they belong to that diviſion called the Middle Level, and are principally found on the north and north-eaſtern parts of the county. About 8000 or 10,000 acres of the fen-lands are productive, yet the expence of keeping them from inundation amounts to almoſt one-third of the rents, through the imperfect ſtate of the drainage. "It may ſeem paradoxical," ſays Mr. Maxwell, "that the fens of Huntingdonſhire, whoſe ſurface is comparatively high, ſhould be worſe drained than thoſe that lie between them and the ſea, the ſurface of which laſt is conſiderably lower; the natural ſuppoſition being, that water will inevitably fall from the higher to the lower level. But this is the caſe with all the fens that are upon the ſkirts of the high land, and proves only, that the general drainage was executed upon principles fundamentally wrong. The fact is, that there was not a proper outfal to the ſea, at the time of the general undertaking to drain the fens, nearly a century and a half ago; and ingenious men employed themſelves not in obtaining an outfal, as they ought to have done, but in conſtructing large drains, and high banks, within the boundaries of the fens, expecting the water would force its own paſſage, in ſpite of every impediment; though the diſtance between the fens and the ſea was from ten to fifteen miles. This not proving to be the caſe, ingenuity was ſet to work, to invent engines for the purpoſe of throwing the water out of the lands into the internal rivers. Still it did not find its way to the ſea, but overtopped the banks, or broke them down with the weight of its preſſure; even to this moment, inſtead of reſorting to the outfal, the engines have been increaſed in ſize, and the banks raiſed ſtill higher, ſo that the water, which, if there had been an outfal, would have found its way to the ſea, and left to itſelf, would have reſted on the loweſt of the land, has been forced in a retrograde motion, over the ſurface of the higher lands; and hence the deplorable ſtate of the fens in Huntingdonſhire." The ſkirty lands are thoſe which border on the fens, and partake of the properties of moor, combined with whatever ſoil, whether clay, gravel, or loam, that may be prevalent in the adjacent uplands. Theſe lands, in general, afford luxuriant grazing. The meadow lands, which are the next in order on the ſcale of elevation, conſiſt of about twelve or fourteen hundred acres, bordering on the rivers Nene and Ouſe, but chiefly on the latter. Theſe are extremely productive, but the produce is frequently damaged by the floods, and the crops ſometimes totally carried away; this chiefly happens along the banks of the Ouſe from St. Neots to Erith; and the numerous water-mills which are placed upon this ſtream increaſe the riſk of damage. The ſoils in the upland parts of the county are various, but principally conſiſt of a ſtrong deep clay, more or leſs intermingled with loam, or of a deep gravelly ſoil, with loam. Of what are called the deep-ſtapled lands, great part is ſtill in an open field ſtate, where each particular occupier is neceſſarily obliged to purſue whatever courſe of tillage is practiſed by the pariſh at large. The woodlands are but of inconſiderable extent; and the country is thin of timber: this is attributed to the very great demand for it in the fens; and the underwood is ſold at a higher price by the pole, than in moſt other countries. The high roads are in general pretty good; the croſs roads are but indifferent; and in the winter ſeaſon many of them become impaſſable. No manufactures of note are carried on in this county, nor hardly any thing that bears reference to them, except wool-ſtapling and ſpinning yarn: the latter is the chief buſineſs of the women and children in the winter ſeaſon; in ſummer they ſeek a more profitable employ in the fields.

Rivers.—The principal rivers connected with Huntingdonſhire, are the Ouſe, and the Nene or Nen. The Ouſe enters the county from Bedfordſhire, and in its courſe towards Huntingdon is increaſed by a combination of ſmall ſtreams: having paſſed that town, it becomes the boundary between this county and Cambridgeſhire, till it enters the Great Level of Fens near Erith: this river is navigable along its whole line acroſs the county. The Nene riſes in Northamptonſhire, and flowing through a delightful vale, reaches Huntingdonſhire near Elton, where it becomes the boundary between both counties: afterwards winding to the eaſt, it purſues a devious courſe to Peterborough, below which it ſinks into the Fens, and paſſes onward to the ſea. Some ſmaller ſtreams water the north-eaſt ſide of this county, together with ſeveral large *meres*, or pools of water; namely, Whittleſea Mere, Ramſey Mere, Ugg Mere, &c.: of theſe, Whittleſea Mere is by far the largeſt, and covers an area of ſeveral miles in extent: it affords excellent ſailing and fiſhing, and is in the ſummer ſeaſon much frequented by parties of pleaſure. Moſt of the meres are viſited by abundance of wild-fowl. Maxwell's General View of the Agriculture of Huntingdonſhire. Beauties of England vol. vii.

HUNTINGTON, Robert, in *Biography*, an Engliſh divine, was born at Deerhurſt, in Glouceſterſhire, in 1636, and educated at Briſtol, from whence he was removed to Merton college, Oxford, of which he became fellow. In 1662-3, he was admitted to the degree of M. A.; after this he applied himſelf moſt diligently to the ſtudy of divinity and the Oriental languages. In 1670 he was appointed chaplain to the factory of Aleppo, where he improved himſelf in the Oriental languages, and collected many curious manuſcripts. Having carefully viſited almoſt the whole of Galilee and Samaria, and examined the opinions, cuſtoms, and religious books, he went to Jeruſalem, from thence he embarked for Cyprus, for the purpoſe of examining the library of Hilarion Cigala, the primate of the iſland, but on his arrival at Cyprus he found the prelate had been obliged to ſeek his ſafety from the Turks in flight. In the following year he undertook the difficult journey of 150 miles to view the ruins of Palmyra, which he was prevented from examining, and was himſelf in conſiderable danger of his life from two Arab chiefs, who had taken poſſeſſion of that diſtrict. He next went to Egypt, and continued during his whole reſidence in the Eaſt to improve himſelf, and benefit his country and the world, by reſcuing from oblivion curious copies of the Goſpels, and other books relating to polite literature. In the year 1682 he ſet out on his return home, and viſited in his journey Rome, Naples, and other moſt conſiderable places in Italy. From Italy he went to Paris, thence he arrived ſafe in England, and was, almoſt immediately after his return, raiſed to the degree of D. D., and at the ſame time appointed maſter of Trinity college, Dublin. This promotion he very much diſliked, regarding it as a kind of baniſhment: but he was perſuaded by his friends to undertake the duties attaching to the office, which he performed very much to the benefit of the inſtitution, and to the intereſts of literature in general. In 1691 he returned to England, reſigned his maſterſhip, and reſolved never more to quit his country. He made a preſent to the Bodleian library of many valuable MSS., the curators of which purchaſed his others, to the number of about 600, for the ſum of 700*l*. In the following year he was preſented to the rectory of Great Hallingbury, in Eſſex. About the ſame time he was offered the biſhopric of Kilmore and Ardagh, in Ireland, which he refuſed: but in 1701, notwithſtanding his former determinations, he accepted the biſhopric of Raphœ, in that kingdom. He ſurvived his conſecration but a few days, and died in the forty-ſixth year of his age. Some of his obſervations are in Ray's Collection of Voyages and Travels; and in the Philoſophical Tranſactions he gave an "Account of the Porphyry Pillars of Egypt." Biog. Brit.

Huntington, in *Geography*, a poſt-town in Chittenden county, Vermont, on the S. ſide of Onion river, 15 miles S. E. of Burlington, containing 405 inhabitants.

HUNTLY, is a conſiderable town and pariſh in Aberdeenſhire, Scotland, ſituated on the point of land formed by the confluence of the rivers Bogie and Deveron. The former conſiſts of two large ſtreets, which croſs each other at right angles, and form a ſpacious ſquare, in which the markets are held. The town has greatly increaſed in population and active trade within the laſt ſixty years: in the year 1792, here were fifty-two flax-dreſſers, whoſe manufactures, at an average, amounted to 16,224*l.* annually, and 209 weavers, whoſe labours produced yearly 73,150 yards of cloth. The return to parliament, in 1801, ſtated the number of houſes to be 498; of inhabitants 2863. Three fairs are held annually. Near the town, on the banks of the Deveron, is the elegant reſidence of the marquis of Huntly, eldeſt ſon of the duke of Gordon: and adjoining to Deveron bridge ſtand the ruins of Huntly caſtle, the magnificent manſion of that ancient family, built in 1602 by George, firſt marquis of Huntly. The pariſh of Huntly is about ſix miles in length and four in breadth; and was formed, in 1727, by uniting the two ancient pariſhes of Dumbenan and Kinore. Sinclair's Statiſtical Account of Scotland, vol. xi.

HUNTORP, a town of Germany, in the county of Oldenburg; 9 miles N. E. of Oldenburg.

HUNT's BAY, a bay on the S. coaſt of Jamaica. N. lat. 17° 52'. W. long. 79° 49'.

HUNT's *Town*, the ſeat of juſtice in Jefferſon county, Miſſiſippi territory, ſituated on an elevated plain, near the middle fork of Cole's creek, about 25 miles N. from the town of Natchez, about 10 miles from the confluence of Cole's creek with the Miſſiſippi river. This town is in the midſt of a healthy and fertile country, ſettled by induſtrious and wealthy inhabitants. An elegant court-houſe, gaol, ſeveral ſtore and dwelling houſes have been built in this place.

HUNTSBURG, a poſt-town of America, in Franklin county, Vermont, ſituated on the Canada line, and containing 280 inhabitants.

HUNTSMAN, a perſon whoſe buſineſs it is to ſuperintend every department of a hunting eſtabliſhment, as well as to conduct a pack of hounds with ſkill and ſucceſs in the field. According to the deſcription given of ſuch a perſon by Mr. Beckford, he ſhould be ſtrong, active, ſenſible, good-tempered, fond of the diverſion of hunting, and indefatigable in the purſuit of it. He ſhould alſo be ſober, exact, civil, and cleanly; he ſhould be a good groom, and an excellent horſeman; his voice ſhould be clear and ſtrong; and he ſhould have an eye ſo quick as to perceive which hound carries the ſcent, when all are running, and an ear ſo excellent, as always to diſtinguiſh the foremoſt hounds, when he does not ſee them; he ſhould be patient, quiet, and without conceit. Theſe excellencies, which conſtitute a good huntſman, he ſhould not be too fond of diſplaying, until occaſion calls them forth Hounds ſhould be let alone while they can hunt; and the huntſman ſhould diſplay his talents in aſſiſting them, when they cannot. Subordinate to the huntſman is the "Whipper-in," who ſhould poſſeſs nearly the ſame qualities with the huntſman, to whom he ſhould be attentive and obedient. His ſtation in the field is on the ſide of the cover oppoſite to the huntſman, whoſe halloo he ſhould be near enough to hear, and ready to obey. More foxes, it is ſaid, will be killed with an excellent whipper-in and a moderate huntſman, than with the beſt of huntſmen without ſuch an aſſiſtant, becauſe hounds oftener need the one than the other.

HUNTSVILLE, in *Geography*, a poſt-town of America, in North Carolina; 16 miles from Rockford.

HUNYAD, a town of Tranſylvania, on a ſmall river, which runs into the Maros; 54 miles E. N. E. of Temeſvar. N. lat. 45° 51'. E. long. 22° 44'.

HUPPOOAH, a town of Bengal; 47 miles N. W. of Ramgur.

HURA, in *Botany*, a name of barbarous origin, but, contrary to his uſual practice, adopted by Linnæus. It appears to be the name of the tree in queſtion among the inhabitants of Guiana, not, as profeſſor Martyn reports, of Mexico, where it is ſaid, in Hernandez, to be diſtinguiſhed by the ſeſquipedalian appellation of *Quauhtlatlatzin*, which, it ſeems, means a *cracking tree*. Linn. Gen. 504. Schreb. 660. Willd. Sp. Pl. v. 4. 592. Mart. Mill. Dict. v. 2. Juſſ. 391. Lamarck. Illuſtr. t. 793. Claſs and order, *Monœcia Monadelphia*. Nat. Ord. *Euphorbiæ*, Juſſ.

Gen. Ch. Male, *Cal.* Catkin oblong, drooping, obtuſe, covered with ſeſſile florets; ſcales oblong, with a pair of very ſhort internal abrupt ones beſides. *Cor.* none. *Stam.* Filament cylindrical, rather longer than the ſcales, rigid, peltate, with two or three whorls of tubercles near the top; anthers two ſunk in each tubercle, oval, cloven.

Female, *Cal.* Perianth of one leaf, inferior, cylindrical, furrowed, abrupt, entire, cloſely enfolding the germen. *Cor.* none. *Piſt.* Germen roundiſh, within the calyx; ſtyle long, cylindrical; ſtigma large, peltate, convex, coloured, in twelve equal reflexed lobes. *Peric.* Capſule woody, orbicular, depreſſed with twelve furrows and twelve cells, each with two elaſtic, ſemi-lunar, pointed valves. *Seeds* ſolitary, orbicular, compreſſed, large.

Eſſ. Ch. Male, Catkin imbricated, with three ſcales to each floret. Corolla none. Stamen peltate at the top.

Female, Calyx cylindrical, entire. Corolla none. Stigma peltate, in twelve ſegments. Capſule of twelve cells, with two elaſtic valves to each. Seeds ſolitary.

1. H. *crepitans*. Sand-box tree. Linn. Sp. Pl. 1431. Hort. Cliff. 486. t. 34. Trew. Ehret. t. 34, 35. f. 1.—Native of South America.—A *tree* of conſiderable height. The *leaves* are large, alternate, ſtalked, heart-ſhaped, ſerrated, rugged, rough. *Flowers* ſmall and inconſpicuous, except for their purple ſtigma, from the forks of the branches. *Fruit* large, often brought to Europe, and uſed as a ſand-box, but if ſuffered to hang too long before gathering, it will, in a dry warm room, explode with great violence and noiſe, like the ſound of a piſtol. The *ſeeds* are emetic and purgative.

HURCHUNCHUCK, in *Geography*, a town of Bengal; 25 miles E. S. E. of Boglipour.

HURCHUNDY, a town of Bengal; 10 miles S. of Chinary.

HURCHURNPOUR, a town of Bengal; 17 miles N. of Rajemal.

HURCOS, or URCOS, a town of Peru, in the dioceſe of Cuſco; 21 miles S. of Cuſco.

HURDAH, a town of Hindooſtan, in the Candeiſh country, on the S. of the Nerbuddah river; 22 miles S.S.E. of Hindia. N. lat. 22° 23'. E. long. 77° 19' 45".

HURDES, or HARDS, *of flax* or *hemp*, the coarſer parts, ſeparated in the dreſſings from the tear or fine ſtuff. See HEMP and FLAX.

HURDLE is the name of the ſledge uſed to draw traitors to the place of execution.

HURDLE, in *Agriculture*, the name of a light wooden frame, formed of ſmall bars, or otherwiſe, ſomewhat in appearance ſimilar to the low common field gate. It is principally employed for the purpoſe of conſtituting a ſort of moveable fence for incloſing and confining ſheep, and other kinds of live ſtock, during the time they are conſuming ſome ſort of rich green, or other luxuriant food. The uſual materials for the forming of hurdles are thoſe of ſome ſort of light ſplit wood, or hazel rods of rather young growth. In the former caſe they are commonly put together by means of framing or nailing, and in the latter by wattling the rods in between a ſort of ſmall ſtakes. Hence they are often denominated *framed* or *wattled* hurdles by way of diſtinction.

Beſides the above uſes, hurdles are neceſſary in folding ſheep on arable lands, and alſo in feeding off turnips, either by them or neat cattle, on the land, in order to keep them upon a certain ſpace of ground, and thus afford them a limited portion of food at a time, by which a conſiderable ſaving is effected in its being eaten up more cleanly and with leſs waſte, than would be the caſe if they ranged over the whole. And on the tillage lands the ſheep, by being ſo cloſely confined, contribute in a very high degree to its fertility and improvement.

It has been lately obſerved, that "in the grazing of a large field, for inſtance, when the ſheep or cattle are turned upon it early in the ſpring, they tread down and deſtroy a great deal of the graſs; and by dropping their dung and urine upon the remainder, injure it ſo much as to render it unpalatable to the ſtock. In this way a great proportion of the graſs is loſt in every field of conſiderable extent: whereas when the ſtock is firſt put upon the field, if hurdles or flakes were run acroſs a ſmall part of it, as is the caſe with turnips, and the grazing ſtock kept there till they had eaten the herbage clean up, they would then, from neceſſity, eat a great deal that is entirely loſt, when they are permitted to range over the whole field. In this way conſiderably more ſtock might be fed upon a given ſpace, than is done at preſent. It is to be obſerved, however, that the firſt ſpace divided off by the flakes ſhould be next the water, eſpecially if the field is grazed by black cattle or horſes, and that progreſſively, as the ſtock is removed from the watering place, a lane ſhould be left, by which the cattle may travel to the pond. It is alſo to be noticed, that after the firſt ſpace allowed to the grazing ſtock is eaten clean up, and as ſoon as they are ſhifted to a new place, a courſe of flakes ſhould be placed behind them, to prevent them from going backward upon the paſture that has been already eaten bare. By this management the whole of the herbage, upon every ſpace allotted to the ſtock, will not only be completely eaten up, but, by dividing or fencing off that part which has been eaten, the plants are allowed to recover; and, long before the whole field is gone over, the ſpace firſt eaten will be in a ſituation to receive the ſtock a ſecond time. By this method the dung and urine of the ſtock, inſtead of rendering the herbage nauſeous and unpalatable, and thereby preventing them from eating it, will, by its fertiliſing powers, aſſiſt its growth, and render it ſooner fit for being eaten a ſecond time, and by that means afford three or four crops in the ſpace of a year inſtead of one. Experience has ſufficiently evinced the great profit and advantage that attend the practice of teddering cattle or horſes upon good paſture, or of feeding them in the houſe with cut graſs. The benefit in both theſe caſes ariſes from the whole of the herbage being completely eaten up, without any part of it being loſt. The ſame benefit, but with infinitely leſs trouble, may be reaped from *hurdling* or *flaking* graſs fields: every poſſible advantage will be made of them in this way; and in very many inſtances it will happen, that before a half or two-thirds of the field are gone over by flaking, the part firſt eaten will be in a ſituation again to receive the ſtock. By that means a part of the field may be ſaved for hay; or, if the views of the occupier be of another kind, the number of the grazing ſtock may be increaſed in a proper degree."

The writer is "aware, however, that it may, and no doubt will be argued by many, that this management will be attended with much trouble and expence; and after all, that the profit reſulting therefrom will be but ſmall, and ſcarcely prove equivalent to the trouble and extra expence. From the acknowledged value of hurdling, however, in the conſumption of turnips, cabbages, &c., and the great profit which ariſes from giving the ſtock only a certain quantity of food at once, and withholding any more from them till that is eaten up, ſome idea may be formed of the vaſt advantage that would attend the flaking of a graſs-ſtock in different caſes. He by no means, however, wiſhes theſe obſervations to be underſtood as applying to graſs paſtures of every deſcription; quite the contrary, as there are many ſituations where the expence and trouble of flaking would prove more than an equivalent for any advantage that could be reaped from the practice. But upon all rich paſtures, the benefit ariſing from the practice of flaking will be found very conſiderable, and a ſingle experiment will be ſufficient to convince the moſt incredulous."

It is obvious that in parks, pleaſure-grounds, and other ornamented places, the eating of the graſs may be the moſt conveniently and economically accompliſhed by means of hurdles, as, in this way, the danger of injuring the trees and ſhrubs is moſt effectually prevented; and from the hurdles being capable of a ready removal, any portion can at pleaſure be eaten down in the moſt deſirable manner.

In regard to the expence of hurdles, thoſe of the framed kind are uſually from about 12*s.* to 18*s.* or 20*s.* the dozen, according to the manner of making them, and the nature of the wood employed. The wattled ſort are commonly much cheaper, being ſeldom higher than from 10*s.* to 12*s.* the dozen. A repreſentation of a framed hurdle is given in the plates on fences. See FENCE.

It is found from actual trials, that a dozen and a half are ſufficient for folding thirty ſheep; and that about twelve dozen will anſwer the purpoſe for one thouſand in moſt caſes.

HURDLE, *lamb*, the title of another ſort of hurdle, conſtructed for the purpoſe of protecting and preſerving lambs ſoon after they have been dropped, and while they continue in a weakly ſtate. It is ſuggeſted in the ſurvey of Lincolnſhire, that "vigilance in the lambing ſeaſon prevents much of the danger in bad weather, but that in addition," a proviſion againſt the loſs of lambs in the ditches of the breeding paſtures, has there been made at a ſmall expence, by means of lamb-hurdles.

Theſe are conſtructed of two thin rails, with heads at the ends and proper braces; the ſpace between the rails being cloſed in by having tarpauling nailed ſecurely to each of the rails, &c. But it is hinted, that "as the tarpauling would require many nails, and as canvas is a dear article," the ſpace may perhaps "be better filled, by a ſlit deal held in its place by having braces on both ſides, one of which might be moveable, and fix with nuts on the rivets, by which means the board might be put in only occaſionally when wanted." This deſcription of hurdle is repreſented in the plates on fences. See FENCE.

It is further noticed, that this hurdle, "when the lower rail touches the ground, is a perfect defence againſt the wind, and of a ſufficient height to prevent the lambs driving before a ſtorm into the ditches; ſo that it anſwers two good purpoſes." And that, "at other ſeaſons alſo, theſe hurdles may come into uſe for guarding the brows of banks againſt ſheep.

Hurdles, in *Fortification*, twigs of willows or oſiers, interwoven cloſe together, in the form of a long ſquare, five or ſix feet long, and three or three and a half broad, ſuſtained by ſtrong ſtakes, and uſually laden with earth. Hurdles, called alſo *clayes*, ſerve to render batteries firm, to conſolidate the paſſage over muddy ditches, and cover traverſes and lodgments, for the defence of the workmen againſt the artificial fires or ſtones that may be caſt upon them.

HURDLING, a term ſignifying the art or practice of dividing land by the uſe of hurdles, in the view of improving the grounds or conſuming the food with greater economy and advantage, by the confining of different ſorts of live ſtock, within certain limits. It is a highly beneficial method of management in a great number of inſtances. See Folding *of Sheep*, and Hurdle.

HURDS, in *Rural Economy*, a name given to the coarſer parts of flax and hemp, which in the dreſſing of them are ſeparated from thoſe of the fine ſtuff of either of ſuch matters.

HURDWAR, in *Geography*, a town of Hindooſtan, in the northern part of the country of Delhi, on the Himmaleh, near the W. coaſt of the Ganges, where it enters the plains of Hindooſtan, on the borders of Thibet; 86 miles N. of Delhi. N. lat. 29° 55′. E. long. 78° 23′. See Ganges.

HURDY-GURDY. See Monochord.

HURE, Charles, in *Biography*, an eminent French divine, was ſon of a labourer at Champigny-ſur-Yone, where he was born in the year 1639. As he ſhewed a ſtrong inclination for learning, his father cauſed him to have a good education, and obtained for him aſſiſtance from the archbiſhop of Sens, who gave him an exhibition in the college des Graſſins at Paris, where he diſtinguiſhed himſelf greatly among his contemporaries. Having completed his academical ſtudies he was admitted into holy orders, and appointed one of the preachers of his college. He was afterwards made profeſſor of the belles lettres; and at length became principal of the college of Boncourt, where he died in 1717, in the ſeventy-eighth year of his age. His principal works are, "A Dictionary of the Bible," in two volumes folio. "A Tranſlation of the New Teſtament into the French Language with Notes," and "A Sacred Grammar," intended to illuſtrate the New Teſtament. He was a man of great ſimplicity of manners, who united to much candour, ardent piety and a ſolid judgment. Moreri.

HUREEPOUR, in *Geography*, a town of Hindooſtan, in Lahore; 95 miles E.N.E. of Lahore. N. lat. 32° 5′. E. long. 75° 42′.

HURENHUTTERS, in *Eccleſiaſtical Hiſtory*. See Herrnhuters.

HURFWA, in *Geography*, a town of Sweden, in the province of Skone; 10 miles N.E. of Lund.

HURIEL, a town of France, in the department of the Allier, and chief place of a canton, in the diſtrict of Montluçon; ſix miles N.W. of it. The place contains 1628, and the canton 10,178 inhabitants, on a territory of 400 kiliometres, in 16 communes.

HURKUTTA, a town of Bengal; 40 miles S.S.E. of Curruckdeah.

HURLE Bone, in a horſe, is a bone near the middle of the buttock; very apt to go out of its ſockets with a ſlip or ſtrain.

HURLERS, a number of large ſtones, ſet in a kind of ſquare figure near St. Clare, in Cornwall, ſo called from an odd opinion held by the common people, that they are ſo many men petrified, or changed into ſtones, for profaning the ſabbath-day by hurling the ball, an exerciſe for which the people of that county have been always famous.

The hurlers are oblong, rude, and unhewed. Many authors ſuppoſe them to have been trophies erected in memory of ſome battle; others take them for boundaries to diſtinguiſh lands. Laſtly, others, with more probability, hold them to have been ſepulchral monuments.

HURLEY, in *Geography*, a townſhip of America; in Ulſter county, New York; containing 1159 inhabitants.

HURLOCK, in *Mining*, ſignifies the harder beds of chalk in the lower parts of the ſeries N. of Dunſtable, which is principally uſed for burning lime, for mortar-making in that diſtrict, for the uſe of lime in agriculture is there almoſt unknown. The hurlock is without layers of flints, and contains very minute grains of ſilex diſtributed through its maſs; ſome large cornu ammonias and others of an oval figure, according to Mr. Parkinſon, and other ſhells are found in it; the lower beds are moſtly ſiliceous, and they terminate below in the Totternhoe freeſtone, of which Woburn abbey, the Swan Inn at Bedford, and many other good houſes are built; this, at the foot of the North Downs, near Ryegate, Godſtone, &c. is a fire-ſtone; at the foot of the South Downs in a ſimilar ſituation it has not been diſcovered, becauſe not ſought after, we believe.

HURLY-BURLY, in *Vulgar Language*, denotes confuſion, or tumult, and is ſaid to owe its origin to two neighbouring families, Hurleigh and Burleigh, which filled their part of the kingdom with conteſt and violence. Johnſon.

HURON, in *Geography*, one of the five principal lakes of North America; lying between 43° 30′, and 47° 30′ N. lat. and between 80° 45′, and 84° 45′ W. long., and reckoned upwards of 1000 miles in circumference. The fiſh of this lake are ſimilar to thoſe of lake Superior, with which it communicates by the ſtraits of St. Mary, about 40 miles in length, and in ſome places only one or two miles in breadth, with a rapid towards the N.E. extremity, which may however be deſcended by canoes, and the proſpects are here delightful. Another ſhort ſtrait leads into the lake called Michigan, and it communicates with lake Erie on the S. It is of a triangular ſhape; and on the S.W. part is Saguinum or Sagana bay, 80 miles long and about 18 or 20 broad. The other moſt remarkable bay is Thunder bay. On the banks of the lake are found great quantities of ſand cherries. The land on the weſtern ſhore is much inferior in quality to that on lake Erie. It is mixed with ſand and ſmall ſtones, and is covered chiefly with pines, birch, and ſome oaks; but at a little diſtance from the lake the ſoil is very luxuriant. Some few years ago, a part of the Indian nations, called Chepaways and Ottaways, who inhabited round Sanguinum bay, and on the banks of the lake, could furniſh 200 warriors; and thoſe of the latter nation, who lived on the E. ſide of lake Michigan, 21 miles from Michilimackkinack, could furniſh 200 warriors. Thoſe who lived on the E. ſide were called Hurons.—Alſo, a ſmall river of the north-weſt territory, which, after a courſe of 38 miles, falls into lake St. Clair from the N.W.—Alſo, another ſmall river in the ſame territory, which runs north-eaſtward into lake Erie; 40 miles weſtward of Cayahoga, and 15 S.E. of the mouth of Sanduſky lake.

HUROUNG, a town of Bengal; 35 miles S.S.E. of Iſlamabad.

HURPEYA, a town of Hindooſtan, in Moultan; ſix miles N.W. of Shawanaz.

HURPLE, in *Rural Economy*, a term applied in many places to cattle, when they ſet up their backs in the cold ſevere winter ſeaſon.

HURPOIS, in *Geography*, a ſmall iſland on the E. ſide of the gulf of Bothnia. N. lat. 63° 18′. E. long. 21° 34′.

HURRAI, a town of Hindooſtan, in Oude, on the left bank of the Ganges; 12 miles S. of Corah.

HURRERS, in our *Old Writers*. The cappers and hat-makers of London, formerly one company of the haberdaſhers, were called by this name.

HURRIAPOUR, in *Geography*, a town of Hindooſtan, in Bahar; 13 miles N. of Durbungah.

HURRICANE, a very violent wind, ſuch as to blow down trees, unroof houſes, and produce other deſtructive effects. Though hurricanes are obſerved occaſionally in moſt parts of the earth, it is in the torrid zone, and particularly in the Weſt Indies, where their devaſtations are more peculiarly obſerved. In Long's hiſtory of Jamaica, we find a chronological table of the moſt remarkable hurricanes which took place in the Weſt Indian iſlands for more than a century. The times and places are as follow:

	Hurricanes.	
	1670	at Barbadoes,
	1674	Do.
	1675	Do.
	1691	Antigua,
	1700	Barbadoes,
	1702	Do.
	1707	Caribbee iſlands in general,
	1712	Jamaica,
	1720	at Barbadoes,
	1722	Jamaica,
	1733	Caribbees in general,
	1744	Jamaica,
	1764	Martinico, Carthagena, and particularly at ſome of the Caribbee iſlands,
	1772	Moſt of the Caribbee iſlands,
To which may be added	1780	October 3d, Jamaica.

The one that happened Aug. 31, 1722, was very terrible and deſtructive, it extended 700 leagues or upwards.

Few people of ſcientific obſervation have had opportunities of marking the phenomena which attend theſe Weſt Indian hurricanes. A writer, giving an *Account of the European Settlements in America*, obſerves, "It is in the rainy ſeaſon, principally in the month of Auguſt, more rarely in July and September, that they are aſſaulted by hurricanes, the moſt terrible calamity to which they are ſubject from the climate. This deſtroys at one ſtroke the labour of many years, and fruſtrates the moſt exalted hopes of the planter, and often juſt at the moment when he thinks himſelf out of the reach of fortune. It is a ſudden and violent ſtorm of wind, rain, thunder, and lightning, attended with a furious ſwelling of the ſea, and ſometimes with an earthquake; in ſhort, with every circumſtance which the elements can aſſemble that is terrible and deſtructive. Firſt they ſee as a prelude to the enſuing havock, whole fields of ſugar-canes whirled into the air, and ſcattered over the face of the country. The ſtrongeſt trees of the foreſt are torn up by the roots and driven about like ſtubble. Their wind-mills are ſwept away in a moment. Their works, their fixtures, the ponderous copper-boilers and ſtills of ſeveral hundred weight, are wrenched from the ground and battered to pieces. Their houſes are no protection, the roofs are torn off at one blaſt, whilſt the rain, which in an hour riſes five feet, ruſhes in upon them with an irreſiſtible violence. There are ſigns which the Indians of theſe iſlands taught our planters, by which they can prognoſticate the approach of a hurricane. It comes on either in the quarters or at the full or change of the moon. If it will come on at the full moon, you being at the change, obſerve theſe ſigns. That day you will ſee the ſky very turbulent. You will obſerve the ſun more red than at other times. You will perceive a dead calm, and the hills clear of all thoſe clouds and miſts which uſually hover about them. In the clefts of the earth, and in the wells, you will hear a hollow rumbling ſound like the ruſhing of a great wind. At night the ſtars ſeem much larger than uſual, and ſurrounded with a ſort of burs. The north-weſt ſky has a black and menacing look, and the ſea emits a ſtrong ſmell and riſes into vaſt waves, often without any wind. The wind itſelf now forſakes its uſual ſteady eaſterly ſtream, and ſhifts about to the weſt, from whence it ſometimes blows with intermiſſions violently and irregularly for about two hours at a time. You have the ſame ſigns at the full of the moon. The moon itſelf is ſurrounded with a great bur, and ſometimes the ſun has the ſame appearance." Another author, Captain Langford, (ſee Philoſ. Tranſ. abridged, vol. ii. p. 105.) makes the following obſervations amongſt others: "It is to be obſerved, that all hurricanes begin from the N. to the weſtward, and on thoſe points that the eaſterly wind doth moſt violently blow, doth the hurricane blow moſt fiercely againſt it; for from the N.N.E. to the E S.E. the eaſterly wind bloweth freſheſt, ſo doth the W.N.W. to the S.S.W. in the hurricane blow moſt violent, and when it comes back to the S E. which is the common courſe of the trade-wind, then it ceaſeth of its violence and ſo breaks up.

Though hurricanes may be deemed extraordinary events, and therefore may be aſcribed to the operations of extraordinary cauſes, it is more probable that they ariſe principally from the ordinary cauſes of wind, which are the unequal temperature of the earth's ſurface in the different parallels of latitude, or rather of the incumbent atmoſphere, and the diurnal rotation of the earth; to which may be occaſionally added the precipitation of uncommon quantities of rain, accompanied with thunder and lightning. See WIND.

It has been the cuſtom of late times to aſſign electricity as the cauſe of every inexplicable phenomenon in meteorology. Not only hurricanes but winds in general have been referred to electricity as their cauſe; but it will be time enough to introduce this cauſe when the common principles of the mechanical philoſophy have been fairly applied and found inadequate to the explication.

Swiſſerland is ſubject to very violent hurricanes, which do great miſchief, and that in a very ſingular manner. Thunder and lightning are frequent with them in winter as well as in ſummer; and the more violent ſtorms of theſe are ſometimes attended with whirlwinds and hurricanes, which will raiſe the waters of ſome lakes in form of a thick pillar up to the clouds, and carrying on before the wind this vaſt body of water, will ſometimes fall on other places on dry land, and drown the houſes and gardens where it chances to fall.

HURRIERS, in *Mining*, are thoſe perſons employed in a coal-pit, who hurry or drag the corves of coals from the banks where they are dug to the bottom of the winding ſhaft to be drawn up.

HURRIES, in *Engineery*, is ſometimes applied, at Newcaſtle and other places, to the ſtrong ſtages of wood erected by the ſides of the navigable rivers and harbours, on to which the rail-ways are conducted from the coal-pits; by which means the load is at once emptied, by help of a ſpout, from the rail-way waggons into the holds of the ſhips. See STAITH.

HURRY, in *Agriculture*, a term often applied in the ſouth-weſtern and other diſtricts of the kingdom, to a ſmall load of corn or hay.

HURRYAL, in *Geography*, a town of Bengal; 20 miles S.E. of Nattore. N. lat. 24° 18′. E. long. 89° 28′.

HURRYPOUR, a town of Hindooſtan, in Sanore; 17 miles S. of Ranny Bednore.

HURSALOO, a town of Hindooſtan, in the circar of Nagore; 12 miles W. of Catchwana.

HURST, or Hyrst, in our *Old Writers*, denotes a wood or grove of trees. Hence ſuch places as have this word for part of their names, have been ſituated near a wood. In Kent, Suſſex, and Hampſhire, there are many ſuch, becauſe formerly the great wood called Anderſwald extended itſelf through theſe counties.

HURTER, in *Artillery*, a flatted iron fixed againſt the body of an axle-tree, with ſtraps to take off the friction of the naves of wheels againſt the body.

Hurters, in *Fortification*, denote pieces of timber about ſix inches ſquare, placed at the lower end of the plat-form, next to the parapet, to prevent the wheels of the gun-carriages from damaging the parapet.

HURTS, in *Heraldry*, by ſome wrote *Heurts*, and by others *Huerts*, are azure or blue rundles.

The Engliſh heralds diſtinguiſh between the colours of rundles, and give them different names agreeable thereto: thoſe of other nations content themſelves to call thoſe *torteaux d'azure;* and in other caſes only add the reſpective colour to the term *torteaux*.

But theſe being blue, ſome will have them to ſignify bruiſes or contuſions in the fleſh, which often turn to that colour: others ſuppoſe them whortle berries.

HUS, or Hussu, in *Geography*, a town of European Turkey, in the province of Moldavia, the ſee of a Greek biſhop, ſituated on the Pruth; 70 miles S.W. of Bender. N. lat. 46° 35′. E. long. 28° 34′.

HUSACKER, one of the ſmall Shetland iſlands between Mainland and Yell. N. lat. 60° 48′. W. long. 1° 35′.

HUSBAND, Maritus, a man joined or contracted with a woman in marriage. See Coverture and Marriage. See alſo Divorce, Dower, Feme-*Covert*, &c.

Husband *Land*, a term uſed in Scotland for a portion of land containing ſix acres (= 7.624464 Engliſh ſtatute acres) of ſock and ſcythe land; that is, of land that may be tilled with a plough, and mown with a ſcythe.

HUSBANDMAN, in *Agriculture*, the common name of the labourer or perſon who is engaged in the tillage and cultivation of the ſoil. It has been, in general, too much the practice to deſpiſe and depreſs the habits and talents of this moſt valuable claſs of ſociety; as by ſuch means the neceſſary ardour and ſpirit of exertion are much abated, and the improvement of huſbandry greatly retarded.

The ingenious author of the "Wealth of Nations" has drawn the following curious and intereſting compariſon between this ſort of labourer, and the artizan or mechanic. He ſays, that "not only the art of the farmer, the general direction of the operations of huſbandry, but many inferior branches of labour require much more ſkill and experience than the greater part of mechanic trades. The man who works upon braſs and iron works with inſtruments, and upon materials of which the temper is always the ſame, or very nearly the ſame: but the man who ploughs the ground with a team of horſes or oxen, works with inſtruments of which the health, ſtrength, and temper are very different upon different occaſions. The conditions of the materials which he works upon, too, are as variable as that of the inſtruments he works with, and both require to be managed with great judgment and diſcretion. The common ploughman, though generally regarded as the pattern of ſtupidity and ignorance, is ſeldom defective in his judgment and diſcretion: he is leſs accuſtomed, indeed, to ſocial intercourſe than the mechanic who lives in town. His voice and language are more uncouth and more difficult to be underſtood by thoſe who are not uſed to them. His underſtanding, however, being accuſtomed to conſider a greater variety of objects, is generally much ſuperior to that of the other, whoſe whole attention, from morning to night, is commonly occupied in performing one or two ſimple operations. How much the lower ranks of people in the country are really ſuperior to thoſe of the town is well known by every man, whom either buſineſs or curioſity have led to converſe much with both. In China and Hindooſtan, accordingly, both the rank and the wages of country labourers are ſaid to be ſuperior to thoſe of the greater part of artificers and manufacturers. They would probably be ſo every where, if corporation laws and the corporation ſpirit did not prevent it."

There can be no doubt of the vaſt utility and national advantage of promoting the ſpirit, and encouraging the exertions of the labourers in agriculture; as, however high the benefits of commerce may be eſtimated, it is only the raiſing of the neceſſary food for the ſupport of the population of a nation within itſelf, that can render it truly great, happy, and independent.

HUSBANDRY, a general name applied to the art, buſineſs, or employment of the farmer, or of thoſe engaged in the tillage and cultivation of the ſoil. There are various deſcriptions of huſbandry depending on the particular views of the cultivator, and the methods of management which are adopted.

Hence, in regard to tillage or arable lands, theſe are the *broad-caſt* and *drill-huſbandry*, and it is often further divided by the way of diſtinction into what are termed the *old* and *new* huſbandry; the former of which is ſuppoſed to be that which has been had recourſe to from the moſt early periods; and the latter that which has been ſaid to have been introduced and inculcated by the intelligent Mr. Tull and his followers. This laſt is likewiſe occaſionally diſtinguiſhed by the title of the *horſe-hoeing* huſbandry. But though this huſbandry be generally denominated *new* in this country, there is reaſon to believe that it is not ſo modern as has been commonly ſuppoſed, as it has been aſcertained that in many of the eaſtern nations, where very few, if any, changes in their agricultural practices have occurred for many ages, it is for moſt ſorts of crops the moſt uſual mode. See Husbandry, *Drill*.

It may be further noticed here, that the broad-caſt huſbandry is that kind of arable management in which the ſeed is thrown and diſperſed over the ground by a ſort of caſt of the hand, without much regard being paid to the regularity of the crop, or the means of its after-culture. Beſides, it was ſuppoſed by ſome farmers, that in this mode much leſs preparation of the land was neceſſary, but the contrary has been fully proved by later and more extenſive experience.

And the drill-huſbandry is that in which the grain or other kinds of crops are ſown, ſet, or put into the ſoil, in rows, drills, or trenches, at different diſtances, by tools and machines contrived for the purpoſe, in order to be cultivated afterwards with implements particularly ſuited to them. In this way the ſeed is put into the ſoil with much more regularity and exactneſs, both in reſpect to evenneſs and depth, as well as the after-culture performed with much greater correctneſs and attention by the uſe of proper hoes and horſe labour.

In caſes where neither of theſe modes is exactly followed, but there is a kind of mixture of them both ; or where two ſorts of crops of different deſcriptions are cultivated together, in alternate rows, there is what has been frequently denominated *half-huſbandry* : and where the ground is cultivated alternately in tillage and graſs, there is that ſort which is uſually called *convertible* huſbandry by modern farmers.

There are alſo particular methods of cultivation adopted on extenſive tracts of ground in the ſtate of commonage, which afford what is frequently denominated *common-field* huſbandry.

With reſpect to lands in the ſtate of graſs, there are likewiſe *dairy*, *grazing*, and *graſs* huſbandry, according as the grounds are appropriated to the keeping of cows for milk, butter, or cheeſe, the feeding or fattening of different ſorts of live-ſtock, and the making of graſs into hay to be uſed as fodder.

The culture of particular ſorts of crops alſo gives riſe to different terms of this nature ; hence there is *turnip*, *cabbage*, *carrot*, and *potatoe* huſbandry, &c.

In theſe different points of view, huſbandry, of courſe, compriſes the whole of the numerous operations, proceſſes, and modes of management which are neceſſary in the extenſive buſineſs of cultivation, either in regard to tillage or graſs, or the breeding, rearing, and keeping all ſorts of live ſtock of the domeſtic kinds.

It is ſufficiently evident, that very great improvements have been accompliſhed in the various branches of huſbandry within theſe few late years by the introduction of more correct and better modes of cropping and managing lands, as well as by the gradual influence and adoption of better and more ſuitable tools and machines for executing the buſineſs of the farmer.

A late writer has laid down the following comparative eſtimates of the difference in the advantage between an acre of land cultivated under the old plan of fallowing once in every three years, or two crops and a fallow; which is ſuppoſed not to *run* out or exhauſt the ground ; and that of the more modern ſyſtem of alternating green, or ſmothering crops, with thoſe of the grain kind.

Old Syſtem of Huſbandry.

	£.	s.	d.
1ſt Year, Fallow.			
Four ploughings and harrowings, at 6*s*. each	1	4	0
Twelve loads of manure, at 8*s*. per load	4	16	0
2d Year, Barley.			
Ploughing, harrowing, and ſowing	0	6	6
Weeding the crop	0	0	6
3d Year, Beans.			
Ploughing, harrowing, and ſowing	0	6	6
Weeding	0	0	6
4th Year, Fallow.			
Ploughing three times, and harrowing, 6*s*. each time	0	18	0
5th Year, Wheat.			
Ploughing and ſowing	0	6	0
Weeding	0	0	6
Carry over	7	18	6
6th Year, Oats.			
Brought over	7	18	6
Ploughing and ſowing	0	6	6
Weeding	0	0	6
	8	5	6

New Syſtem of Huſbandry.

	£.	s.	d.
1ſt Year, Turnips.			
Ploughing an inch and a half deep	0	4	0
Harrowing, raking, rolling, &c.	0	3	6
Ploughing twice, harrowing, raking, &c.	0	13	0
Leading off refuſe	0	1	0
Seed and ſowing	0	1	6
Making of drills	0	2	6
Three times ploughing the turnips, and hoeing	0	8	6
Six loads of manure, at 8*s*. per load	2	8	0
2d Year, Barley.			
Ploughing and ſowing, harrowing, &c.	0	6	6
Weeding	0	0	3
3d Year, Beans or Peas.			
Two ploughings, harrowings, raking, &c.	0	13	0
Drill-making	0	2	6
Four loads of manure, at 8*s*. per load	1	12	0
Three times plouging, to mould the peas and deſtroy the weeds	0	4	9
Leading off refuſe	0	1	0
4th Year, Wheat.			
Scarifying	0	2	6
Ploughing, ſowing, &c.	0	6	0
Weeding	0	0	3
5th Year, Clover.			
6th Year, Wheat.			
Ploughing and ſowing	0	6	6
Weeding	0	0	3
	7	17	6
Balance in favour of the new ſyſtem	0	8	0
	8	5	6

Hence it would appear that the expences of the new method of huſbandry are not only leſs by eight ſhillings the acre than thoſe of the old the firſt ſix years, but will ſomewhat decreaſe in the next ſix, except in manure, which will be more, as in the new mode the reſervoir and five crops of ſtraw will, it is ſuppoſed, produce nearly double the quantity. Beſides, in the firſt way, the manure is all raiſed from the produce of the land it is laid on : but to make the twelve loads, the old farmer robs the meadow, or any piece of freſh land he is permitted to plough up. This is ſuppoſed the principal cauſe why ſo many tenants are reſtricted from ploughing old ſwards, as they do not return the manure to its proper ſituation, or lay it on in ſuch a manner as is proper.

In all theſe eſtimates it is ſuppoſed that every acre of ſtraw, where the crop is a good one, is capable of affording two loads of manure; conſequently, by the old plan, even admitting the crop to be good, which is often not the caſe, there would be only eight loads of manure raiſed in ſix years; but, by the new, 10 loads, even without the aſſiſtance of the reſervoir; and in the following ſix years, where the new ſyſtem is purſued, 14 loads may be expected. In theſe ſtatements the manure is charged as an expence, which is not right, where it is not purchaſed but raiſed on the ground.

If theſe calculations can be depended upon, there can be no doubt of the great ſuperiority of the green-crop practice over that of the fallow method.

Other ſtatements, by the ſame writer, on the differences of theſe different ſyſtems of management, on farms of different kinds, render the matter ſtill more obvious.

I. *Tillage Farm-extent* 139 *Acres.—It is ſituated in a northern county, that of York.*

Old Method of Huſbandry.

Dr. to Expences.

	£.	s.	d.
Twenty-three acres of wheat, ploughing, ſowing, &c. at 7*s* per acre	8	1	0
Seed, 23 loads, at 18*s*. per load	20	14	0
Reaping, leading, &c. at 10*s*. per acre	11	10	0
Threſhing, dreſſing, 161 loads at 1*s*. per load	8	1	0
Mowing ſtubble, 3*s*. per acre	3	9	0
Nine acres of barley, ploughing, &c. at 7*s*. per acre	3	3	0
Seed, four quarters four buſhels, at 25*s*. per quarter	5	12	6
Reaping, leading, &c. at 8*s*. per acre	3	12	0
Threſhing, &c. 36 quarters, at 1*s*. 6*d*. per quarter	2	14	0
Twenty-three acres oats, ploughing, &c. at 7*s*. per acre	8	1	0
Seed, 14 quarters three buſhels, at 12*s*. per quarter	8	12	6
Reaping, leading, &c. at 6*s*. per acre	6	18	0
Threſhing, &c. 92 quarters at 1*s*. per quarter	4	12	0
Four and half acres of beans, ploughing, &c. at 7*s*. per acre	1	11	6
Seed, two quarters two buſhels, at 24*s*. per quarter	2	14	0
Reaping, &c. at 8*s*. per acre	1	16	0
Twelve acres hay, harveſting, at 5*s*. per acre	3	0	0
Twenty acres fallow, four times ploughing, &c. at 5*s*. 6*d*. per acre	22	0	0
One hundred and forty-two loads of manure, at 8*s*. per load	56	16	0
Rent	110	0	0
Aſſeſſments, at 5*s*.	27	10	0
	320	7	6

Cr. by Produce.

	£.	s.	d.
Wheat, 23 acres, ſeven loads per acre, at 18*s*. per load	144	18	0
Carry over	144	18	0

	£.	s.	d.
Brought over	144	18	0
Barley, nine ditto, four quarters per acre, at 25*s*. per quarter	45	0	0
Oats, 23 ditto, four quarters per acre, at 12*s*. per quarter	55	4	0
Beans, four and a half ditto, three ditto per acre, at 24*s*. per quarter	16	4	0

59½ acres under plough
20 —— in fallow
59½ —— in graſs

139 total quantity of acres.

	£.	s.	d.
Fifty-nine and a half acres ſtraw, &c. at 1*l*. per acre	59	10	0
Twelve ditto hay, at one ton per acre, 4*l*. per ton	48	0	0
Profit on five cows, at 5*l*. 5*s*. per cow	26	5	0
Profit of a bull, per annum	5	5	0
Nine wethers	18	0	0
Twenty fat lambs	15	0	0
Wool, 30 fleeces, at 3*s*. each	4	10	0
One horſe (ſuppoſe) ſold in two years, will be the half of a horſe in this year's profits	8	0	0
Pigs	5	0	0
	450	16	0
Profit	130	8	6

New Method of Huſbandry.

Dr. to Expences.

Twenty Acres in Turnip, Fallow.

	£.	s.	d.
Two ploughings, &c. carrying twitch off, &c. at 7*s*. each	14	0	0
Six loads of manure per acre, leading on, &c. at 8*s*. per load	48	0	0
Drilling at 2*s*. 6*d*. per acre	2	10	0
Seed, 6*d* per acre	0	10	0
Hoeing, and three times ploughing, 2*s*. each time per acre	6	0	0

Twenty Acres Wheat-Crop.

	£.	s.	d.
Ploughing, ſowing, &c. 7*s*. per acre	7	0	0
Seed, 20 loads, 18*s*. per load	18	0	0
Reaping, and leading, 10*s*. per acre	10	0	0
One hundred and ſixty loads threſhing, &c. 1*s*. per load	8	0	0
Stubble mowing, &c. 3*s*. per acre	3	0	0

Twenty Acres Peas-Crop.

	£.	s.	d.
Ploughing, harrowing, &c. twice, 7*s*. per acre each	14	0	0
Seed, 10 quarters, at 32*s*. per quarter	16	0	0
Drill, 2*s*. 6*d*. per acre	2	10	0
Four loads of manure per acre, leading, &c. at 8*s*. per load	32	0	0
Three ploughings per acre, 1*s*. 6*d*. per acre each	4	10	0
Carry over	186	0	0

	£.	*s.*	*d.*
Brought over	186	0	0
Reaping and threſhing 240 loads, at 8*d.* per load	8	0	0

Twenty Acres Barley-Crop.

Ploughing, &c. and ſowing, 7*s.* per acre	7	0	0
Seed, four buſhels per acre, at 25*s.* per quarter	12	10	0
Clover-ſeed, 14lb. trefoil, 6lb.	8	10	0
Reaping and leading, at 8*s.* per acre	8	0	0
Threſhing, &c. 80 quarters, at 1*s.* 6*d.* per quarter	6	0	0

Twenty Acres Clover-Graſs.

Six loads of manure per acre, at 8*s.* per load	48	0	0
Mowing, &c. twice, 6*s.* per acre	12	0	0

Twenty Acres Wheat-Crop.

Ploughing, ſowing, &c. 7*s.* per acre	7	0	0
Seed, 20 loads, 18*s.* per load	18	0	0
Reaping and leading, 10*s.* per acre	10	0	0
Threſhing, &c. at 1*s.* per load	8	0	0
Stubble mowing, at 3*s.* per acre	3	0	0
Rent and aſſeſſments	137	10	0
	479	10	0

Cr. by Produce.

	£.	*s.*	*d.*
Twenty acres turnips, at 4*l.* per acre	80	0	0
Twenty ditto wheat, eight loads per acre, at 18*s.* per load	144	0	0
Twenty ditto peas, 12 loads per ditto, at 12*s.* per load	144	0	0
Twenty ditto barley, four quarters per ditto, at 25*s.* per quarter	100	0	0
Twenty ditto clover, two ton per ditto, at 4*l.* per ton	160	0	0
Twenty ditto wheat, eight loads per ditto, at 18*s.* per load	144	0	0
Eighty acres ſtraw, at 20*s.* per acre	80	0	0
Profit brought from account of 10 acres managed according to the new ſyſtem, as ſeen below	80	0	0
	932	0	0
Profit	452	10	0

It is imagined that the whole of the houſes, barns, buildings, and fences of the farm may occupy nine acres, which will leave 10 acres for the keep of the cows, horſes, &c. To anſwer which purpoſe they are adviſed to be cropped in this way: three acres and a half with winter tares; two and a half with ſummer cabbages, and potatoes under them; and the four that remain with ſpring tares, or a part of them with buck-wheat. Theſe 10 acres are to ſupply the place of the 59½ allowed for the ſame uſe under the old plan, conſtantly ſuppoſing the farm buildings to occupy the quantity above ſtated. Theſe 10 acres muſt neceſſarily coſt ſomething in cultivating; but when well managed, they will, it is ſuppoſed, keep 40 head of neat cattle and horſes in ſummer with cut ſtraw; and the farmer will thereby have 120 acres of ſtraw, clover, &c. where he had, under the old mode, only 59½; beſides, the crops will be much more bulky, and the quantity of manure conſtantly increaſe by the keeping ſo many cattle, horſes and pigs, in the yards, ſummer and winter; and as the food that is adviſed is too rich for breeding ſtock where ſix cows are kept, as already noticed, 26 feeding beaſts will be alſo wanted, which may afford an average profit of five guineas each, though more may be produced; as two returns may be made. But as theſe profits may be doubted by ſome, they are explained more fully by a debtor and creditor account; and the 10 are ſuppoſed to be ſet with potatoes at firſt, to clean and prepare the land for the tares, &c. carrying the profit on them to the general account, as being part of the crop of the firſt year of the improved huſbandry.

Under Potatoes 10 *Acres.*

New Syſtem of Huſbandry.

Dr. to Expences.

	£.	*s.*	*d.*
Ploughing 10 acres, at 7*s.* per acre	3	10	0
One hundred and twenty ſacks of potatoes for ſeed, at 3*s.* per ſack	18	0	0
Harrowing at different times, at 2*s.* per acre	1	0	0
Ploughing up at 5*s.* per acre	2	10	0
	25	0	0

Cr. by Produce.

	£.	*s.*	*d.*
By 10 acres, ſold at 10*l.* 10*s.* per acre	105	0	0
Profit carried to the general account of one years profit	80	0	0

It is ſuppoſed that in this caſe the potatoe crop is ſold upon the land, as it is not eaſy to eſtimate the expences when the potatoes are diſpoſed of at the market, or double the ſum ſtated would be made of them; as 100 ſacks, at 3*s.* each, would afford 15*l.* the acre, or 150*l.* in the whole; but if they were properly cultivated there would be 150 ſacks to the acre.

Land under the New Syſtem of Huſbandry.—10 *Acres.*

Dr. to Expences.

	£.	*s.*	*d.*
Three and a half acres ploughing, harrowing, and ſowing, at 7*s.* per acre	1	4	6
Seed tares, two buſhels per acre, at 10*s.* per buſhel, and half a peck of rye at 6*d.* per peck	3	11	9
One acre and a half of cabbages, ploughing, &c. at 7*s.* per acre	0	10	6
Two acres and a half drilling, at 2*s.* 6*d.* per acre	0	6	3
Plants which muſt be raiſed on a ſeed-bed, 4lb. of ſeed, at 6*s.* per lb. digging the garden, and ſowing	1	9	0
Planting, at 5*s.* per acre	0	12	6
Four acres, three times ploughing and ſowing at 7*s.* per acre	4	4	0
Manure for ten acres every year, at four loads per acre, at 8*s.* per load	16	0	0
	27	18	6

Cr. by Produce.

	£	s.	d.
By the profit of 32 beaſts, at an average of 5*l.* 5*s.* per beaſt - - - - -	168	0	0
Profit by this mode - - - -	140	1	6

It is noticed that this return of profit ſeems great, but ariſes from the vaſt ſupply of food that is afforded by the 10 acres of land under tares and rye, when combined with cut ſtraw in the keeping of live ſtock. As 10 horſes have been found capable of being kept thirteen months on ſix acres of wheat-ſcouge, and the ſame extent of oats, it may be readily conceived that 10 acres of green fodder, in connection with the ſame number in wheat for ſtraw, will keep 40 head of neat cattle and horſes for the ſummer; conſequently, 40 acres of wheat ſtraw, 20 acres of clover twice mown, 20 acres of barley-ſtraw, and 20 acres of pea-ſtraw, in combination with 20 acres of turnips, will keep with facility 32 head of beaſts, and eight horſes, through the winter ſeaſon. It is evident, therefore, that the produce of the ten acres in green food, in connection with the ſtraw and clover of the other portions, will, under proper management, accompliſh what has been ſtated.

It may be added, that cabbages of the early kind will be ready to cut early in June, and may be kept in uſe all the ſummer, as, before one portion is cut over, the ſprouts of another will be in a ſtate to cut again. Theſe cabbages ſhould be given to ſuch beaſts as are the neareſt ready for the market. As ſoon as the winter tares and rye have been conſumed, Savoy cabbages ſhould be put in the land. The tares will be mown in ſummer, and the cabbages will ſerve the cattle in winter, and be ſoon enough off the ground to ſow it with tares in the ſpring. The land where the ſpring-cabbages have grown ſhould be ſown with winter-tares, in the drill method, in the autumn, uſing from four to ſix loads of dung to the acre for each crop. In the manner of the garden, therefore, theſe 10 acres are to be conſtantly covered with crops, for the uſe of neat cattle and other ſorts of live ſtock.

Though 20 acres have been put down for turnips, to be employed in feeding neat cattle in the yard, the whole will not by any means be wanted, ſo that one-half, or perhaps more, may often be converted to the uſe of the ſheep, and in that way a profit be afforded, which has not been taken into the account. Beſides, the quantity of manure ſtated under the improved huſbandry is ſuppoſed much leſs than will be produced.

But allowing, under the improved practice, an additional man and boy to look after the live ſtock, the former, at the expence of 12*s.* a-week, and the latter at 6*s.* per week; rejecting the fractional parts, and taking 52 weeks for the year, there will be 46*l.* 16*s.* to deduct, which will leave the balance of 405*l.* 14*s.* Thus the profit by the old method being 130*l.* 8*s.* 6*d.* which, taken from the 405*l.* 14*s.* leaves the net balance of profit in favour of the improved huſbandry to be 275*l.* 5*s.* 6*d.*

On the old plan, the profit of a horſe in two years was eſtimated at 16*l.* which, taken for one year only, or one half, is 8*l.* and for pigs 5*l.* as already ſtated, which ſums, added to 275*l.* 5*s.* 6*d.* make, in the whole, 288*l.* 5*s.* 6*d.*; and the 80*l.* for the potatoes being only brought to the account, though the net profit from the 10 acres, in green crops, is 140*l.* 1*s.* 6*d.* the aggregate ſum will be 348*l.* 7*s.* which ſeems a large amount.

But, in this improved management in tillage and live ſtock, manure is raiſed of ſo much better quality, in ſuch plenty, and at ſo much cheaper a rate, than by purchaſing it, as is the general cuſtom of the vicinity of the farm, that it is hardly worth fetching from the large towns; and as it is the very ſoul of huſbandry, every crop will be raiſed in far greater abundance.

It is however remarked, in concluſion, that there are different advantages, in regard to ſituation, that attend this farm, which, from their local nature, will not apply to thoſe afterwards noticed. It may be ſuppoſed that the profit on the beaſts is laid too high; for though, when cattle are fed on graſs, the ſeaſon may poſſibly vary ſo much that double the quantity of ſtock may be carried at one time to what the ſame land is capable of at another; of courſe, as it is common to put on the ſame number of cattle every year, it may, in ſome dry periods, be much overloaded with ſtock, while in others, which are more moiſt, there may be a deficiency, under either of which circumſtances there muſt be loſs ſuſtained; but where food is provided in the way juſt ſtated, the green-crops moſtly become ſo forward before the dry weather occurs, that they are not injured by it, and the ſtock, where properly choſen, by the uſe of the fold or ſtall-feeding, with certainty becomes quickly fat. Every thing is in this mode daily regular, and the animals daily increaſe to the profit of their owners. Advantages are alſo afforded, in different ways, by the contiguity of markets, as in the ſale of, and jobbing in neat cattle, horſes, &c. and likewiſe in the ſtrength of the teams that may be neceſſary.

It may be noticed, that, in theſe eſtimates, it is ſuppoſed that all the ploughing, ſowing, and leading ſhould be had and paid for. As the accounts are drawn out, they of courſe incline much in favour of the old plan of huſbandry, as the expences are leſs in number than will be actually incurred in that way, being made for the purpoſe of exhibiting at one view the vaſt diſparity which is really found to exiſt in the practice of the two different modes on farms of a ſimilar deſcription. That the profits can be aſcertained with exactneſs is probably impoſſible, in conſequence of the great fluctuation of markets, by which no perſon can be exact in the eſtimates of the value of corn or cattle for the ſpace of ſix months together. The expences have, however, been conſtantly eſtimated at a higher rate than it is known they can be done for, that the old method of huſbandry might not be ſuppoſed to be unfairly dealt with.

Theſe eſtimates of profits, whether they reſt upon the baſis of experience or not, ſufficiently point out, that vaſt benefits may be drawn from the culture of green and other cattle crops, and the converſion of them to the feeding and fattening of various kinds of domeſtic animals.

II. *A Mixed or Grazing, Breeding, and Tillage-Farm.*

Extent 314 *Acres.—It is ſituated in the county of Lincoln.*

The eſtimates here diſplay the benefits of different modes of management, where ſeveral kinds of huſbandry are carried on in combination.

At preſent part of the farm is divided into four diviſions for the plough, each diviſion conſiſting of twenty-four acres. And there is an additional diviſion of the ſame land, compriſing ſixteen acres, and about fourteen acres of clay land, which is alſo under the plough. The four large diviſions, and that of ſixteen acres, are on a lime-ſtone ſoil, but the remainder on clay, and liable to rot ſheep. Theſe together make 126 acres, all under the plough on the old plan. There is of courſe remaining 188 acres, which are wholly in graſs, and converted to the purpoſe of raiſing 140 lambs, or tupping 140 ewes, the hog ſheep being ſold off in the ſpring, and the drape ewes at Michaelmas, and the ſupporting of twelve horſes and thirty head of beaſts. The manner of cropping is that of the old method, of turnips, barley, clover, and wheat, which perhaps is as good as any, the farm being converted to the breeding of ſheep, which is highly lucrative.

The expences and produce are thus ſtated.

Annual Mode of Huſbandry, under the old Syſtem.

Dr. to Expences.

	£.	s.	d.
Firſt Plat.			
To fallowing twenty-four acres for turnips; four times ploughing, harrowing, &c. at 6*s.* per acre each	28	16	0
Twelve loads of manure at 8*s.* per acre	115	4	0
Seed and hoeing, 6*s.* per acre	7	4	0
Second.			
Ploughing twenty-four acres for barley, at 7*s.* per acre	8	8	0
Seed, four buſhels per acre, at 25*s.* per quarter	15	0	0
Clover-ſeed, 14lb. per acre, at 6*d* per lb.	8	8	0
Reaping and leading, at 6*s.* per acre	7	4	0
Threſhing, &c. ninety-ſix quarters, at 1*s.* 4*d.* per quarter	6	8	0
Third.			
Clover, mowing, &c. twenty-four acres, at 3*s.* per acre	3	12	0
Fourth.			
Twenty-four acres ploughing for wheat, 7*s.* per acre	8	8	0
Seed, three buſhels per acre, at 5*s.* per buſhel	18	0	0
Reaping and leading, 10*s.* per acre	12	0	0
Threſhing, &c. ſeventy-two quarters, 1*s.* 8*d.* per quarter	6	0	0
Stubble mowing, 3*s.* per acre	3	12	0
Average expence upon the ſixteen acres of cliff-land	43	1	0
Fallowing one-third of fourteen acres of clay-land	6	10	8
Manure once in three years	16	16	0
Rent and aſſeſſments	316	4	4
	630	16	0

Cr. by Produce.

	£.	s.	d.
By twenty-four acres turnips, at 3*l.* 10*s.* per acre	84	0	0
Twenty-four acres barley, four quarters per acre, at 25*s.* per quarter	120	0	0
Twenty-four acres clover, one ton and a half per acre, at 1*l.* per ton	36	0	0
Twenty-four acres clover eaten off, at 10*s.* 6*d.* 6*d.* per acre	12	12	0
Twenty-four acres wheat, three quarters per acre, at 2*l.* per quarter	144	0	0
Sixteen acres of cliff-land, which appear to be carried on in the ſame manner, but do not ſeem to be regular in any crop. Therefore takes			
Carry over	396	12	0
Brought over	396	12	0
the average of its produce from the produce of the ninety-ſix acres above, which are regularly cropped (as the land is of the ſame kind); but being rather better, will ſay 4*l.* 10*s.* per acre	72	0	0
Seven acres of wheat on clay-land, at three quarters per acre, at 2*l.* per quarter	42	0	0
Seven acres beans on ditto, three quarters per acre, 1*l.* 4*s.* per quarter	25	4	0
Sixty-five hogs (feeders), at 1*l.* 8*s.* each	91	0	0
Fifty ewes (drape), at 1*l.* 8*s.* each	70	0	0
Two hundred fleeces of wool, at 1*l.* 1*s.* per tod, four fleeces to a tod	52	10	0
Six fat beaſts, 25*l.* each	150	0	0
Two horſes, at 20*l.* each	40	0	0
Pigs	10	0	0
	949	6	0
Profit	318	10	0

Annual Mode of Huſbandry, under the New Syſtem.

Dr. to Expences.

	£.	s.	d.
Firſt Plat.			
To ploughing, &c. twice for turnips on twenty-four acres twitch, &c. raking off, at 6*s.* per acre	14	8	0
Drilling and ſowing, 2*s.* 6*d.* per acre	3	0	0
Seed, 1*s.* per acre	1	4	0
Hoeing, and three times ploughing, at 1*s.* 6*d.* per acre	5	8	0
Six loads manure, per acre, at 8*s.* per load	57	12	0
Second.			
Ploughing, &c. and ſowing, twenty-four acres for barley, at 7*s.* per acre	8	8	0
Seed four buſhels, at 25*s.* per quarter	15	0	0
Red-clover, 14lb. per acre, at 6*d.* per lb.; trefoil, 6lb. per acre, at 3*d.* per lb.; white clover 6lb. per acre, at 8*d.* per lb.	15	0	0
Reaping and leading, 6*s.* per acre	7	4	0
Threſhing ninety-ſix quarters, at 1*s.* 4*d.* per quarter	6	8	0
Third.			
To clover, twenty-four acres eaten by ſheep.			
Fourth.			
Twenty-four acres wheat, ploughing, &c. at 7*s.* per acre	8	8	0
Seed, three buſhels per acre, at 5*s.* per buſhel	18	0	0
Reaping, &c. at 10*s.* per acre	12	0	0
Seventy-two quarters wheat, threſhing, &c. at 1*s.* 8*d.* per quarter	6	0	0
Stubble mowing, 3*s.* per acre	3	12	0
Fifth.			
Sixteen acres ſainfoin mowing, 3*s.* per acre	2	8	0
	184	0	0

Cr. by Produce.

	£.	s.	d.
By twenty-four acres of turnips, at 3*l.* 10*s.* per acre	84	0	0
Twenty-four acres barley, four quarters per acre, at 1*l.* 5*s.* per quarter	120	0	0
Clover eaten by ſheep, carried to general account.			
Twenty-four acres wheat, three quarters per acre, at 2*l.* per quarter	144	0	0
Sixteen acres ſaintfoin, two tons per acre, at 2*l.* per ton	64	0	0
	412	0	0
Profit	228	0	0

Extent of Farm 14 *Acres.—It is ſituated in the county of Lincoln, and at preſent rots ſheep.*

General Statement of Expences and Produce, under the Improved Syſtem of Huſbandry.

Dr. to Expences.

	£.	s.	d.
Firſt.			
Fourteen acres wheat, ploughing, &c. at 7*s.* per acre	4	18	0
Seed, three buſhels per acre, 5*s.* per buſhel	10	10	0
Reaping, &c. 10*s.* per acre	7	0	0
Threſhing, &c. forty-nine quarters, at 1*s.* 8*d.* per quarter	4	1	8
Stubble mowing, 3*s.* per acre	2	2	0
Second.			
Fourteen acres beans or peas ploughing, 7*s.* per acre	4	18	0
Drilling, at 2*s.* 6*d.* per acre	1	15	0
Four loads of manure per acre, at 8*s.* per load	22	8	0
Three times ploughing, at 1*s.* 4*d.* each per acre	2	16	0
Reaping, &c. 6*s.* per acre	4	4	0
Threſhing, &c. fifty-ſix quarters, at 1*s.* per quarter	2	16	0
Third.			
Fourteen acres barley, ploughing, at 7*s.* per acre	4	18	0
Seed, four buſhels per acre, at 1*l.* 5*s.* per quarter	8	15	0
Clover-ſeed, 14lb. per acre, at 6*d.* per lb.; 6lb. trefoil, at 3*d.* per lb.	5	19	0
Reaping and leading, 8*s.* per acre	5	12	0
Threſhing fifty-ſix quarters, at 1*s.* 2*d.* per quarter	3	5	4
Fourth.			
Fourteen acres clover, mowing, &c. at 6*s.* per acre	4	4	0
Six loads of manure per acre, at 8*s.* per load	33	12	0
Fourteen acres wheat, ploughing, &c. at 7*s.* per acre	4	18	0
Seed, three buſhels per acre, at 5*s.* per buſhel	10	10	0
Carry over	149	2	0
Brought over	149	2	0
Reaping, &c. at 10*s.* per acre	7	0	0
Threſhing, &c. fifty-ſix quarters, at 1*s.* 8*d.* per quarter	4	13	4
Stubble mowing, 3*s.* per acre	2	2	0
Sixth.			
Fourteen acres beans, ploughing, &c. at 7*s.* per acre	4	18	0
Drilling, at 2*s* 6*d.* per acre	1	15	0
Six loads of manure per acre, at 8*s.* per load	33	12	0
Three times ploughing, at 1*s.* 6*d.* each per acre	3	3	0
Reaping, threſhing, &c.	7	0	0
Rent and aſſeſſments, as in the old ſyſtem account	316	4	4
	529	9	8

Cr. by Produce.

	£.	s.	d.
By fourteen acres of wheat, three quarters and a half per acre, at 2*l.* per quarter	98	0	0
Fourteen acres peas or beans, four quarters per acre, at 1*l.* 4*s.* per quarter	67	4	0
Fourteen acres barley, four quarters per acre at 1*l.* 4*s.* per quarter	70	0	0
Fourteen acres clover, two tons and a half per acre, at 2*l.* per ton	70	0	0
Fourteen acres wheat, four quarters per acre at 2*l.* per quarter	112	0	0
Fourteen acres beans, four quarters per acre, at 1*l.* 4*s.* per quarter	67	4	0
Profit brought from the four plats	228	0	0
Profit on beaſts, horſes, ſheep, wool, pigs, &c. brought from account in old ſyſtem, being the ſame in new	413	10	0
	1125	18	0
Profit	596	8	4

This management is explained in this way.

100	Acres of graſs, three ſheep to every two acres	150 *ſheep*
10	Ditto, for feeding beaſts, and a few tups	4 *tups*
72	ditto, for ploughing (in three plats) as before deſcribed: with	
24	Ditto, ſown with graſſes to keep ſheep upon, five to an acre	120 *ſheep*
		274
84	Ditto clay ſoil, under rotation of crops	
16	Ditto of ſaintfoin for hay	
8	Ditto of meadow to cut green, for the purpoſe of ſoiling horſes in the fold or ſtable:	
314	Acres.	

which is conceived the moſt beneficial mode of keeping them, and beyond compariſon preferable to letting them run over the graſs, if it were only for the advantage of the manure, which is extremely valuable to the land.

It is hinted, that on ſuch a farm, at leaſt forty head of neat cattle and horſes ſhould be kept, winter and ſummer, in the yards and ſtable, but twice that number might be had; which, by the uſe of the green food, would furniſh a vaſt ſupply of good manure, far better than ſuch as is raiſed in the uſual way during the winter ſeaſon. And by blending the ſtraw with the green fodder, it may be eaten up with much more profit than in the uſual way; while the ſtock are kept in far better condition.

It is believed that the evil of the land rotting ſheep ſtock is remedied by the converſion of the eighty-four acres of clay land into tillage, and the cuſtom of eating off the ſeeds, ſaintfoin, ediſh, &c. The horſes may be ſoiled in the ſtalls and yards, to avoid the injury of poaching, and thereby moſt of them be kept up.

And as the ſtock of ſheep is increaſed by ſeventy, provided the ſtatement be accurate, in the place of ſelling the hog-ſheep, they may be kept for wedders. However, if danger from rot be apprehended, the cattle ſtock may be augmented, and be probably as profitable; the old number of ſheep (200) being only retained to clip; the ſeeds on the twenty-four acres, part of the ninety-ſix eſtimated to keep five ſheep per acre, by being ſown with graſs ſeeds, in the ſpring, being eaten by the proportion of four ſheep to the acre: but ſuppoſe the number to be a hundred, as fifty of the laſt ſheeder hogs, and the ſame quantity of ſhearling ewes, there only remain then a hundred ſheep for one hundred acres of graſs-land, and of courſe there muſt be the means of keeping a number of beaſts in addition, or of having ſome portion of the land under meadow.

And in the common cuſtom of ſelling off the drape-ewes by removing the lambs from them early in June, or the ſucceeding month, it is ſuppoſed the ewes may have ſufficient time to become fat before the ſetting in of the winter, and be ſold; and the ſixteen acres of ſaintfoin-ediſh being ſuppoſed to inſure a profit on the ſheep greater than that uſually obtained. Farther, that the lambs, by being put to the ſaintfoin, would be preſerved ſound, while the ewes were in a fattening ſtate.

Farm conſiſting of Open Tillage-land.

Extent ſeveral Hundred Acres.—It is ſituated in the north-riding of Yorkſhire, and managed on the old plan adopted in many parts of that diſtrict as the moſt beneficial.

The courſe of huſbandry purſued is one fallow and two crops, in this way.

1ſt year, fallow, manured,
2d year, barley,
3d year, beans,
4th year, fallow,
5th year, wheat,
6th year, oats.

Old Syſtem of Huſbandry.

Dr. to Expences.

Firſt Year, Fallow.

	£.	s.	d.
Four ploughings and harrowings, &c. at 7*s*.	1	8	0
Twelve loads of manure, at 8*s*. per load	4	16	0
One year's rent	15	0	0
Aſſeſſments	1	10	0
Tithe	1	6	0
	24	0	0

Cr. by Produce.

	£.	s.	d.
No crop	0	0	0

Dr. to Expences.

Second Year, Barley.

	£.	s.	d.
Ploughing and harrowing	0	6	6
Seed, four buſhels	0	12	6
Reaping and threſhing	0	12	6
Rent	0	15	0
Aſſeſſments	0	10	0
Tithe	0	6	0
	3	2	6

Cr. by Produce.

	£.	s.	d.
Four quarters of Barley, at 1*l*. 5*s*.	5	0	0
Straw	1	0	0
	6	0	0

Dr. to Expences.

Third Year, Beans.

	£.	s.	d.
Ploughing and harrowing	0	6	6
Seed, four buſhels	0	16	0
Reaping and threſhing	0	12	0
Rent	0	15	0
Aſſeſſments	0	10	0
Tithe	0	6	0
	3	5	6

Cr. by Produce.

	£.	s.	d.
Three quarters of beans, at 1*l*. 12*s*. per quarter	4	16	0
Straw	1	0	0
	5	16	0

Dr. to Expences.

Fourth Year, Fallow.

	£.	s.	d.
Ploughing three times, harrowing, &c.	1	1	0
Rent	0	15	0
Aſſeſſments	0	10	0
Tithe	0	6	0
	2	12	0

Cr. by Produce.

	£.	s.	d.
No crop	0	0	0

Dr.

Dr. to Expences.

Fifth Year, Wheat.

	£.	s.	d.
Ploughing	0	5	0
Seed wheat, three buſhels	0	18	9
Rent	0	15	0
Aſſeſſment	0	10	0
Tithe	0	6	0
Reaping and threſhing	0	15	0
	3	9	9

Cr. by Produce.

	£.	s.	d.
Three quarters of wheat, at 2*l.* 10*s.* per quarter	7	0	0
Straw	1	0	0
	8	0	0

Dr. to Expences.

Sixth Year, Oats.

	£.	s.	d.
Ploughing and harrowing	0	6	6
Seed, four buſhels	0	8	0
Rent	0	15	0
Aſſeſſments	0	10	0
Tithe	0	6	0
Reaping and leading	0	6	6
Threſhing	0	4	0
	2	16	0

Cr. by Produce.

	£.	s.	d.
Four quarters of oats, at 16*s.* per quarter	3	4	0
Straw	1	0	0
	4	4	0
Total for the Cr.	24	10	0
Total for the Dr.	23	0	9
Profit on one acre of land for ſix years	1	9	3

And a courſe of crops on the ſame land for ſix years under the new ſyſtem of huſbandry, is thus ſtated:

1ſt year, turnip fallow,
2d year, barley,
3d year, pea fallow,
4th year, wheat or oats,
5th year, clover,
6th year wheat,

New Syſtem of Huſbandry.

Dr. to Expences.

Firſt Year, Turnips.

	£.	s.	d.
Ploughing 1½ inch deep	0	4	0
Harrowing and raking	0	3	6
Carry over	0	7	6

	£.	s.	d.
Brought over	0	7	6
Ploughing, harrowing, and raking	0	7	6
Ploughing and harrowing	0	5	0
Making drills	0	2	6
Leading refuſe	0	2	6
Manure, ſix loads, at 8*s.* per load	2	8	0
Rent and aſſeſſments	1	5	0
Tithe	0	6	0
Seed and buſh-harrowing	0	1	6
Hoeing	0	1	0
Ploughing three times	0	4	6
	5	11	0

Cr. by Produce.

	£.	s.	d.
Turnips	4	0	0

Dr. to Expences.

Second Year, Barley.

	£.	s.	d.
Ploughing and harrowing	0	7	6
Seed, four buſhels	0	12	6
Rent and aſſeſſments	1	5	0
Tithe	0	6	0
Reaping and threſhing	0	12	0
	3	3	0

Cr. by Produce.

	£.	s.	d.
Barley, four quarters, at 1*l.* 5*s.* per quarter	5	0	0
Straw	1	0	0
	6	0	0

Dr. to Expences.

Third Year, Peas.

	£.	s.	d.
Ploughing harrowing, and raking	0	7	6
Ditto, a ſecond time	0	7	6
Making drills	0	2	6
Manure, four loads, at 8*s.* per load	1	12	0
Buſh-harrowing	0	0	3
Seed, four buſhels	0	16	0
Three times ploughing	0	4	6
Reaping and threſhing	0	12	0
Rent and aſſeſſments	1	5	0
Tithe	0	6	0
	5	13	3

Cr. by Produce.

	£.	s.	d.
Four quarters of peas, at 1*l.* 12*s.* per quarter	6	8	0
Straw	1	0	0
	7	8	0

Dr. to Expences.

Fourth Year, Wheat.

	£.	s.	d.
Scarifying and harrowing - -	0	3	0
Ploughing and ſowing - - -	0	5	0
Seed wheat, three buſhels - -	0	18	9
Rent and aſſeſſments - - -	1	5	0
Tithe - - - - - -	0	6	0
Reaping and threſhing - - -	0	15	0
Clover-ſeed, 20lb. - -	0	10	0
	4	2	9

Cr. by Produce.

	£.	s.	d.
Three quarters of wheat at 2*l.* 10*s.* per quarter	7	10	0
Straw - - - - - -	1	0	0
	8	10	0

Dr. to Expences.

Fifth Year, Clover.

	£.	s.	d.
Mowing and reaping - - -	0	5	0
Rent and aſſeſſments - - -	1	5	0
Tithe - - - - - -	0	6	0
Four loads of manure, at 8*s.* per load -	1	12	0
	3	8	0

Cr. by Produce.

	£.	s.	d.
One and a half ton of clover - -	6	0	0

Dr. to Expences.

Sixth Year, Wheat.

	£.	s.	d.
Ploughing and ſowing - - -	0	6	6
Seed, three buſhels - - -	0	18	9
Reaping and threſhing - - -	0	17	0
Rent and aſſeſſments - - -	1	5	0
Tithe - - - - - -	0	6	0
	3	13	3

Cr. by Produce.

	£.	s.	d.
Four quarters of wheat, at 2*l.* 10*s.* per quarter	10	0	0
Straw - - - - - -	1	0	0
	11	0	0

Total of the produce - - -	42	18	0
Total of the expence - - -	25	11	3
Profit of one acre of land for ſix years -	17	6	9

On theſe data it is concluded that under the old plan of management, the farmer obtains only 1*l.* 9*s.* 3*d.* profit per acre from his land in ſix years, or 4*s.* 10½*d.* per acre per annum. And the expence of labour is ſaid to be ſtated higher than it really is, or he could not ſupport his family and pay his rent: while under the improved huſbandry, in the ſame length of time, the profit is 17*l.* 6*s.* 9*d.* which is 2*l.* 17*s.* 9½*d.* per acre per annum, or more than 100 per cent. in its favour.

It is ſtated, that in this farm there is an open paſture, that is let at 2*s.* 6*d.* the acre, and the tenants conſider it of no uſe to them: but under proper management, it is ſuppoſed, that 5*l.* per acre of profit might be annually derived from it. Of courſe, the tenant may well be ſurpriſed at being charged a new rent of 1*l.* 8*s.* the acre, though he now pays only 15*s.* and is ſuppoſed highly rented according to his plan of management.

It is eſtimated, that the loſs ſuſtained at this rate on two thouſand acres, is 29,625*l.* in ſix years. If that number of acres were let at 1*l.* 8*s.* the acre yearly, there would be an advance of 13*s.* the acre, which would raiſe the ſum of 7000*l.* more for the tenants to pay in ſix years. And that ſum taken from 29,625*l.* would ſtill leave them a profit of 21,825*l.*

Though theſe eſtimates may appear extraordinary to thoſe not converſant with the buſineſs, they are founded in truth; and by purſuing proper courſes, ſuch profits as have been ſtated may be afforded to the landlord, as well as the tenant, independent of the benefit of green food during the ſummer. By a ſuperiority of management in this way, the farmers in Eaſt Lothian are enabled to pay three or four pounds the acre. And if a perſon who lives by garden culture were to dig his ground one year in three, and that year raiſe no crop, he would be ſuppoſed a madman. Yet the two crops and a fallow are worſe, as the land in this way is robbed of one-third of its manure. This may, indeed, be ſuppoſed to open the eyes of the landlord, but it is alſo much to the benefit of the tenant.

Theſe facts and ſtatements fully diſplay the vaſt benefits and improvements that are capable of being derived from the adoption of improved modes of huſbandry in all caſes where they can be admitted; though ſuch detailed ſtatements muſt neceſſarily have regard, in ſome degree, to the peculiar ſituations and other circumſtances of the farms and lands.

A Farm conducted under different Modes of Huſbandry.

In the view of diſplaying more fully the benefits of different modes of managing land, comparative ſtatements of the profits reſulting from a farm of four hundred acres employed under different modes of huſbandry, in different circumſtances, are given:

1ſt. *In the grazing ſyſtem.*
2d. — *the dairy practice.*
3d. — *the hay-ſelling cuſtom.*
4th. — *the tillage plan, near a large town.*
5th. — *the tillage plan more diſtantly ſituated.*
6th. — *the tillage plan with improved courſe of crops.*

Having noticed, that it is not rent that cauſes the poverty or riches of the farmer, but the difference in his mode of managing it, or the method of huſbandry purſued, as a good plan of management improves land, eſpecially under tillage in the moſt expeditious way of any; ſome eſtimates are given which clearly point out the great ſuperiority of the tillage plan over any other that is had recourſe to on the ſame ground in the way of a farm. In this caſe the rent is 50*s* the acre, and the land ſufficiently rich for affording profitable crops under judicious management.

I. *Under the grazing Syſtem of Huſbandry.*

The extent of grazing land in this caſe is ſtated to be 300 acres, ſeventy in meadow, and thirty in tillage. The live ſtock on 200 acres, 150 oxen, bought in at 25*l.* per head, and ſold off at 30*l.* each: and on the remaining 100 acres, 75 cows at 17*l.* each, 4 milch cows; 300 ewes bought in at 45*s.* each, and ſold off at 70*s*, to breed lambs for market; and 3 tups, at 5*l.* each. The lambs produced 400, ſold at 35*s.* each; the wool of the ewes 5lb. each fleece, and ſold at 40*s.* the tod. Eight horſes and ſix pigs. Theſe are thus ſtated:

Expences of ſtock, &c. (*Account* 1.)

	£.	s.	d.
Purchaſe of 150 oxen, at 25*l.* each -	3750	0	0
Seventy-five cows, at 17*l.* - -	1275	0	0
Three hundred ewes, at 45*s.* -	675	0	0
	5700	0	0
Four milch cows, at 20*l.* - -	80	0	0
Eight horſes, at 30*l.* - - -	240	0	0
Three rams, at 5*l.* - - -	15	0	0
Six pigs, at 30*s.* - - -	9	0	0
Two waggons, at 30*l.* - - -	60	0	0
Two carts, at 17*l.* - - -	34	0	0
Two ploughs, at 5*l.* 5*s.* - - -	10	10	0
Two pair of harrows - - -	13	2	6
A ſcarifier - - - -	15	15	0
A roller - - - -	5	5	0
A wheelbarrow - - -	1	1	0
A machine to dreſs corn - -	13	13	0
Shovels, ſpades, forks, ſcuttles, meaſures, &c. - - -	10	10	0
Houſhold furniture - -	200	0	0
	6407	16	6

Stock. (*Account* 2.)

Expences.

	£.	s.	d.
Purchaſe of ſtock, as in the firſt part of account 1. - - -	5700	0	0
Twenty oxen to eddiſh, and the hay in the winter, at 25*l.* each -	500	0	0
Two ſervant-men and a boy - -	28	0	0
Two ſervant-girls - - -	12	0	0
Houſekeeping - - -	200	0	0
Clothing for the family - -	50	0	0
Harveſting 70 acres of hay, at 10*s.*	35	0	0
Clipping the ſheep and ſundries -	5	0	0
Mowing and grubbing thiſtles on grazing land, at 6*d.* an acre -	7	10	0
Harneſs for 8 horſes, at 3*l.* each -	24	0	0
The farmer's expences in doing the buſineſs - - -	70	0	0
	6631	10	0

Returns.

	£.	s.	d.
Sale of 150 oxen, at 30*l.* each -	4500	0	0
of 75 cows, at 21*l.* each -	1575	0	0
of 300 ewes, at 70*s.* - -	1050	0	0
Carry over	7125	0	0
Brought over	7125	0	0
Sale of 53½ tods of wool, at 40*s.* -	107	0	0
of 400 lambs, at 35*s.* -	700	9	0
of 4 calves, at 5*l.* - -	20	0	0
of 20 oxen, at 34*l.* -	680	0	0
Profit on a horſe - -	5	0	0
on 6 pigs - -	6	0	0
on ſale of a cow and a calf -	3	0	0
Total	8646	0	0
Expence	6631	10	0
Profit	2014	10	0

Tillage Part. (*Account* 3)

Expences.

Wheat, Ten Acres.

	£.	s.	d.
Ploughing three times for fallow, at 17*s.* an acre each time - -	25	10	0
Seed ploughing, at 17*s.* an acre -	8	10	0
Seed, 3 buſhels an acre, at 9*s.* 6*d.* each	14	5	0
Weeding, at 6*d.* an acre -	0	5	0
Harveſting, at 18*s.* an acre -	9	0	0
Threſhing, 3 quarters an acre, at 2*s.* 6*d.* per quarter - -	3	15	0
	61	5	0

Returns.

	£.	s.	d.
Thirty quarters of wheat, at 3*l.* 16*s.* per quarter - -	114	0	0
Total	114	0	0
Expences	61	5	0
Profit	52	15	0

Beans, Ten Acres.

	£.	s.	d.
Ploughing, at 17*s.* an acre -	8	10	0
Seed, 3 buſhels an acre, at 4*s.* 4½*d.* each	6	11	3
Hoeing, at 6*s.* an acre -	3	0	0
Harveſting, at 14*s.* an acre -	7	0	0
Threſhing 3 quarters an acre, at 1*s.* 6*d.* a quarter - - -	2	5	0
	27	6	3

Returns.

	£.	s.	d.
Thirty quarters of beans, at 35*s.* per quarter - -	52	10	0
Total	52	10	0
Expences	27	6	3
Profit	25	3	9
Total Profit on the two crops	77	18	9

The expence of three times ploughing the ten acres that were *ſummer-fallowed* for wheat, is charged in the wheat-crop.

(*Account* 4.)

Expences of the Land, &c.

	£.	s.	d.
Rent, 400 acres, at 50*s.*	1000	0	0
Aſſeſſments, at 6*s.* in the pound	300	0	0
Taxes	150	0	0
Intereſt of capital laid out in buying ſtock, &c. as in account above, 6407*l.* 6*s.* 6*d.* at 8 per cent.	512	12	0
Total	1962	11	8

Returns.

Profit on grazing 370 acres, as by account 2	2014	10	0
Arable, 30 acres as by account 3	77	18	9
Total	2092	8	9
Expences	1962	11	8
Total Profit	129	17	1

II. *Under the Dairy Practice.*

In this caſe the farm is ſuppoſed to be principally in the ſtate of graſs, and employed in dairying; in which there are 220 acres in paſture, 150 in meadow, and 30 in tillage. The cow ſtock allowing 1½ acre to each, will be 140; with a bull or two, and ſix horſes. The profit on cows, in calves, butter, and milk for the uſe of the hogs, 15*l.* each. The ſheep ſtock, one ewe to the acre, on the paſture land, is 200 ewes bought in to breed lambs; the ewes and lambs to be made fat, and ſold off, freſh ſtock being purchaſed annually; the produce in lambs will be 250, ſelling at 35*s.* each; and the ewes will coſt 45*s.* each, which, when fat, will ſell for 70*s.* each; their wool, at 5lb. each fleece, will make 35 tods of 20lb., ſelling at 40*s.* the tod. The cows, if bought in at three years old, will coſt 17*l.* each, and after having three calves, ſell for 20*l.* each: conſequently in this way, there will be about thirty-five cows to be changed annually. One horſe will alſo be to be ſold yearly, and one bought in. The tillage part, the ſame as in the grazing farm; 10 acres of wheat, 10 acres of beans, and 10 acres in ſummer fallow. The whole of the ſtatement is thus made out.

Expences of Stock, &c. (*Account* 5.)

	£.	s.	d.
Purchaſe of 200 ewes, at 45*s.*	450	0	0
Two rams, at 5*l.*	10	0	0
	460	0	0
One hundred and forty cows, at 17*l.* each	2380	0	0
Two Bulls, at 10*l.*	20	0	0
Six Horſes, at 30*l.*	180	0	0
Two Waggons, at 30*l.*	60	0	0
Two Carts, at 17*l.*	34	0	0
Two Ploughs, at 5*l.* 5*s.*	10	10	0
Two Pair of harrows	13	2	6
A ſcarifier	15	15	0
A roller	5	5	0
Carry over	3178	12	6
Brought over	3178	12	6
A wheelbarrow	1	1	0
A machine for dreſſing corn	15	15	0
Spades, ſhovels, forks, ſcuttles, meaſures, &c.	10	0	0
Houſhold furniture	200	0	0
Churns, leads, milk-pails, &c.	100	0	0
Harneſs for horſes, at 3*l.* each	18	0	0
Total	3523	8	6

Dairying and Stock. (*Account* 6.)

Expences.

	£.	s.	d.
Purchaſe of ſtock, as in firſt part of account 1	460	0	0
Twenty milkers, at 10*s.* a week each	520	0	0
Wages of four dairy-maids	36	0	0
Houſekeeping	300	0	0
Clothing for the family	50	0	0
Clipping the ſheep and ſundries	3	10	0
Mowing and grubbing the thiſtles on the paſture land, at 6*d.* an acre	5	10	0
Two ſervants to do the farming buſineſs	18	18	0
The farmer's expences in doing the buſineſs	50	0	0
Harveſting 150 acres of hay, at 10*s.* an acre	75	0	0
Total	1518	18	0

Returns.

	£.	s.	d.
The produce from 140 cows, at 15*l.* from each	2100	0	0
Wool, 35 tods and 20lb. at 40*s.* a tod	71	8	7
Two hundred and fifty lambs, at 35*s.* each	437	10	0
Two hundred ewes, at 70*s.*	700	0	0
Profit each year on ſelling 35 cows, at 3*l.*	105	0	0
Total	3413	18	7
Expence	1518	18	0
Profit	1895	0	7

(*Account* 7.)

Expences of the Land, &c.

	£.	s.	d.
Rent of 400 acres, at 50*s.* an acre	1000	0	0
Aſſeſſments, at 6*s.* in the pound	300	0	0
Taxes, according to the ſtock	100	0	0
Intereſt of capital laid out in buying ſtock, &c. as in account 1. 3523*l.* 8*s.* 6*d.* at 8 per cent.	281	17	6
	1681	17	6

Returns.

	£.	s.	d.
Profit on dairying	1895	0	7
Profit on tillage-land	77	18	9
Total	1972	19	4
Expence	1681	17	6
Total Profit	291	1	10

III. *Under the Hay-ſelling Cuſtom.*

The farm is here all in the ſtate of meadow, with the exception of twenty acres in paſture, and thirty in tillage. The ſtock conſiſts of four cows, twelve horſes, and ſix pigs.

Expences of Stock, &c. (*Account* 8.)

	£.	s.	d.
Purchaſe of 12 horſes, at 20*l.* each	240	0	0
Four Cows, at 20*l.*	80	0	0
Six Pigs, at 20*s.*	6	0	0
Three Waggons, at 30*l.*	90	0	0
Three Carts, at 17*l.*	51	0	0
Two Ploughs, at 5*l.* 5*s.*	10	10	0
Two Pair of harrows	13	2	6
A ſcarifier	15	15	0
A roller	5	5	0
A wheelbarrow	1	1	0
A machine for dreſſing corn	15	15	0
Spades, ſhovels, forks, ſcuttles, meaſures, &c.	10	0	0
Harneſs for horſes, at 3*l.* each	36	0	0
Houſhold furniture	200	0	0
Total	774	8	6

(*Account* 9.)

Expences on Land and Stock.

	£.	s.	d.
Harveſting hay, 350 acres, at 20*s.* each	350	0	0
Preparing hay for the market	78	15	0
Three carters to drive the hay to market, at 20*s.* a week each	156	0	0
Three ſervant-boys, at 7*l.* 7*s.* a year each	22	1	0
Turnpikes during the year	45	15	0
A ſervant-girl	6	0	0
Expences on the tillage-land, as in account 3, 61*l.* 5*s.* and 27*l.* 6*s.* 3*d.*	88	11	3
Rent, the ſame as before	1000	0	0
Aſſeſſments, at 6*s.* in the pound	300	0	0
Taxes	50	0	0
Intereſt of capital laid out in buying ſtock, &c. as in account 8, 774*l.* 8*s.* at 8 per cent	61	19	0
Eight hundred loads of dung, at 2*s.* a load	80	0	0
	2239	1	3

Returns.

	£.	s.	d.
Seven hundred loads of hay (a proportion of two loads an acre), at 65*s.* a load	2275	0	0
After-crop of graſs, at 20*s.* an acre	350	0	0
Profit on four cows	20	0	0
Ditto on the tillage-land	77	18	0
Wheat-ſtraw on ten acres, five loads an acre, at 45*s.* per load	112	10	0
Total	2835	8	9
Expence	2239	1	3
Profit	596	7	6

IV. *Under Tillage near a large Town.*

The farm in this inſtance conſiſts of 264 acres of land in tillage, thirty-ſix in meadow, and the remainder in grazing ground. The ſtock is ſuppoſed to be 12 horſes for market work, and ſix for the purpoſes of tillage. The 100 acres of grazing land being ſtocked with oxen, at the rate of three to four acres; alſo ſix milch cows; and 100 ewes, one to the acre, to produce lambs; the produce about 125 lambs; conſequently freſh ſtock will be yearly wanted. The oxen ſhould be bought in, in the ſpring ſeaſon at about 25*l.* a piece, being ſold off at about 30*l.* The lambs, when fattened, will fetch about 35*s.* each. The ewes are purchaſed in at about 45*s.* each; and diſpoſed of at about 75*s.* each, being fattened on rape or turnips, ſown on the land from which the garden peas had been taken. And the hay from the thirty-ſix acres of meadow land can, it is ſuppoſed, from the ſituation of the farm, be ſent to market with more profit than by conſuming it; there being two loads to the acre; the eddiſh being eaten off by oxen and ſheep ſtock.

Expences of Stock, &c. (*Account* 1.)

	£.	s.	d.
Purchaſe of 70 oxen, at 25*l.* each	1750	0	0
One hundred ewes, at 45*s.*	225	0	0
	1975	0	0
Twelve Horſes, at 25*l.*	300	0	0
Six ditto, at 15*l.*	90	0	0
Six Cows, at 20*l.*	120	0	0
A ram	5	0	0
Eight Pigs, at 30*s.*	12	0	0
Three Waggons, at 30*l.*	90	0	0
Three Carts, at 17*l.*	51	0	0
Three Ploughs, at 5*l.* 5*s.*	15	15	0
Four Pair of harrows	26	5	0
A ſcarifier	15	15	0
A roller	5	5	0
Two Wheelbarrows	2	2	0
A machine for dreſſing corn	15	15	0
Spades, ſhovels, forks, ſcuttles, meaſures, &c.	10	0	0
Harneſs for horſes, at 3*l.* each	54	0	0
Houſhold furniture	200	0	0
Total	2987	17	0

Stock. (*Account* 2.)

Expences.

	£.	s.	d.
Purchaſe of ſtock, as in the firſt part of acco[u]t 1	1975	0	0
—— of ten oxen to eat eddiſh in the autumn, at 25*l.* each	250	0	0
Wages of four men-ſervants	40	0	0
—— of two ſervant-girls	12	0	0
Clipping the ſheep and ſundries	2	0	0
Mowing and grubbing thiſtles on the grazing land, at 6*d.* per acre	2	10	0
Houſekeeping	300	0	0
Clothing for family	50	0	0
The farmer's expences in doing the buſineſs	70	0	0
Harveſting thirty-ſix acres of hay, at 10*s.* an acre	18	0	0
Total	2719	10	0

Returns.

	£.	s.	d.
Sale of ſeventy oxen, at 30*l.* each	2100	0	0
—— of 100 ewes, at 75*s.*	375	0	0
Carry over	2475	0	0

Sale

	£.	s.	d.
Brought over	2475	0	0
Sale of wool, 17 tods, at 40*s.* a tod	34	0	0
—— of 125 lambs, at 35*s.* each	218	15	0
—— of ten oxen, at 30*l.*	300	0	0
Profit on a cow and calf ſold	3	0	0
—— on ſix cows	30	0	0
Total	3060	15	0
Expence	2719	10	0
Profit	341	5	0

The expences of making the hay are noticed to be eſtimated at 10*s.* the acre only, as the quantity being only 36 acres, it may be done wholly by the farmer's family; but where the buſineſs is hired, 20*s.* are as little as can be charged.

That part of the farm which is under tillage may be managed in ſuch a mode of cropping, as to produce 14 crops in the courſe of 11 years, ſomewhat in this way:—

Courſes of Crops.

1ſt. Year, Potatoes manured for with 12 loads of dung per acre.
2d. —— Wheat, limed with 30 buſhels, mixed with earth, per acre.
3d. —— Flax; rape being ſown after it is off, for ſeed.
4th. —— Rape for a crop, ſtraw burnt after it is taken off, for wheat.
5th. —— Wheat.
6th. —— Garden peas drilled, and manured with four loads of dung per acre, and turnips afterwards; eight loads of dung per acre broad-caſted, and drilled.
7th. —— Barley ſown with clover.
8th. —— Clover, manured with ſix loads of compoſt per acre.
9th. —— Wheat; limed with 30 buſhels, mixed with earth, per acre.
10th. —— Beans, manured with 12 loads of dung per acre, and hoed.
11th. —— Oats.

(*Account* 3.)

Dr. to Expences.

Vetches, Eight Acres.

	£.	s.	d.
Ploughing, at 10*s.* 6*d.* per acre	4	4	0
Seed, four buſhels an acre, at 10*s.* a buſhel	16	0	0
Harrowing, at 1*s.* 6*d.* an acre	0	12	0
Manure, 12 loads an acre, at 10*s.* a load	48	0	0
	68	16	0

Cr. by Produce.

	£.	s.	d.
Crop at 7*l.* an acre	56	0	0

Dr. to Expences.

Turnips, Eight Acres, the ſame Land.

	£.	s.	d.
Scarifying, harrowing, and gathering refuſe ſtuff, at 5*s.* an acre	2	0	0
Carry over	2	0	0

	£.	s.	d.
Brought over	2	0	0
Ploughing, at 10*s.* 6*d.* an acre	4	4	0
Seed, 6lb. an acre, at 9*d.* a pound	1	16	0
Harveſting, at 1*s.* 6*d.* per acre	0	12	0
Harrowing, when growing, at 1*s.* an acre	0	8	0
Hoeing, at 6*s.* an acre	2	8	0
Rent of theſe eight acres	20	0	0
Aſſeſſments, at 6*s.* in the pound	6	0	0
	37	8	0

Cr. by Produce.

	£.	s.	d.
Crop, at 5*l.* an acre	40	0	0

Dr. to Expences.

Potatoes, Sixteen Acres.

	£.	s.	d.
Ploughing twice, at 10*s.* 6*d.* an acre each time	16	16	0
Scarifying, harrowing, and gathering refuſe ſtuff, &c. at 5*s.* an acre	4	0	0
Manure, 12 loads an acre, at 10*s.* per load	96	0	0
Seed, 36 buſhels an acre, at 1*s.* 6*d.* a buſhel	43	0	0
Ploughing for planting, at 10*s.* 6*d.* an acre	8	8	0
Harrowing, when the crop comes up, at 1*s.* an acre	0	16	0
Hoeing, at 6*s.* an acre	4	16	0
Ploughing up the crop, ſowing wheat, and gathering the potatoes, at 50*s.* an acre	40	0	0
Rent	40	0	0
Aſſeſſments, at 6*s.* in the pound	12	0	0
	265	16	0

Cr. by Produce.

	£.	s.	d.
Crop, 450 buſhels an acre, at 1*s.* 6*d.* a buſhel	540	0	0

Dr. to Expences.

Wheat, Twenty-four Acres.

	£.	s.	d.
Seed, 3½ buſhels an acre, at 9*s.* 6*d.* a buſhel	39	0	0
Harrowing, at 1*s.* 6*d.* an acre	1	16	0
Lime, 30 buſhels an acre, bought at 4*d.* a buſhel, mixing with earth, leading, &c. at 4*d.* a buſhel	24	0	0
Buſh-harrowing, and rolling, at 2*s.* 6*d.* an acre	3	0	0
Weeding, at 6*s.* an acre	0	12	0
Harveſting, at 18*s.* an acre	21	12	0
Threſhing five quarters an acre, and tying the ſtraw up, at 3*s.* a quarter	18	0	0
Rent	60	0	0
Aſſeſſments, at 6*s.* in the pound	18	0	0
	186	0	0

Cr. by Produce.

	£.	s.	d.
Crop, five quarters an acre, at 76*s.* a quarter	456	0	0
Straw, five loads an acre, at 45*s.* a load	270	0	0
	726	0	0

Dr.

Dr. to Expences.

Flax, Twenty-four Acres.

	£.	s.	d.
Ploughing, at 10s. 6*d.* an acre	12	12	0
Seed, two buſhels an acre, at 12*s.* 6*d.* a buſhel	30	0	0
Harrowing and rolling, at 2*s.* 6*d.* an acre	3	0	0
Weeding, at 2*s.* an acre	2	8	0
Pulling, at 10*s.* 6*d.* an acre	12	12	0
Watering	12	0	0
Laying on the ledge, and taking up	12	0	0
Beetling	20	0	0
Scutching twice, 1028 ſtone, at 2*s.* a ſtone	102	16	0
Hackling ditto, at 3*s.* 6*d.* a ſtone	179	18	0
	387	6	0

Cr. by Produce.

	£.	s.	d.
Crop, 1028 ſtone of ſlax, at 14*s.* a ſtone	719	12	0

Dr. to Expences.

Rape for Seed, Twenty-four Acres, the ſame Land.

	£.	s.	d.
Ploughing, at 10*s.* 6*d.* an acre	12	12	0
Seed, half a peck an acre, at 1*s.* 3*d.* a half-peck	1	10	0
Harrowing, at 1*s.* 6*d.* an acre	1	16	0
Harveſting, threſhing, &c. at 25*s.* an acre	30	0	0
Rent	60	0	0
Aſſeſſments, at 6*s.* in the pound	18	0	0
	123	18	0

Cr. by Produce.

	£.	s.	d.
Crop, five quarters of ſeed an acre, at 4*l.* a quarter	480	0	0

Dr. to Expences.

Wheat, Twenty-four Acres.

	£.	s.	d.
Burning rape-ſtraw, at 20*s.* an acre	24	0	0
Ploughing, at 10*s.* 6*d.* an acre	12	12	0
Seed 3½ buſhels an acre, at 9*s.* 6*d.* a buſhel	39	18	0
Harrowing, at 1*s.* 6*d.* an acre	1	16	0
Buſh-harrowing and rolling, at 2*s.* 6*d.* an acre	3	0	0
Weeding, at 6*d.* an acre	0	12	0
Harveſting, at 18*s.* an acre	21	12	0
Threſhing, five quarters an acre, and tying the ſtraw up, at 3*s.* a quarter	18	0	0
Rent	60	0	0
Aſſeſſments, at 6*s.* in the pound	18	0	0
	199	10	0

Cr. by Produce.

	£.	s.	d.
Crop, five quarters an acre, at 76*s.* a quarter	456	0	0
Straw, five loads an acre, at 45*s.* a load	270	0	0
	726	0	0

Dr. to Expences.

Garden Peas, Twenty-four Acres.

	£.	s.	d.
Making drills, at 10*s.* 6*d.* an acre	12	12	0
Manure, four loads an acre, at 10*s.* per load	48	0	0
Seed, three buſhels an acre, at 10*s* a buſhel	36	0	0
Earthing, three times, at 2*s.* 6*d.* an acre each time	9	0	0
Roguing, at 1*s.* an acre	1	4	0
Reaping, at 12*s.* an acre	14	8	0
Threſhing, five quarters an acre, at 1*s.* 3*d.* a quarter	7	10	0
	128	14	0

Cr. by Produce.

	£.	s.	d.
Crop, five quarters an acre, at 4*l.* a quarter	480	0	0
Straw, five loads an acre, at 30*s.* a load	180	0	0
	660	0	0

Dr. to Expences.

Turnips, Twenty-four Acres, ſame Land.

	£.	s.	d.
Scarifying, harrowing, and preparing the land for the crop, at 5*s.* an acre	6	0	0
Ploughing and harrowing, at 12*s.* an acre	14	8	0
Seed, 6lb. an acre, at 9*d.* a pound	5	8	0
Harrowing the crop when growing, at 1*s.* an acre	7	4	0
Rent	60	0	0
Aſſeſſments, at 6*s.* in the pound	18	0	0
	152	0	0

Cr. by Produce.

	£.	s.	d.
Crop, at 5*l.* an acre	120	0	0

Dr. to Expences.

Barley, Twenty-four Acres.

	£.	s.	d.
Ploughing, at 10*s.* 6*d.* an acre	12	12	0
Seed, four buſhels and a half an acre, at 4*s.* a buſhel	21	12	0
Harrowing, at 1*s.* 6*d.* an acre	1	16	0
Clover-ſeed, 20lb. an acre, at 8*d.* a pound	16	0	0
Buſh-harrowing and rolling, at 2*s.* 6*d.* an acre	3	0	0
Weeding, at 6*d.* an acre	0	12	0
Harveſting, at 12*s.* an acre	14	8	0
Threſhing ſix quarters an acre, and tying the ſtraw up, at 2*s.* 6*d.* a quarter	18	0	0
Rent	60	0	0
Aſſeſſments, at 6*s.* in the pound	18	0	0
	166	0	0

Cr. by Produce.

	£.	s.	d.
Crop, ſix quarters an acre, at 32*s.* per quarter	230	0	0
Straw, five loads an acre, at 30*s.* a load	180	0	0
	410	0	0

Dr. to Expences.

Clover, Twenty-four Acres.

	£.	s.	d.
Manure, ſix loads an acre, at 10*s.* a load	72	0	0
Mowing twice, at 2*s.* 3*d.* an acre each time	5	8	0
Harveſting, at 3*s.* 6*d.* an acre	4	4	0
Rent	60	0	0
Affeſſments, at 6*s.* in the pound	18	0	0
	159	12	0

Cr. by Produce.

	£.	s.	d.
Crop, 3½ loads of hay an acre, at 5*l.* a load	420	0	0

Dr. to Expences.

Wheat, Twenty-four Acres.

	£.	s.	d.
Ploughing, at 10*s.* 6*d.* an acre	12	12	0
Seed, 3½ buſhels an acre, at 9*s.* 6*d.* a buſhel	39	18	0
Harrowing, at 1*s.* 6*d.* an acre	1	16	0
Lime, 50 buſhels an acre, bought at 4*d.* a buſhel, mixing earth, leading, &c. at 4*d.* a buſhel	24	0	0
Buſh-harrowing and rolling, at 2*s.* 6*d.* an acre	3	0	0
Weeding, at 6*d.* an acre	0	12	0
Harveſting, at 18*s.* an acre	21	12	0
Threſhing five quarters an acre, and tying the ſtraw up, at 3*s.* a quarter	18	0	0
Rent	60	0	0
Affeſſments, at 6*s.* in the pound	18	0	0
	199	10	0

Cr. by Produce.

	£.	s.	d.
Crop, five quarters an acre, at 76*s.* a quarter	456	0	0
Straw, five loads an acre, at 45*s.* a load	270	0	0
	726	0	0

Dr. to Expences.

Beans, Twenty-four Acres.

	£.	s.	d.
Manure, 12 loads an acre, at 10*s.* a load	144	0	0
Ploughing at 10*s.* 6*d.* an acre	12	12	0
Seed, three buſhels an acre, at 4*s.* 4½*d.* a buſhel	15	15	0
Harrowing, at 1*s.* 6*d.* an acre	1	16	0
Hoeing, at 6*s.* an acre	7	4	0
Threſhing five quarters an acre, at 2*s.* a quarter	21	12	0
Rent	60	0	0
Affeſſments, at 6*s.* in the pound	18	0	0
	280	19	0

Cr. by Produce.

	£.	s.	d.
Crop, five quarters an acre, at 35*s.* a quarter	210	0	0
Straw, five loads an acre, at 30*s.* a load	180	0	0
	390	0	0

Dr. to Expences.

Oats, Twenty-four Acres.

	£.	s.	d.
Ploughing, at 10*s.* 6*d.* an acre	12	12	0
Seed, eight buſhels an acre, at 4*s.* a buſhel	38	8	0
Harrowing, at 1*s.* 6*d.* an acre	1	16	0
Buſh-harrowing and rolling, at 2*s.* 6*d.* an acre	3	0	0
Weeding, 6*d.* an acre	0	12	0
Harveſting, at 12*s.* an acre	14	8	0
Threſhing, 10 quarters an acre, and tying the ſtraw, at 2*s.* a quarter	24	0	0
Rent	60	0	0
Affeſſments, at 6*s.* in the pound	18	0	0
Total	172	16	0

Cr. by Produce.

	£.	s.	d.
Crop, 10 quarters an acre, at 32*s.* a quarter	384	0	0
Straw, five loads an acre, at 30*s.* a load	180	0	0
	564	0	0
Total	6578	0	0
Expence	2501	11	0
Profit	4076	9	0

(Account 4.)

Expences of the Land.

	£.	s.	d.
Rent for 136 acres of graſs-land, at 50*s.* an acre	340	0	0
Affeſſments at 6*s.* in the pound	102	0	0
Taxes	170	0	0
Intereſt of capital, laid out in buying ſtock, &c. 2987*l.* 17*s.* at eight per cent.	239	0	7
	851	0	7

Returns.

	£.	s.	d.
Profit on 136 acres of graſs-land, as in account 2	341	5	0
——— on 264 acres of tillage-land, as in account 3	4076	9	0
Total	4417	14	0
Expence	851	0	7
Profit	3566	13	5

V. *Under the Tillage more diſtantly ſituated.*

This is ſimilar in all reſpects to the above, except in ſituation, which renders it neceſſary to conſume the hay and ſtraw upon the farm; conſequently the ſtatements demonſtrate the variations in value of different ſituations. It is ſuppoſed, as above, that 264 acres of the land are in tillage; 36 in meadow, and the remaining 100 in paſture. The laſt portion, ſtocked as before with 70 oxen; ewes, one to the acre, 100; theſe are ſuppoſed to afford 125 lambs, which are to be ſent to the market, and the ewes fattened on the rape after the peas. The profit on theſe articles is explained in account N° 2; the oxen 5*l.* each profit; the lambs 35*s.* each; the ewes bought in at 45*s.* and ſold off at 75*s.* being brought to the market in winter, when mutton is dear. Ten horſes only, as fewer will anſwer, there being only the corn to take to market; but more oxen ſhould be kept. Such as are bought in, in the ſummer, ſhould be fed on ſtraw in the winter; four or ſix being employed in carting dung, harveſt-work, &c. More pig-ſtock may likewiſe be kept; fifty being put in the yards. And as the clover hay is here to be eaten, the oxen ſhould have ſome in the ſpring in the yard, to forward them for fattening off in the paſtures. Conſequently there is no profit in the hay, only from the oxen. Six of the horſes to be annually ſold, and others bought in. The oxen ſhould be bought in, as there may be room in the ſummer; 88 being provided annually, and fattened, ſo as to have freſh ſtock every ſeaſon: 18 being fed out in winter, and 70 in the ſummer ſeaſon.

Expences of Stock, &c. (*Account* 1.)

	£.	s.	d.
Purchaſe of 70 oxen, at 20*l.* each, being bought in the ſummer, and wintered at ſtraw	1400	0	0
One hundred ewes, at 45*s.*	225	0	0
	1625	0	0
Ten horſes, at 25*l.*	250	0	0
Six cows, at 20*l.*	120	0	0
A ram, at 5*l.*	5	0	0
Eight pigs, at 30*s.*	12	0	0
Two waggons, at 30*l.*	60	0	0
Two carts, at 17*l.*	34	0	0
Three ploughs, at 5*l.* 5*s.*	15	15	0
Four pair of harrows	26	5	0
A ſcarifier	15	15	0
A roller	5	5	0
Two wheelbarrows	2	2	0
A machine to dreſs corn	15	15	0
Shovels, ſpades, forks, ſcuttles, meaſures, &c.	10	0	0
Harneſs for ten horſes, at 3*l.* each	30	0	0
Houſhold furniture	200	0	0
	2427	17	0

Graſs-Land. (*Account* 2.)

Stock Expences, &c.

	£.	s.	d.
Purchaſe of ſtock, as in the firſt part of account 1	1625	0	0
Eighteen oxen to eat hay in the winter, at 20*l.* each	360	0	0
Clipping the ſheep, and ſundries	2	0	0
Fifty pigs, at 30*s.* each	75	0	0
Mowing and grubbing thiſtles on the paſture-land, at 6*d.* an acre	2	10	0
Harveſting thirty-ſix acres of hay, at 10*s.* an acre	18	0	0
Rent of 136 acres, at 50*s.*	340	0	0
Aſſeſſments, at 6*s.* in the pound	102	0	0
Total	2524	10	0

Returns.

	£.	s.	d.
Sale of 70 oxen, at 30*l.* each	2100	0	0
—— of wool, 17 tods 24lb. at 40*s.* a tod	35	14	3
—— of 100 ewes, at 75*s.*	375	0	0
—— of 125 lambs, at 35*s.*	218	15	0
—— of 18 oxen, at 30*l.*	540	0	0
Profit on a cow and a calf ſold	3	0	0
—— on 6 cows ſold	30	0	0
—— on 6 horſes ſold	30	0	0
Fifty pigs ſold, at 55*s.* each	137	0	0
Total	3469	9	3
Expence	2524	10	0
Profit	945	19	3

By a trifling miſtake in moſt of the above ſtatements, the houſe-keeping and expences have been put into one of the ſeparate accounts, inſtead of the general account, at the end of each farm; and in the ſame manner, the rent charged in account four, ſhould have been brought into account 5; but theſe are of little conſequence, as the ſums of *total profit* muſt have been the ſame.

The tillage-land in this caſe is under the ſame courſes as in the preceding farm.

(*Account* 3.)

Expences.

	£.	s.	d.
Vetches and turnips	106	4	0
Potatoes	266	0	0
Wheat	186	18	0
Flax	387	6	0
Rape, for feed	123	18	0
Wheat	199	10	0
Garden peas	128	14	0
Turnips	112	4	0
Barley	166	0	0
Clover	159	12	0
Wheat	199	10	0
Beans	292	19	0
Oats	172	16	0
Total	2501	11	0

Produce.

			£.	s.	d.
Crops of vetches			56	0	0
—— of turnips			40	0	0
Crop			540	0	0
Crop	456	0			
Straw, at 30*s.* an acre *	36	0			
			492	0	0
Crop			719	12	0
Crop			480	0	0
Crop	456	0			
Straw, at 30*s.* per acre	36	0			
			492	0	0
Carry over			2819	12	0

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* Though all the ſtraw and clover be conſumed by the horſes, cattle, &c. on the farm; yet, as the ploughing, harrowing, manuring, &c. of the crops are charged at the full price, it is neceſſary that in this account a fair rate ſhould be allowed for the whole of the produce.

			£.	s.	d.
Brought over			2819	12	0
Crop - - -	480	0			
Straw, at 30*s*. per acre -	36	0			
			516	0	0
Crop - - - -			120	0	0
Crop - - -	230	8			
Straw, at 30*s*. per acre -	36	0			
			266	8	0
Crop, at 2*l*. 10*s*. *per* load - -			210	0	0
Crop - - -	456	0			
Straw, at 30*s*. *per* acre -	36	0			
			492	0	0
Crop - - -	210	0			
Straw, at 30*s*. *per* acre -	36	0			
			246	0	0
Crop - - -	384	0			
Straw, at 30*s*. *per* acre -	36	0			
			420	0	0
Total			5090	0	0
Expence			2501	11	0
Profit			2588	9	0

(*Account* 4.)

Expence of the Land, &c.

	£.	s.	d.
Taxes, according to the ſtock - -	130	0	0
Intereſt of capital laid out in buying ſtock, &c. 2426*l*. 17*s*. at 8 per cent. - -	194	2	11
Four men-ſervants - - -	40	0	0
Two ſervant-girls - - -	12	0	0
Houſe-keeping - - - -	300	0	0
Clothing for family - - -	50	0	0
Farmer's expences in doing the buſineſs -	70	0	0
Total	796	2	11

Returns.

	£.	s.	d.
Profit on the graſs-land, 136 acres -	945	9	3
—— on the arable-land, 264 acres -	2588	9	0
Total	3533	18	3
Expence	796	2	11
Total profit	2737	15	4

It is ſhewn by theſe eſtimates, that the *annual* profit on *one acre* of land, under each of theſe different methods of huſbandry, is in the following ratio :

	£.	s.	d.
On grazing farm - - -	0	6	6
— dairy-farm - - -	0	14	6
— hay-farm - - -	1	9	9
— tillage-farm, 1ſt ſituation - -	8	17	10
— tillage farm, 2d ſituation - -	6	17	0

It is ſuppoſed, that in both the ſyſtems of management on the tillage-farm there are twelve horſes employed for the purpoſe of market-work, and bringing in return ſuch things as may be wanted ; and ſix of a lighter kind for the plough-teams, to be provided at leſs expence, and do more work in an equal portion of time.

And it is ſuggeſted, that by the improved manner of cropping employed there will never be more than twenty-four acres to manure at any one time, except at the wheat ſowing ſeaſon, and then even the quantity may be divided by that part of the land which has grown the potatoes being ſown firſt, at the time they are taken up. By pulling up all the tops, and depoſiting them in the farm yards as litter, they, as well as the earth that is carried with them, will be reſtored to the land. The ſmall potatoes ſhould be uſed for the pigs. And by ſowing the wheat immediately on the land cleared from the ſtems of the potatoes previous to their being ploughed up, an advantage is ſaid to be derived. But from the danger of froſt, no more of the tops ſhould be removed at a time than can be ploughed up during the day.

In following this method, the next ſowing of wheat will, it is ſuppoſed, be on the land that has grown rape for ſeed. It may likewiſe be ſown firſt, where the potatoes are not ready to be taken up. And the third time of ſowing wheat will be on the clover lay; in which caſe there is plenty of time, as it may be done in winter, with nearly equal ſucceſs, as from September to January. This, however, is not the caſe with ſpring crops, as all thoſe of the grain kind ſhould be got in as ſpeedily as poſſible. But bean and pea crops may always be put in the ſoil a fortnight or three weeks previouſly to thoſe of the corn kind ; and it is noticed, that where the land is all prepared, and the teams taken off for the purpoſe, there will be nine pair of horſes, which will be capable of harrowing in the whole of theſe crops in three days. And the twenty-four acres of barley, and the twenty-four acres of wheat may be harrowed in the ſame ſpace of time. This is conſidered as one of the great benefits of large teams, as ſuch a great number being employed in carrying the produce, they are capable of being made uſe of for about twenty days in ſeed-time and harveſt, and, of courſe, to earn nearly what they coſt in keep in the whole of the year.

Other benefits are ſuppoſed to reſult from this ſcheme of cropping ; the harveſt labour is more divided ; the flax and pea crops are ready in July, afterwards the oats, then the wheat, and laſtly the beans. This, while it increaſes convenience, leſſens expence. The rape may be threſhed in the field, and ſold early in Auguſt, furniſhing money for the expences of the remaining harveſt. Beſides, there is hardly a month of the year, in which conſiderable returns of money are not coming in from one or other of the different operations. The flax may be ſold on the ground to pull in July by the purchaſer, which uſually affords from ſeven to nine guineas the acre, which, though apparently a ſmall ſum in compariſon with ſome other ſorts of crops, is ſtated as paying well for the time it occupies the ground ; which is only about three months, being ſown in April and pulled in July. By all theſe means the expences are diminiſhed, and of courſe larger profits afforded. In ſhort, theſe detailed accounts furniſh the cultivator with the means of judging of the moſt advantageous modes of employing his land in the view of profit. They ſeem to prove three of the methods of farming to be very indifferent concerns, tillage huſbandry having vaſtly the advantage over them ; and it is ſuppoſed that many further improvements are ſtill to be made in it ; for which various hints are thrown out, and different calculations introduced.

It muſt conſtantly be kept in mind that, in all the different ſchemes of huſbandry, the profits and benefits are to proceed, not only from the ſuperiority of the management that may be employed, but the nature of the ſituation in regard to the facility and cheapneſs of ſtocking the land, and the eaſe of cultivating it ; as in ſome places the expences of the former will not be more than from five to ſeven or eight pounds the acre; while, in others, it may be from ten to twelve or thirteen pounds the acre, as is the caſe in ſeveral parts of Eſſex; and conſequently the expences in the ſame proportions, though the variations in the markets for the diſpoſal of the produce may be but trifling.

It would be eaſy to introduce other calculations on arable, and farms of other kinds, where great improvements are to be effected by claying, chalking, marling, liming, &c.; but as they muſt invariably be regulated by the local nature of the different ſituations, they could be of but little utility in guiding the practice of the farmer.

It does not admit of a doubt, that huſbandry has been greatly improved in moſt of its different branches within theſe few late years in this country. Far better modes of cropping land, and of combining the feeding of cattle ſtock with arable management, have been introduced and adopted. More appropriate, cheap, and convenient tools for various purpoſes of tillage and other practices of farming have been invented; and moſt of the proceſſes and operations of the art rendered more ſimple and eaſily performed. Yet ſtill, if thoſe laws and regulations which repreſs the efforts of the cultivator were modified or removed; leaſes more generally and liberally granted, for moderate periods of time; and the diſſemination of uſeful information on rural buſineſs carefully attended to, the ſtate of cultivation would ſoon be advanced to a much higher degree of perfection than it has yet attained.

Husbandry, *Broad-caſt*. See Broad-cast.

Husbandry, *Drill*, that ſort in which the ſeed is depoſited in ſmall furrows, drills, or openings, in rows, at different diſtances, according to the nature and circumſtances of the ſoils and the crops by ſuitable machinery, and in which the after-culture is performed by the uſe of the horſe-hoe, or other tools of a ſimilar kind. See Hoe, Hoeing, and Machine *Drill*.

For the introduction and extenſion of this method of huſbandry in this country, we are principally indebted to Mr. Tull and his followers, who, in promoting it, ſeem to have conſidered it as altogether *new*; but this would appear from the account which has lately been publiſhed in the firſt volume of Communications to the Board of Agriculture, by Mr. Halcott, not to be the caſe, as it has been found to be the general practice in the Innacondah diſtrict in the Eaſt Indies, in the cultivation of all ſorts of grain, except thoſe of the horſe kind, as well as in the growth of hemp, tobacco, cotton, and even the caſtor oil plant. And it is aſſerted on good authority, that, in Arabia, China, and Japan, where the modes of huſbandry have not undergone any material change for thouſands of years, they not only drill, but dibble corn of every deſcription. It is of courſe probable, that the drill method of huſbandry is of conſiderable antiquity, and that it was brought to Europe from ſome of the eaſtern nations.

But though this method of huſbandry obviouſly poſſeſſes many advantages over that which is generally employed by farmers, it is far from being in general uſe in this kingdom; the reaſon of which is ſuppoſed to proceed from the difficulty of making common labourers acquainted with the nature of the practice; the incorrectneſs of the machinery that is made uſe of in delivering the ſeed, and the expence which is neceſſary for the firſt undertaking of the buſineſs. Other cauſes have likewiſe a tendency to impede its advancement, ſuch as the introduction of it on land that is not in a proper ſtate of preparation for its reception, either in regard to quality or the nature of the tillage, and the neglecting in ſome meaſure the after-culture of the crops, upon which ſo much of its ſucceſs depends. The attempting too great ſavings in the quantity of ſeed employed, by ſowing too thinly in the drills, as well as at too great diſtances between the rows, has alſo in many inſtances operated much againſt it.

The ſoils that are moſt proper for this ſort of huſbandry, are all thoſe of the more light and friable kinds, which are not ſo ſtrong, heavy, or wet, as to prevent the working of the machinery which is neceſſary in executing the buſineſs. It can ſcarcely ever be had recourſe to with much advantage; except for particular ſorts of crops, on the ſtiff, heavy, wet, clayey ſoils, as the work muſt conſtantly be liable to be performed in an incomplete manner; nor even in ſuch as are of a very ſtony quality, as thoſe obſtructions will conſtantly be apt to derange the operations of the machines, and thereby render the ſowing irregular and improper.

But whatever the nature or quality of the ſoil may be on which this ſort of huſbandry is attempted, it ſhould conſtantly be brought into a fine ſtate of tilth by repeated ploughing, and other modes of pulverization, before the crops are put into the ground.

In doing which it will alſo be neceſſary to ſuit them, and the proportion of ſeed to the nature and quality of the land, and the diſtance of the rows to their growths; as well as to preſerve a continued attention to their after-culture while on the ground.

In the practice of this mode of culture different diſtances in the rows and intervals have been adviſed, as diſadvantages muſt obviouſly proceed from their being either too narrow or too large; in the former little benefit being capable of being derived in the cultivation of the crops after they have been depoſited in the ſoil; while in the latter there will be great loſs ſuſtained in the over quantity of land that is taken up. It is probable, that in regard to diſtances, as well as the modes of drilling, much muſt conſtantly depend on the ſtate and quality of the land.

Upon dry light ſoils, whether of the loamy, gravelly, or chalky kinds, which can be conſtantly ploughed and preſerved on the flat, as is the caſe in Eaſt Kent, narrow diſtances are ſuppoſed the moſt proper. But where ridging up is required, they ſhould be ſomewhat wider. It was found by actual trials that drilling three rows eleven or twelve inches aſunder, on three bout ridges, generally ſucceeded in a perfect manner. In this way, the three bouts conſtitute a ridge about four and a half feet in breadth; the three rows as juſt mentioned occupying two feet, and the horſe-hoe going on the ſide of each outſide row, at the diſtance of three inches, leaves the ridge two and a half feet broad, and the intervals between them nearly two feet. But it has been ſuggeſted, that, in theſe caſes, as the outſide rows conſtantly afford the ſtrongeſt and moſt healthy plants, two rows only, on two-bout ridges, would be equally productive, and leave the ground in a better ſtate of tilth. However this may be, the very wide intervals of the more early drill practice are to be diſcarded as highly improper in all crops of the grain kind, not only in conſequence of the great loſs of ground that muſt neceſſarily be ſuſtained by ſuch wide intervals; but becauſe the ſpaces between the rows, when much narrower, can, in the improved mode of horſe-hoeing, be ſtirred with equal correctneſs and facility.

In practiſing this ſyſtem of huſbandry, it has been hinted by an experienced cultivator, that, with regard to wheat and barley, the diſtance of the rows ſhould greatly depend on the quality of the ſoil. In caſes where it is poor, the ſpaces between the rows ſhould not be more than about eight inches; where of a medium quality about nine inches, and where rich, not more than ten inches. The quantity of ſeed being made to vary in the ſame way, from about nine pecks to eight and ſeven. And the depth of depoſiting it from two inches and a half to two inches.

In the extenſive experience of the late Mr. Cloſe, nine inches was the diſtance that anſwered beſt for white corn crops. See SEMINATION, and SOWING *of Grain.*

But for various ſorts of green crops, ſuch as thoſe of the potatoe, cabbage, rape, turnip, carrot, parſnip, bean, pea, tare, and other ſimilar kinds, much wider diſtances are required, as is ſufficiently ſhewn under the culture of theſe different deſcriptions of crops.

The great advantages of this method of huſbandry, are thoſe of its affording the means of diſtributing the ſeed with much greater correctneſs in regard to depth, as well as regularity in the rows, by which the growth of the crops is not only more uniform, but their after-culture capable of being more effectually executed, and at the ſame time ſome ſaving in ſeed effected. And as the ſeed grain in this way is neither too cloſely crowded together, nor too thinly ſcattered in the drills, there is leſs danger of injury in the weakneſs of the produce from the former cauſe, or of loſs from the too ſcanty number of ſtems in the latter, which is almoſt conſtantly the caſe in the common mode of management. Beſides, by the equality of the depth to which the ſeed is depoſited in this way, the crops become ripe in a more equal and uniform manner. Further benefits are likewiſe derived in different ways, by the frequent ſtirring and breaking down of the mould about the roots and ſtems of the plants, while the crops are upon the ground. By ſuch frequent turnings the ſoil becomes newly and fully aerated, in conſequence of which different nutritious matters are more abundantly formed and provided for the ſupport of the crops; and the earth at the ſame time rendered more eaſily penetrable by the ſuperficial roots of the grain, and its power of tillering increaſed by the mould being laid up to the joints of the ſtems, juſt above the ſurface of the land. There are alſo other ways in which benefit is derived in this mode of cultivation; as by the more effectual eradication of weeds that conſtantly takes place, the harveſting of the crops is more readily and certainly accompliſhed, and at leſs trouble and expence; while the land is left in a more mellow and fine ſtate for the production of future crops, as well as for the immediate putting in of ſucceeding ones. See HOEING.

HUSBANDRY, *Implements of*, the various ſorts of tools that become neceſſary in the cultivation and management of land, as thoſe of the tillage, dairy, and other kinds. See IMPLEMENTS *of Huſbandry.*

HUSBANDRY, *Virgilian*, a term uſed by authors to expreſs that ſort of huſbandry, the precepts of which are ſo beautifully delivered in Virgil's Georgics. The huſbandry in England is Virgilian in general, as is ſeen by the method of paring and burning the ſurface, of raftering or croſs-ploughing, and of the care in deſtroying weeds upon the ſame principle, and by much the ſame means. In thoſe parts of England along the ſouthern coaſt, where the Romans principally inhabited, not only the practice, but the expreſſions are in many reſpects the ſame with thoſe of the ancient Romans, many of the terms uſed by the ploughmen being of Latin origin, and the ſame with thoſe uſed by theſe people on the like occaſions. And on a ſtrict obſervation, more of Virgil's huſbandry is at this time practiſed in England than in Italy itſelf. This change in the Italian huſbandry is, however, much more to the credit of that people than the retaining the Virgilian ſcheme is to our's. Tull, who has eſtabliſhed a new method of huſbandry, obſerves that it is upon the whole ſo contradictory to this old plan, that it may be called the anti-Virgilian huſbandry; and adds, that no practice can be worſe than the Virgilian.

HUSBRECE, in our *Old Writers*, an offence now called burglary.

The word is Saxon, from *hus*, a *houſe*, and *brice*, a *breaking*. Blount, in voc.

HUSBY, in *Geography*, a town of Sweden, in Dalecarlia; nine miles N. of Hedemora.

HUSCANS, in our *Old Writers*, a ſort of boot or buſkin made of coarſe cloth, and worn over the ſtockings. We find them mentioned in the ſtat. 4 Edw. IV. cap. 7.

HUSET, in *Geography*, a town of Hungary; 24 miles E. of Munkacz.

HUSGABLE, HUSGABLUM, in our *Old Writers*, denotes houſe-rents, or ſome tax or tribute laid upon houſes.

HUSHING, in *Mining*, is applied, in Cornwall, to a mode of diſcovering float and ſhoad tin, or alluvial collections of tin-ore, by turning a ſtrong ſtream of water ſucceſſively over different parts of the ſurface, to waſh away all the vegetable ſoil and looſe earth. (William's Mineral Kingdom, vol. i. p. 313, 2d edit.) Around Merthyr Tydvil, and other places in South Wales, much of the iron ores are obtained by this deſtructive proceſs, equally depriving the ſides of hills of their ſoil, and covering valuable meadows with this earth and ſtones: many hundred acres of valuable meadows below Merthyr town have, within a few years paſt, been covered ſeveral feet deep with earth and ſtones, over which every flood of the river ſpreads and moves and diſturbs it, ſo that the whole width of the valley is without vegetation, and preſents a ſcene of devaſtation, nowhere elſe to be witneſſed, but on the ſand and beach of the flat ſhores of the ocean: already a ſtrong wall has been found neceſſary to confine the ſtream and this torrent of earth from overwhelming the lower part of the town, which is increaſingly in danger of the fate of Oſtia on the Tiber, if this deſtructive mode of diſpoſing of the rubbiſh from the iron-ſtone mines is ſuffered much longer to exiſt.

HUSK, among *Botaniſts*, the part which a flower grows out of. See GLUMA.

The huſks or cups of the flowers of plants are not ſo much regarded with a view to their medicinal virtues as they deſerve. Petiver, in the Philoſophical Tranſactions, ſpeaking of the virtues of the verticillate claſs of plants, among which are included the ſage, roſemary, and the like, obſerves that it is an erroneous, though general opinion, that the flowers of theſe plants contain their principal virtues, for that the huſks are the part in which it is lodged. For inſtance, in the roſemary, the fine ſcent of the Hungary-water is not in the flowers, but huſks; and the flowers alone, when clean picked from them, yield very little odour. The cup, in this and other plants of the ſame claſs, is the only part in which their viſcous and ſulphureous qualities are lodged, and that ſomething of this kind is depoſited particularly there, may be perceived by the touch and ſmell; for they appear moiſt, and feel clammy; and this clammy matter, when received upon the fingers, is of a very ſtrong and agreeable ſmell, much more ſo than the reſt of the plant.

HUSK denotes a diſeaſe of young bullocks. See COUGH.

HUSKS, *Foſſil*, in *Natural Hiſtory*. The huſks, ſhivers, juli or catkins, and other light parts of hazel, alder, willow, &c. are found in great quantities deep in the alluvial earth and peat, of wide and flat valleys. Parkinſon's Org. Rem. vol. i. p. 94.

HUSO Germanorum, in *Ichthyology*, the name of a large fiſh of the ſturgeon or acipenſer kind, without tubercles, caught in the Danube, Boriſthenes, and other large rivers, and paſſing at times into the ſea. It has a very long ſnout, and under it either four or eight beards ; it has one back-fin, which is placed near the tail, and two pair under the belly ; its general ſhape ſomewhat reſembles that of the pike, and its back is black and its belly yellow ; it has thirteen dorſal and forty-three caudal ſcales, and has cartilages inſtead of bones. It is caught in October and November, and in ſome places till January ; and great numbers of them are uſually brought to market together in thoſe months in the countries where they are caught. They always ſwim in ſhoals. It grows to twenty-four feet long, and weighs one, two, three, or even four hundred pounds. The drug called iſinglaſs, and the food called cavear, are prepared from this fiſh.

HUSS, John, in *Biography*. See Hussites.

HUSSARS, Huſſards, or *Huſſarts*, an order or ſpecies of ſoldiery in Poland and Hungary, commonly oppoſed to the Ottoman cavalry.

The huſſars are horſemen, whoſe uniform is a large furred cap, adorned with a cock's feather; thoſe of the officers with an eagle's or heron's; a very ſhort waiſtcoat with breeches and ſtockings in one piece : ſhort light boots ; and a doublet, having five rows of buttons, which hangs looſely on the left ſhoulder. Their arms are, a long crooked ſabre, light carbines, and piſtols. Before they begin an attack, they lay themſelves flat on the necks of their horſes ; but being come within piſtol ſhot of the enemy, they raiſe themſelves with ſuch quickneſs, and fall on with ſuch alertneſs, that it is very difficult for the troops they oppoſe to preſerve their order. In a retreat no other cavalry can pretend to follow them ; as they leap over ditches, and ſwim through rivers with a ſurpriſing facility. Moſt of the princes on the continent have troops under this name.

HUSSEIANABAD, in *Geography*, a town of Aſiatic Turkey, in the government of Sivas ; 42 miles S.W. of Amaſieh.

HUSSEINGUNGE, a town of Hindooſtan, in Rohilcund, on the Ganges ; 26 miles W.S.W. of Budayoon.

HUSSES, a town of Arabia, in Yemen ; ſeven miles E. of Sana.

HUSSEY, Giles, in *Biography*, a painter, born of a good family, in Dorſetſhire. He was the pupil of Richardſon in England, and afterwards of Damini and Ercole Lelli, in Italy, where, during a ſtay of ſome years at Rome and Bologna, he raiſed expectations which were grievouſly diſappointed on his return. Diſdaining portraiture, diſcountenanced in hiſtory, Huſſey was reduced to the ſolitary patronage of the then duke of Northumberland, who offered to receive him into his family, and give him a handſome penſion, with the attendance of a ſervant, upon the condition that he ſhould employ his talents chiefly, though not excluſively, for the duke. This offer he rejected, becauſe the duke did not comply with his requeſt of keeping a prieſt in the houſe for him. Huſſey, a bigot in religion, was attached to the creed of Rome; but had he not been ſo, commiſſions and patronage, almoſt confined to drawing copies, even from the antique, was certainly ſufficiently provoking for a man of an original turn of mind to be rejected. He afterwards became exceedingly diſtreſſed for the means of living ; but upon making his wants known to his brother, who had ſucceeded to the family eſtate, he was treated in the moſt kind manner ; and, after his generous brother's deceaſe, enjoyed himſelf the eſtate for ſome years, after which he diſpoſed of it, and retired to Beaſton, in Devonſhire, where he died, in 1788, at the age of 71. He was a complete inſtance of the danger of philoſophizing too much upon art, which requires more practice and good ſenſe than over-refined ſyſtems of thinking. He ſpent the beſt part of his life in reducing, uſeleſsly, the proportions of the human form, in all its various actions, to the muſical ſcale of concords, and produced fanciful analogies which no painter, whoſe mind is capable of graſping the true beauties of art, will ſtay, or ought to ſtay, to conſider. Thus he loſt the time which ſhould have been devoted to the practice of art, and when the hand and the imagination were required, both were found deficient. But he was an ingenious and highly reſpectable character.

HUSSINGABAD, in *Geography*, a town of Hindooſtan, in the circar of Hindia, on the S. bank of the Nerbuddah river ; 120 miles N.E. of Burhanpour. N. lat. 22° 42′ 30′. E. long. 77° 54′.

HUSSITES, in *Eccleſiaſtical Hiſtory*, a party of reformers, the followers of John Huſs.

John Huſs, from whom the Huſſites take their name, was born in a little village, called "Huſſinez," in Bohemia, about the year 1376, and lived at Prague, in the univerſity of which he was educated, in the higheſt reputation, both on account of the ſanctity of his manners, and the purity of his doctrine. In the year 1396 he took the degree of M. A., and ſoon after that of B. D. In 1400 his abilities and piety had ſo far recommended him, that he was choſen confeſſor to the queen, and eight years after he was elected rector of the univerſity. He was diſtinguiſhed by his uncommon erudition and eloquence, and performed at the ſame time the functions of profeſſor of divinity in the univerſity, and of ordinary paſtor in the church of that city. During the courſe of theſe honours he obtained a benefice amply endowed by John Mulheym, a perſon of large fortune at Prague. By the marriage of Ann, ſiſter of the king of Bohemia, with Richard II. of England, in 1381, a communication and intercourſe were opened between England and Bohemia ; and a young Bohemian nobleman, who had finiſhed his ſtudies in the univerſity of Prague, ſpent ſome time at Oxford ; and on his return put into the hands of Huſs the writings of Wickliff. He adopted the ſentiments of Wickliff, and the Waldenſes ; and in the year 1407 began openly to oppoſe and preach againſt divers errors in doctrine, as well as corruptions in point of diſcipline, then reigning in the church. Huſs likewiſe endeavoured to the utmoſt of his power to withdraw the univerſity of Prague from the juriſdiction of Gregory XII., whom the kingdom of Bohemia had hitherto acknowledged as the true and lawful head of the church. This occaſioned a violent quarrel between the incenſed archbiſhop of Prague, who was an illiterate man, to ſuch a degree that he was called "Alphabetarius," or the A B C doctor, and who, without ſufficient authority from the pope, had committed the works of Wickliff to the flames ; and the zealous reformer, which the latter inflamed and augmented, from day to day, by his pathetic exclamations againſt the court of Rome, and the corruptions that prevailed among the ſacerdotal order. The archbiſhop, by his own authority, prohibited Huſs from preaching in his chapel of Bethelem, to which he had been appointed by Mulheym ; upon which Huſs, as a member of the univerſity, which held immediately of the Roman ſee, appealed to the pope.

There were other circumſtances that contributed to inflame the reſentment of the clergy againſt him. He adopted the philoſophical opinions of the Realiſts, and vehemently oppoſed and even perſecuted the Nominaliſts, whoſe number and influence were conſiderable in the univerſity of Prague. He alſo multiplied the number of his enemies in the year 1408, by procuring, through his great credit, a ſentence in favour of the Bohemians, who diſputed with the Germans concerning the number of ſuffrages which their reſpective nations were entitled to in all matters that were carried by election in this univerſity. In conſequence of a decree, obtained in favour of the former, which reſtored them to their conſtitutional right of three ſuffrages, uſurped by the latter, the Germans withdrew from Prague, and in the year 1409, founded a new academy at Leipſick. This event no ſooner happened than Huſs began to inveigh with greater freedom than he had before done againſt the vices and corruptions of the clergy, and to recommend, in a public manner, the writings and opinions of Wickliff, as far as they related to the papal hierarchy, the deſpotiſm of the court of Rome, and the corruption of the clergy. Hence an accuſation was brought againſt him, in the year 1410, before the tribunal of John XXIII. by whom he was ſolemnly expelled from the communion of the church. Notwithſtanding this ſentence of excommunication, he proceeded to expoſe the Romiſh church with a fortitude and zeal that were almoſt univerſally applauded.

Some tumults having taken place among the followers of Huſs, in which he had no concern, and which, indeed, he lamented, and endeavoured to ſuppreſs, Winceſlaus, king of Bohemia, baniſhed him from Prague, upon which he retired to his native place, and lived there unmoleſted. During his retreat at Huſſinez he compoſed his celebrated treatiſe "Upon the Church;" and here he alſo dated a paper entitled "The Six Errors;" which he fixed on the gates of the chapel at Bethelem. It was levelled againſt indulgences, the abuſe of excommunication, believing in the pope, the unlimited obedience required by the ſee of Rome, ſimony, and making the body of Chriſt in the maſs.

This eminent man, whoſe piety was equally ſincere and fervent, though his zeal was perhaps too violent, and his prudence not always circumſpect, was ſummoned to appear before the general council of Conſtance, convened in the year 1414; whither princes and prelates, clergy and laity, regulars and ſeculars, flocked together from all parts of Europe. Secured, as he apprehended, from the rage of his enemies by the ſafe conduct granted him by the emperor Sigiſmund, for his journey to Conſtance, his reſidence in that place, and his return to his own country; John Huſs obeyed the order of the council, and appeared before it, to demonſtrate his innocence, and to prove that the charge of his having deſerted the church of Rome was entirely groundleſs. However, his enemies ſo far prevailed, that, by the moſt ſcandalous breach of public faith, he was caſt into priſon, declared a heretic becauſe he refuſed to plead guilty againſt the dictates of his conſcience, in obedience to the council, and burnt alive July 6th, 1415; a puniſhment which he endured with unparalleled magnanimity and reſignation.

We ſhall here ſubjoin ſome farther intereſting particulars relating to the cloſe of this eminent reformer's life. Whilſt his fate was in ſuſpence, his friends in Bohemia were ſufficiently active; and at length a petition was ſent through the kingdom, and ſubſcribed by almoſt the whole body of the Bohemian nobility and gentry. It was dated in May, 1415, and was addreſſed to the council of Conſtance. The firſt petition, complaining of the treatment which he had received, ſoliciting that a ſpeedy end might be put to his ſufferings by allowing him an audience, having been diſregarded, a ſecond and a third were preſented, urging his releaſe, and offering any ſecurity for his appearance. The laſt petition to the council was accompanied by another to the emperor, preſſing upon him a regard to his honour ſolemnly engaged for the ſecurity of Huſs, and imploring his protection and intereſt with the council. The emperor in this caſe was undoubtedly chargeable with a moſt notorious breach of faith; though the blame is generally laid, and with ſome reaſons, upon the council, who directed his conſcience. Huſs was at length, after repeated delays, ſummoned to appear before the council; but as ſoon as he began to reply to the firſt charge a moſt indecent and tumultuous clamour began; and the diſorder and noiſe were ſo great that he could not proceed. "In this place," ſaid Huſs, who was the moſt diſpaſſionate of men, looking round him, "I hoped to have found a different treatment." His rebuke increaſed the clamour; and without attempting any further defence he held his peace. "He was now confounded," exclaimed the tumultuous aſſembly with ſeeming triumph, "ſilenced, by confeſſion guilty." On the next day the council reſumed its meeting, and the emperor Sigiſmund, diſguſted and offended at its preceding conduct, determined to maintain a more decent behaviour. The firſt charge exhibited againſt Huſs was his denying the real preſence. To which he had only to anſwer, that he had always held the true Catholic doctrine, which was a known fact among his friends, for he had ever believed tranſubſtantiation. He was next charged in general with maintaining the pernicious errors of Wickliff. To which he anſwered, that he had never held any error which he knew to be ſuch; and that he deſired nothing more than to be convinced of any errors into which he might have inadvertently fallen. Wickliff's doctrine of tythes was objected to him, which he owned he knew not how to refute. He had alſo expreſſed himſelf againſt burning the books of Wickliff, and he acknowledged that he had ſpoken againſt burning them in the manner practiſed by the archbiſhop of Prague, who condemned them to the flames without examining them. He was further charged with ſaying, that he wiſhed his ſoul in the ſame place where Wickliff's was. He owned having uſed this expreſſion, which afforded matter of great mirth to his hearers. He was afterwards charged with ſedition, in exciting the people to take arms againſt their ſovereign, from which charge he entirely exculpated himſelf. After the diſcuſſion of ſome other trifling particulars the council roſe, and Huſs was carried back to priſon. In his way thither the emperor turned to him and told him, that he had given him his ſafe conduct, which he found was more than was well in his power, that he might have an opportunity to vindicate his character. "But, depend upon it," ſaid he, "if you continue obſtinate, I will make a fire with my own hands to burn you rather than you ſhall eſcape." To which addreſs Huſs replied, that he could not charge himſelf with holding any opinions obſtinately, that he came thither with joy rather than with reluctance; that if any doctrine better than his own could be laid before him in that learned aſſembly, he might ſee his error and embrace the truth. Upon again appearing before the council, not fewer than 40 articles were brought againſt him. Of theſe the chief were extracted from his books, and ſome of them by very unfair deduction.

The following opinions, among many others, which gave offence, were eſteemed moſt criminal: "That there was no abſolute neceſſity for a viſible head of the church; that the church was better governed in apoſtolic times without one; that the title of holineſs was improperly given to man; that a wicked pope could not poſſibly be the vicar of Chriſt, that he denied the very authority on which he pretended to act; that liberty of conſcience was every one's natural right; that eccleſiaſtical cenſures, eſpecially ſuch as touched the life of man, had no foundation in ſcripture; that eccleſiaſtical obedience ſhould have its limits; that no excommunication ſhould deter the prieſt from his duty; that preaching was as much required from the miniſter of religion, as alms-giving from the man of ability; and that neither of them could hide his talent in the earth without incurring the divine diſpleaſure." Paletz and the cardinal of Cambray were the chief managers of this examination.

Beſides theſe opinions, moſt of which were proved and acknowledged, he threw out many things in the courſe of his examination which were eagerly laid hold on; particularly againſt the ſcandalous lives of the clergy of every denomination; the open ſimony practiſed among them, their luxury, lewdneſs, and ignorance.

Huſs having now been examined on all thoſe articles which the niceſt ſcrutiny into his books, and the moſt exact remembrance of his words could furniſh, the cardinal of Cambray thus accoſted him: "Your guilt hath now been laid before this auguſt aſſembly with its full force of evidence: I am obliged, therefore, to take upon me the diſagreeable taſk of informing you, that only this alternative is offered to you: either to abjure theſe damnable errors, and ſubmit yourſelf to the council; in which caſe theſe reverend fathers will deal as gently with you as poſſible, or to abide the ſevere conſequence of an obſtinate adherence to them." To this Huſs anſwered, "that he had nothing to ſay, but what he had often ſaid before; that he came there not to defend any opinion obſtinately; but with an earneſt deſire to ſee his errors and to amend them; that many opinions had been laid to his charge, ſome of which he had never maintained, and others, which he had maintained, were not yet confuted; that as in the firſt caſe, he thought it abſurd to abjure opinions which were never his; ſo in the ſecond, he was determined to ſubſcribe nothing againſt his conſcience."

The emperor told him, he ſaw no difficulty in his renouncing errors which he had never held. "For myſelf," ſaid he, "I am, at this moment, ready to renounce every hereſy that hath ever exiſted in the Chriſtian church; does it therefore follow that I have been an heretic?"

Huſs reſpectfully made a diſtinction between abjuring errors in general, and abjuring errors which had been falſely imputed; and prayed the council to hear him upon thoſe points which to them appeared erroneous; were it only to convince them that he had ſomething to ſay for the opinions he maintained. To this requeſt, however, the council paid no attention.

Here Paletz and De Caſſis took an opportunity to exculpate themſelves of any appearance of malice in this diſagreeable proſecution. They both entered upon the taſk with great unwillingneſs, and had done nothing but what their duty required. To this the cardinal of Cambray added, that he could ſufficiently exculpate them on that head. They had behaved, he ſaid, with great humanity; and to his knowledge might have acted a much ſeverer part.

The emperor obſerving, that every thing, which the cauſe would bear, had now been offered, aroſe from his ſeat, and thus addreſſed himſelf to the council:

"You have now heard, reverend fathers, an ample detail of hereſies, not only proved, but confeſſed; each of which unqueſtionably, in my judgment, deſerveth death. If, therefore, the heretic continueth obſtinate in the maintenance of his opinions, he muſt certainly die. And if he ſhould even abjure them, I ſhould by no means think it proper to ſend him again into Bohemia; where new opportunities would give him new ſpirits, and raiſe a ſecond commotion worſe than the firſt. As to the fate, however, of this unhappy man, be that as it may hereafter be determined; at preſent, let me only add, that an authentic copy of the condemned articles ſhould be ſent into Bohemia, as a ground-work for the clergy there to proceed on; that hereſy may at length be rooted up, and peace reſtored to that diſtracted country."

The emperor having finiſhed his ſpeech, it was agreed in the council to allow Huſs a month longer to give in his final anſwer. With the utmoſt difficulty he had ſupported himſelf through this ſevere trial. Beſides the malice of his enemies, he had upon him the paroxyſm of a very violent diſorder. On this laſt day he was ſcarcely able to walk, when he was led from the council. His conſolation in theſe circumſtances was a cold and hungry dungeon, into which he was inhumanly thruſt.

His friend, the baron, attended him even hither, and with every inſtance of endearing tenderneſs, endeavoured to ſupport him. The ſuffering martyr wrung his hand; and looking round the horrid ſcene, earneſtly cried out, "Good God! this is friendſhip indeed!" His keepers ſoon after put him in irons; and none but ſuch as were licenſed by the council were allowed to ſee him.

The generous nature of Sigiſmund, though he was not unverſed in the artifices of the cabinet, abhorred a practiſed fraud. The affair of Huſs, amidſt all the caſuiſtry of the council, gave him keen diſtreſs; and he wiſhed for nothing more ardently than to rid his hands of it with honour. On the other ſide, his vanity and his intereſt engaged him to appear the defender of the Catholic cauſe in Germany. If he ſuffered Huſs to be put to death one part of the world would queſtion his honour; if he interfered with a high hand in preſerving him, the other part would queſtion his religion. The perplexity was great; from which he thought nothing could relieve him but the recantation of Huſs.

To obtain this he tried every means in his power. He had already endeavoured to intimidate him with high language which he had uſed, both in the council and in other places. But this was ineffectual. He had now recourſe to ſoothing arts. The form of a recantation was offered; in which Huſs was required only to renounce thoſe hereſies which had been fairly proved. But he continued ſtill inflexible. Several deputations were afterwards ſent to him in priſon; and biſhops, cardinals, and princes in vain tried their eloquence to perſuade him.

Sigiſmund, ſeeing the concluſion to which this fatal affair was approaching, might probably have intereſted himſelf thus far, as thinking he had been too condeſcending to the council. The flame alſo, which he ſaw kindling in Bohemia, where he had high expectations, and was willing to preſerve an intereſt, might alarm him greatly. He had gone too far, however, to recede, and knew not how to take Huſs out of the hands of the council, into which he had given him with ſo much zeal and devotion.

In the mean time Huſs remained maſter of his fate, and ſhewed a conſtancy which ſcarce any age hath excelled. He amuſed himſelf, while it was permitted, with writing letters to his friends, which were privately conveyed by the Bohemian lords who viſited him in priſon. Many of theſe letters are ſtill extant. The following, which is the ſubſtance of one, of them, may be a teſt of that compoſed piety and rational frame of mind which ſupported him in all his ſufferings.

"My dear friends, let me take this laſt opportunity of exhorting you to truſt in nothing here, but to give yourſelves up entirely to the ſervice of God. Well am I authorized to warn you not to truſt in princes, nor in any child of man, for there is no help in them. God only remaineth ſtedfaſt. What *he* promiſeth, he will undoubtedly perform. For myſelf, on his gracious promiſe I reſt. Having endeavoured to be his faithful ſervant, I fear not being deſerted by him. Where I am, ſays the gracious Promiſer, there ſhall my ſervant be. May the God of heaven preſerve you!—This is probably the laſt letter I ſhall be enabled to write. I have reaſon to believe I ſhall be called upon to-morrow to anſwer with my life. Sigiſmund hath in all things acted deceitfully. I pray God forgive him! You have heard in what ſevere language he hath ſpoken of me."

The month, which had been allowed by the council, being now expired, a deputation of four biſhops came to receive his laſt anſwer, which was given in the ſame language as before.

The ſixth of July was appointed for his condemnation, the ſcene of which was opened with extraordinary pomp. In the morning of that day, the biſhops and temporal lords of the council, each in his robes, aſſembled in the great church at Conſtance. The emperor preſided in a chair of ſtate. When all were ſeated, Huſs was brought in by a guard. In the middle of the church a ſcaffold had been erected; near which a table was placed, covered with the veſtments of a Romiſh prieſt.

After a ſermon, in which the preacher earneſtly exhorted his hearers to *cut off the man of ſin*, the proceedings began. The articles alleged againſt him were read aloud; as well thoſe, which he had, as thoſe which he had not allowed. This treatment Huſs oppoſed greatly; and would gladly, for his character's ſake, have made a diſtinction; but finding all endeavours of this kind ineffectual, and being indeed plainly told by the cardinal of Cambray, that no farther opportunity of anſwering for himſelf ſhould be allowed, he deſiſted; and falling on his knees, in a pathetic ejaculation, commended his cauſe to Chriſt.

The articles againſt him, as form required, having been recited, the ſentence of his condemnation was read. The inſtrument is tedious: in ſubſtance it runs, "That John Huſs, being a diſciple of Wickliff, of damnable memory, whoſe life he had defended, and whoſe doctrines he had maintained, is adjudged by the council of Conſtance (his tenets having been firſt condemned) to be an obſtinate heretic; and as ſuch, to be degraded from the office of a prieſt; and cut off from the holy church."

His ſentence having being thus pronounced, he was ordered to put on the prieſt's veſtments, and aſcend the ſcaffold, according to form, where he might ſpeak to the people; and, it was hoped, might ſtill have the grace to retract his errors. But Huſs contented himſelf with ſaying once more, that he knew of no errors which he had to retract; that none had been proved upon him; and that he would not injure the doctrine he had taught, nor the conſciences of thoſe who had heard him, by aſcribing to himſelf errors, of which he had never been convinced.

When he came down from the ſcaffold, he was received by ſeven biſhops, who were commiſſioned to degrade him. The ceremonies of this buſineſs exhibited a very unchriſtian ſcene. The biſhops, forming a circle round him, each adding a curſe took off a part of his attire. When they had thus ſtripped him of his ſacerdotal veſtments, they proceeded to eraſe his tonſure, which they did by clipping it into the form of a croſs. Some writers ſay, that in doing this, they even tore and mangled his head; but ſuch ſtories are unqueſtionably the exaggeration of Proteſtant zeal. Their laſt act was to adorn him with a large paper cap; on which various and horrid forms of devils were painted. This cap one of the biſhops put upon his head, with this unchriſtian ſpeech, "Hereby we commit thy ſoul to the devil." Huſs ſmiling, obſerved, "It was leſs painful than a crown of thorns."

The ceremony of his degradation being thus over, the biſhops preſented him to the emperor. They had now done, they told him, all the church allowed. What remained was of civil authority. Sigiſmund ordered the duke of Bavaria to receive him, who immediately gave him into the hands of an officer. This perſon had orders to ſee him burned, with every thing he had about him.

At the gate of the church a guard of 800 men waited to conduct him to the place of execution. He was carried firſt to the gate of the epiſcopal palace, where a pile of wood being kindled, his books were burned before his face. Huſs ſmiled at the indignity.

When he came to the ſtake, he was allowed ſome time for devotion; which he performed in ſo animated a manner, that many of the ſpectators, who came there ſufficiently prejudiced againſt him, cried out, "What this man hath ſaid within doors we know not, but ſurely he prayeth like a Chriſtian."

As he was preparing for the ſtake, he was aſked whether he choſe a confeſſor? He anſwered in the affirmative; and a prieſt was called. The deſign was to draw from him a retractation, without which, the prieſt ſaid, he durſt not confeſs him. "If that be your reſolution, ſaid Huſs, I muſt die without confeſſion: I truſt in God, I have no mortal ſin to anſwer for."

He was then tied to the ſtake with wet cords, and faſtened by a chain round his body. As the executioners were beginning to pile the faggots around him, a voice from the croud was heard, "Turn him from the eaſt; turn him from the eaſt." It ſeemed like a voice from heaven. They who conducted the execution, ſtruck at once with the impropriety, or rather profaneneſs of what they had done, gave immediate orders to have him turned due weſt.

Before fire was brought, the duke of Bavaria rode up, and exhorted him once more to retract his errors. But he ſtill continued firm. "I have no errors," ſaid he, "to retract; I endeavoured to preach Chriſt with apoſtolic plainneſs; and I am now prepared to ſeal my doctrine with my blood."

The faggots being lighted, he recommended himſelf into the hands of God, and began a hymn, which he continued ſinging, till the wind drove the flame and ſmoke into his face. For ſome time he was inviſible. When the rage of the fire abated, his body, half conſumed, appeared hanging over the chain; which, together with the poſt, were thrown down, and a new pile heaped over them. The malice of his enemies purſued his very remains. His aſhes were gathered up and ſcattered in the Rhine, that the very earth might not feel the load of ſuch enormous guilt.

From this view of the life and ſufferings of Huſs, it is hard to ſay what were the real grounds of the animoſity he had raiſed. His creed unqueſtionably was far from being exactly orthodox; yet it is plain how very ill able his adverſaries were to gather from it offenſive matter enough for an accuſation. He believed tranſubſtantiation; he allowed the adoration of ſaints; he practiſed confeſſion; he ſpoke cautiouſly of tradition, and reverently of the ſeven ſacraments; and whatever latitude he might give himſelf on any of theſe articles, it was not more than had been often taken, inoffenſively taken, by Gerſon, Zabarelle, and other ſpirited divines of the Romiſh church.

Beſides, the great pains the council took to avoid a public queſtion, and the great confidence with which Huſs deſired one, are preſumptions very ſtrong in his favour.

It is the opinion of Lenfant, that the great cauſe of his condemnation was his introducing Wickliff's doctrine into Bohemia; and chiefly perhaps that offenſive part of it which ſtruck at the temporalities of the clergy. And, indeed, this is extremely probable from the whole conduct of the council; for though it is apparent, that he never adopted the entire ſyſtem of that reformer; yet his principles, it is certain, would have led him much farther than they had hitherto done; and the fathers of the council being aware of this, ſeem to have determined, though at the expence of juſtice, to cruſh an evil in its origin, which appeared teeming with ſo much miſchief.

Beſides this, there ſeems to have been another cauſe for that unabated prejudice which ran ſo high againſt him. The warmth with which he treated the corruptions of the clergy, and the uſurpations of the church of Rome, was a crime never to be forgiven by the eccleſiaſtics of thoſe times; and added the keeneſt edge to their reſentment. But as this was an unpopular cauſe to appear in, it is plain they wanted to have it believed their reſentment aroſe upon another account. This ſeems to have been the foundation of a ſpeech, attributed by Varillas to cardinal Perron; "My learned friends," (he would ſay) "you cannot employ your time worſe than in giving the world any account of the affairs of Huſs."

His life, however, was the ſevereſt ſatire upon the clergy. It was a mirror which reflected their diſtorted features. In him they ſaw the true eccleſiaſtic and the real Chriſtian, characters ſo different from their own. Gentle and condeſcending to the opinions of others, this amiable pattern of virtue was ſtrict only in his own principles. The opinions indeed of men were leſs his concern than their practice. His great conteſt was with vice; and he treated the miniſters of religion with freedom, only as he thought their example encouraged, rather than checked, that licence which prevailed. The great lines in his character were piety and fortitude. His piety was calm, rational, and manly; his fortitude nothing human could daunt. The former was free from enthuſiaſm; the latter from weakneſs. He was in every reſpect an apoſtolical man. "From his infancy," (ſays the univerſity of Prague in a voluntary teſtimonial,) he was of ſuch excellent morals, that during his ſtay here, we may venture to challenge any one to produce a ſingle fault againſt him.

As to his parts and acquirements, he ſeems to have been above mediocrity; and yet not in the higheſt form in reſpect of either. A vein of good ſenſe runs through all his writings, but their diſtinguiſhing characteriſtics are ſimplicity and piety.

To preſerve the memory of this excellent man, the ſixth of July was, for many years, held ſacred among the Bohemians. A ſervice, adapted to the day, was appointed to be read in all churches; and inſtead of a ſermon, an oration was ſpoken in commendation of their martyr, in which the noble ſtand he made againſt eccleſiaſtical tyranny was commemorated, and his example propoſed as a pattern to all Chriſtians.

In ſome places large fires were lighted in the evening upon the mountains, to preſerve the memory of his ſufferings; round which the country-people would aſſemble, and ſing hymns in his praiſe.

A very remarkable medal was ſtruck in honour of him, on which was repreſented his effigies, with this inſcription, CENTUM REVOLUTIS ANNIS DEO RESPONDEBITIS ET MIHI. Theſe words are ſaid to have been ſpoken by him to his adverſaries a little before his execution; and were afterwards applied by the zealots of his ſect as prophetic of Luther, who lived about an hundred years after him. The ſtory carries with it an air of irrational zeal, and ſeems calculated only for the credulous.

The ſame unhappy fate was borne by Jerome of Prague, his intimate companion, who attended the council, in order to ſupport his perſecuted friend. Jerome, indeed, was terrified into temporary ſubmiſſion; but he afterwards reſumed his fortitude, and maintained the opinions, which he had for a while deſerted through fear, in the flames, in which he expired the 30th of May, 1416. See JEROME.

The diſciples of Huſs adhered to their maſter's doctrine after his death with a zeal which broke out into an open war, that was carried on with the moſt ſavage and unparalleled barbarity. John Ziſka, a Bohemian knight, in 1420, put himſelf at the head of the Huſſites, who were now become a very conſiderable party, and threw off the deſpotic yoke of Sigiſmund, who had treated their brethren in the moſt barbarous manner. Ziſka was ſucceeded by Procopius, in the year 1424. The acts of barbarity that were committed on both ſides were ſhocking and horrible, beyond expreſſion; for notwithſtanding the irreconcileable oppoſition between the religious ſentiments of the contending parties, they both agreed in this one horrible principle, that it was innocent and lawful to perſecute and extirpate with fire and ſword the enemies of the true religion; and ſuch they reciprocally appeared to each other. Theſe commotions in a great meaſure ſubſided by the interference of the council of Baſil, in the year 1433.

The Huſſites, who were divided into two parties, *viz.* the Calixtines and Taborites, ſpread over all Bohemia and Hungary, and even Sileſia and Poland; and there are ſome remains of them ſtill ſubſiſting in all thoſe parts. Moſheim's Eccl. Hiſt. vol. iii. p. 406—412, 446—448, &c. Eng. ed. 8vo. 1790. Gilpin's Lives.—Life of John Huſs.

HUSSUNABAD, in *Geography*, a town of Bengal; 15 miles W. of Dacca.

HUSSUN-ABDAL, a town of Hindooſtan, in Lahore, 130 miles N. W. of Lahore. N. lat. 33°. E. long. 71° 45′.

HUSTINGS. See COURT *of Huſtings*.

HUSUM, in *Geography*, a ſea-port town of Denmark, on the W. coaſt of the duchy of Sleſwick, conſtituted a city in the year 1608, formerly famous for exporting great quantities of malt. It was alſo famous for the oyſter trade. The chief commerce at preſent conſiſts in beer, cattle, and horſes; 18 miles W. of Sleſwick. N. lat. 54° 32′. E. long. 9° 6′.

HUSWA, a town of Hindooſtan; 20 miles N.W. of Allahabad.

HUT, or HUTT, from the Saxon *hutte*, a ſmall cottage or hovel.

The word is alſo uſed for the ſoldiers' lodges in the field; otherwiſe called barracks or caſerns.

HUT, in *Rural Economy*, the common name of a low ſort of building of the cottage kind generally conſtructed of an earthy ſort of material, ſuch as ſtrong loamy clay, &c. A number of huts of this deſcription have within theſe few years been built on the borders of the South Eſk river in Scotland, which have a very neat and rural appearance, affording the idea, at a diſtance, of their being formed of a kind of brown brick-work.

In this caſe the compoſition of the materials which are employed is a ſort of muddy clay blended with the roots of plants of the aquatic kind, which are dug from out of the flood mark of the river, in ſuch ſizes and ſhapes as may be ſuitable for the purpoſe that is intended. The pieces or peats, as they are there called, are generally cut out in the form of bricks, but ſomewhat larger, being prepared in every reſpect in the manner of peat-fuel. It is uſual, in ſome caſes, to build theſe huts with lime-mortar, but more commonly with clay only.

Theſe huts are uſually preferred by the cottagers to thoſe which are built of ſtone, being warmer, and not much leſs durable.

It ſeems not improbable but that a ſimilar ſort of material for building this ſort of cottages may be met with in many ſituations where it has not yet been diſcovered, and be made uſe of in this way as well as for fences of the wall kind. See Cottage.

HUTA, a town of Lithuania, in the palatinate of Novogrodek; 40 miles E.N.E. of Novogrodek.

HUTCH, among *Farmers*, denotes a veſſel or particular place in which to lay corn; alſo, a kind of hollow trap for the taking of weaſels or other vermin alive; and it alſo ſignifies a ſort of caſe, formed of boards and ſlips of wood, opening in front, and divided within for keeping and breeding rabbits.

HUTCHESON, Francis, in *Biography*, an elegant writer and ingenious philoſopher, ſon of a diſſenting miniſter in the north of Ireland, was born on the eighth of Auguſt, 1694. After receiving a proper education at a grammar ſchool, he was ſent to an academy to begin his philoſophical courſe. In 1710 he was entered a ſtudent at the univerſity of Glaſgow, in Scotland, where he renewed his application to the ſtudy of the languages, but chiefly devoted himſelf to the divinity courſe. After ſpending ſix years in the univerſity of Glaſgow, he returned to his native country, and undertook the care of an academy at Dublin. Scarcely had he fixed himſelf in that city, when his accompliſhments and talents attracted the general notice of perſons of all ranks who had any taſte for literature. Lord viſcount Moleſworth took much delight in his converſation, and is ſaid to have aſſiſted him with his criticiſms and obſervations upon his "Enquiry into the Ideas of Beauty and Virtue," before it was committed to the preſs. He received a ſimilar favour from Dr. Synge, lord biſhop of Elphin, with whom he lived in habits of great friendſhip. The firſt edition of this work made its appearance anonymouſly, but its great merit did not ſuffer the author to remain long concealed. Lord Granville, the lord lieutenant, ſent his ſecretary to enquire at the bookſellers for the author, and when he could not learn his name, he left a letter to be conveyed to him, in conſequence of which he ſoon became acquainted with his excellency, and was ever after treated by him with diſtinguiſhed marks of familiarity and eſteem. From this time his acquaintance began to be ſtill more courted by men of diſtinction, either for ſtation or literature; among theſe was the celebrated archbiſhop King, who ſcreened him from two attempts made to proſecute him, for venturing to take upon himſelf the education of youth without having firſt ſubſcribed the eccleſiaſtical canons. In the year 1728, Mr. Hutcheſon publiſhed "A Treatiſe on the Paſſions." Having conducted his private academy in Dublin for ſeveral years with reputation and ſucceſs, he was invited into Scotland in 1729, to fill the chair of profeſſor of philoſophy in the univerſity of Glaſgow. Here he ſpent the remainder of his life, in a manner highly honourable to himſelf and uſeful to the univerſity of which he was a member. About this time the degree of doctor of laws was conferred upon him. At Glaſgow his time was divided between his ſtudies and the duties of his office. He was in every reſpect a valuable member of the univerſity, his abilities qualifying him, and his zeal prompting him, on all occaſions, to promote its civil and literary intereſts. His conſtitution ſeemed to promiſe his friends a long enjoyment of his valuable life, but a ſudden attack terminated it in 1747, in the 53d year of his age. His ſon publiſhed, from the original MS. of his father, a "Syſtem of Moral Philoſophy," in 2 vols. 4to. In this work the author endeavours to unfold the principles of the human mind, as united in a moral conſtitution, and from thence to point out the origin of our ideas of moral good and evil, and of our ſenſe of duty, or moral obligation; he next enquires what muſt be the ſupreme happineſs of a ſpecies conſtituted as mankind are, after which he deduces the particular laws of nature, or rules neceſſary to be obſerved for promoting the general good in our common intercourſe with one another as members of ſociety. Dr. Hutcheſon was of that claſs of philoſophers, who deduce all moral ideas from what they call a moral ſenſe, implanted in our natures, or an inſtinct like that of ſelf preſervation, which, independently of any arguments taken from the reaſonableneſs and advantages of any action, leads us to perform it ourſelves, or to approve it when performed by others. This moral ſenſe they maintain to be the very foundation of virtue. Dr. Hutcheſon was a man of conſiderable and various learning. He was not only acquainted with thoſe ſubjects moſt intimately acquainted with his profeſſion, but was a good mathematician and natural philoſopher; and was deſirous of applying all his knowledge to the grand purpoſe of eſtabliſhing the truths of the exiſtence, the perfections and government of God.

HUTCHINS, John, was born in 1698, at Bradford-Peverell, in Dorſetſhire, and educated at Baliol-college, Oxford, for the church. He took orders, and was preſented ſucceſſively to different livings, the laſt of which was the rectory of the church of the Holy Trinity, at Wareham. He died in June 1773. He was author of the Hiſtory and Antiquities of the County of Dorſet, which he was nearly forty years in compiling, and which, though he lived to ſee it put to preſs, was not publiſhed till 1774, when it was given to the world for the benefit of his widow and children. It was comprized in two volumes folio, and is adorned with many plates contributed by the patrons of the work.

HUTCHINSONIANS in *Eccleſiaſtical Hiſtory*, a kind of cabaliſtic ſect, that ſprung up in this country towards the beginning of the laſt century, and that derived its name from John Hutchinſon, who was born in Yorkſhire, A. D. 1674. Having been educated in his father's houſe, with a view to the office of ſteward to ſome gentleman or nobleman, he was advanced at an early period of life to this ſtation in the ſervice of the duke of Somerſet; and his buſineſs calling him to London about the year 1700, he became acquainted with Dr. Woodward, who employed him in making that large and noble collection of foſſils, &c. which the doctor bequeathed to the univerſity of Cambridge. Mr. Hutchinſon, being deſirous of proſecuting his literary ſtudies, begged leave to quit the ſervice of the duke, who appointed him his riding-purveyor, with a fixed ſalary of 200*l.* per annum; and this place he enjoyed till his death in 1737. In 1724 he publiſhed the firſt part of his Moſes's Principia, in which he ridiculed Dr. Woodward's Natural Hiſtory of the Earth, and his account of the ſettlement of the ſeveral ſtrata, ſhells, and nodules, by the law of gravity; attempting alſo, with no ſmall degree of preſumption, to refute and explode Newton's theory of gravitation; and from this time to his death he continued publiſhing a volume every year, or every other year; which, with the manuſcripts left behind, were publiſhed in 1748, in twelve volumes octavo, by the Rev. Julius Bate, a ſtrenuous advocate for his doctrine: an abſtract of his works was alſo publiſhed in 1752. In 1712, Mr. Hutchinſon completed a machine of the watch kind for the diſcovery of the longitude at ſea, which is ſaid to have been ſo contrived, that the ſpring, wheels, and pivots, &c. were not in any conſiderable degree influenced by heat, cold, moiſture, and drought, and to be capable of that degree of exactneſs which is requiſite for the purpoſe. Having obtained the teſtimonials of Newton, and ſome others to whom it was referred for examination, expreſſing their opinion of its excellence and utility, application was made for a parliamentary reward, but the author, exaſperated at his diſappointment, relinquiſhed his purſuits of this kind, and deſtroyed al his papers. In 1727 he publiſhed the ſecond part of Moſes's Principia, containing the principles, as he apprehends, of the ſcripture philoſophy; which are, a plenum, and the air. The air he ſuppoſes to exiſt in three conditions, *viz.* fire, light, and ſpirit; the two latter are the finer and groſſer parts of the air in motion; from the earth to the ſun, the air is finer and finer, till it becomes pure light near the confines of the ſun, and fire in the orb of the ſun, or ſolar focus. From the earth, towards the circumference of this ſyſtem, in which he includes the fixed ſtars, the air becomes groſſer and groſſer, till it becomes torpid and ſtagnant, in which condition it is at the utmoſt verge of this ſyſtem; from whence, he ſays, the expreſſion of "outer darkneſs, and blackneſs of darkneſs," uſed in the New Teſtament, ſeems to be taken. The ſun, which he places in the centre, is the active vivifying agent, which, by melting the ſpirit or groſſer parts of the air into atoms or finer parts, or æther, ſets the machine forward and keeps it a-going; for the light is preſſed out by the influx of ſpirit, and the ſpirit is preſſed in by the efflux of light; and thus the whole matter of the heavens or air is perpetually changing conditions and circulating. In the introduction to this work, Mr. Hutchinſon ſuggeſted, that the idea of the Trinity was to be taken from the three grand agents in the ſyſtem of nature, fire, light, and ſpirit; which are three conditions of one and the ſame ſubſtance, and wonderfully anſwer in a typical or ſymbolical manner to the three perſons of one and the ſame, eſſence. He alſo diſcovers the doctrine in the term *cherubim*, which is derived from כ, *ſicut*, denoting *ſimilitude* or *reſemblance*, and רבים, plural of רב, a *great* or *mighty one;* and ſo the cherubim, *i.e.* the ſimilitude of the great ones, were repreſented by a bull the chief of the tame animals, the lion the chief of the wild, and the eagle of the winged; and theſe were again figures of the celeſtial cherubim, or fire, light, and ſpirit. The bodies of theſe three animals were all joined in one, in order to ſignify the unity of the eſſence, and the diſtinction of the perſons, and man taken into the eſſence by his perſonal union with the ſecond perſon, whoſe conſtant emblem was the lion; and Mr. Hutchinſon contends, that the very name of the figure was an hieroglyphical repreſentation of the Trinity. The ſame doctrine is alſo taught by the word שמים, tranſlated *heavens;* but which the Hutchinſonians ſuppoſe to ſignify *names*, being, as they ſay, the plural of שם, a *name;* and the heavens, according to them, are called names; becauſe the material heaven, having in its one ſubſtance three conditions of fire, light, and ſpirit, is the proper name or repreſentation of the Deity in its unity of eſſence, and trinity of perſons; or of the אלהים, *Elohim*, or *Aleim*, which they derive from אלה, *alah*, an *oath*, or *conditional imprecation*, and therefore, muſt ſignify perſons that have bound themſelves by an indiſpenſible obligation; hereby intimating that the three perſons of the Godhead have abſolutely covenanted together to redeem man. On this account the ſingular Jehovah, *q. d.* the eſſence-exiſting, is ſo commonly found in conjunction with the plural *Aleim*, *i. e.* the *confederates* or *adjurators*. They derive אלוה, *Eloah*, alſo from the ſame root, and tranſlate it the *accurſed one*, referring to Chriſt, who was really made a curſe for us. The word ברית, which we tranſlate *covenant*, they derive from ברר, *to purify*, and render *purifier;* and thus ברת ברית, which is commonly rendered to *make a covenant*, they tranſlate *to cut off the purifier*. In this way Mr. Hutchinſon and his followers have founded their whole ſyſtem of theology and philoſophy on a forced and fanciful etymology of Hebrew words; indulging their minds in all the wildneſs of imagination and unbounded whim, making words ſignify what they pleaſe, turning the plaineſt hiſtory into ſublime prophecy, and conſtraining ſentences to be oracular in various ways, and meanings which they were never deſigned to bear, and which they are incapable of bearing. The ſcriptures, according to this author, written in Hebrew without points, which is the language framed in Paradiſe, and each root of which repreſents ſome obvious idea of action or condition, raiſed by the ſenſible object which it expreſſes, and farther deſigned to ſignify ſpiritual or mental things; the Hebrew ſcriptures, he ſays, rightly tranſlated and underſtood, compriſe a perfect ſyſtem of natural philoſophy, theology, and religion. Mr. Hutchinſon expreſsly ſays, that as God was primarily repreſented by the heavens, ſo emblems or draughts of theſe, or deſcriptions in Hebrew words, were no more than copies of the archetype; and thus the knowledge of the *Aleim* is derived from the light of nature, not as that phraſe is vulgarly underſtood, by any innate or inbred power in man, but by the immediate inſtruction of the Moſt High, the alone Interpreter as well the Lord of nature. The Greek, he ſays, that language of erring heathens, became of neceſſary uſe to the apoſtles, to ſpread the hiſtory of facts, which it behoved all men to be apprized of; but Chriſt and his diſciples knew too well its imperfection and unfitneſs to give juſt ideas of the divine economy to make uſe of it for that purpoſe. The original ſcriptures in Hebrew were diſtinct permanent evidence; to theſe references are always made, and there complete ſatisfaction is to be found. He alſo obſerves, that as the material machine is primarily ſuited to the ſervice of the body, ſo its ſecondary, but moſt important uſe, is to treaſure up ideas for the immortal ſoul, by affording types and evidences of the otherwiſe unutterable attributes of the Deity. Hence it muſt follow, that the language of ſcripture, which is admirably adapted to convey true and literal deſcriptions, will alſo in many places require an emblematical or ſpiritual interpretation, correſponding to the circumſtances of that creature who has a *ſoul* of *lives* to provide for. The Hutchinſonians not only erect their fanciful ſyſtem of theological and philoſophical opinions on the conſtruction of roots and ſymbols, to the ruin of natural religion and morality, but they loudly declaim againſt human learning and reaſon; and they expreſsly call abſtract reaſoning the very province of the devil.

The reader may find a diſtinct and comprehenſive account of the Hutchinſonian ſyſtem in a book, entitled "Thoughts concerning Religion, &c." printed at Edinburgh, 1743; and in a Letter to a Biſhop, annexed to it, firſt printed in 1732.

It is not improbable that Mr. Hutchinſon's death was haſtened by too intenſe an application to his ſtudies; for neglecting his uſual ſummer excurſion in 1737, in order to complete a work which he was preparing for the preſs, he became unable to reſiſt the attack of a bilious fever, to which he fell a ſacrifice, notwithſtanding the advice of ſir Edward Wilmot and Dr. Mead, in the 63d year of his age. His judgment ſeems to have been much inferior to his learning, and his temper appears from the tenor of ſome of his publications to have been irritable and dogmatical.

HUTKA, in *Geography*, a town of Hungary; 12 miles S.S.E. of Caſchau.

HUTOW, a town of Lithnania, in the palatinate of Brzeſc; 28 miles W.S.W. of Pinſk.

HUTTANY, a town of Hindooſtan, in the country of Viſiapour; 30 miles S.S.W. of Viſiapour. N. lat. 17° 5'. E. long. 75° 6'.

HUTTEN, Ulric de, in *Biography*, one of the early reformers, was the ſon of a Franconian gentleman, and was born in 1488. He ſtudied at the univerſity of Frankfort on the Oder, where he took the degree of M. A. Being deſtitute of patrimony, he entered into the army of the emperor in Italy, and was at the ſiege of Parma. He afterwards maintained himſelf by teaching at Roſtock, and made himſelf known by ſome publications. At the command of his father he attempted to ſtudy the law, but finding the profeſſion ill accord with his temper, he enliſted in the army again and ſerved in Italy. He was a man of great courage, and in 1515, learning that his couſin John Hutten, marſhal to the court of the duke of Wirtemberg, had been killed by that prince, he drew his pen in his kinſman's cauſe, and publiſhed ſome very ſevere harangues againſt the duke, which have been compared for eloquence and bitterneſs to Cicero's Catilinarian orations. After attacking the duke with his pen, he employed his arms againſt him in a war which drove him from his dominions. Having become a proſelyte to the opinions of Luther, he publiſhed the bull of pope Leo X. againſt that reformer, with marginal remarks, in which he treated the holy pontiff with ſo little reſpect, that orders were tranſmitted from Rome to the elector of Mentz to ſend Hutten thither in fetters. He was on this occaſion obliged to quit Mentz, but ſuch was the vigour of his ſpirit, that he wrote a letter to the elector in which was the following paſſage: "If you burn my books, I will burn your towns." He afterwards wandered from place to place, and was at Baſil in 1523, where the ſenate made him a conſiderable preſent. He received, however, the mortification of having his viſit refuſed by Eraſmus, then reſiding in that city. Hutten was indignant at this treatment, and wrote a book againſt Eraſmus, which that learned man anſwered. Some farther quarrels drove him from Baſil, and he took refuge in the iſle of Uffnau, in the lake of Zurich, where he died in 1523, in the 36th year of his age. He was conſidered as a man of learning, and publiſhed various Latin works in proſe and verſe. He edited two new books of Livy, and diſcovered ſome MSS. of Pliny, Quintilian, and Marcellinus. Moreri.

HUTTER, Elias, was born at Ulric in 1553, and died at Nuremberg about the year 1603. He publiſhed an edition of the Hebrew Bible, entitled "Via Sancta, five Biblia ſacra Hebræa Veteris Teſtamenti." At the end is given the 119th Pſalm in thirty different languages. He alſo publiſhed two polyglots of the Bible; one at Hamburgh in 1596, in Hebrew, Greek, Latin, and German; and the other at Nuremberg in 1599; and in the following year he publiſhed a polyglot of the New Teſtament in twelve languages. Bayle.

HUTTING *of* Grain, the name of a practice employed in ſome places in the northern part of the kingdom, for preſerving the corn in wet bad harveſt-ſeaſons. See Harvesting.

HUTTWEIL, in *Geography*, a town of Switzerland, in the canton of Berne, on the frontiers of Lucerne; 22 miles N.W. of Lucerne.

HUTTYBARRY, a town of Bengal; 45 miles S. E. of Nattore.

HUXHAM, John, in *Biography*, a phyſician of conſiderable reputation, who practiſed his profeſſion at Plymouth, where he died in the year 1768. It is remarkable, that no biographical memoirs of this able and learned practitioner are extant. His writings diſplay a moſt intimate acquaintance with the writings of the ancients, and a great veneration for thoſe of Hippocrates in particular; and he quotes the ancient languages, and writes the Latin with great fluency and familiarity. He appears to have ſpent his life at Plymouth in the active exerciſe of his profeſſion; for he kept a regiſter of the ſtate of health and reigning diſeaſes at that place, together with an account of the variety of the ſeaſons, for nearly 30 years (namely, from the year 1724 to 1752 incluſive); which were publiſhed in Latin, under the title of "Obſervationes de Aëre et Morbis Epidemicis, &c." in 3 vols. 8vo. The firſt of theſe volumes commences with an account of the year 1728; but in the dedication to ſir Hans Sloane, he refers to an account of the conſtitution and diſeaſes of the ſeaſons, from 1724 to 1727 already publiſhed. The third volume was edited in 1770, after the death of the author, by his ſon, J. Cor. Huxham, A.M. F.R.S.; who, it is to be regretted, did not inſert any memoirs of his father's life.

Dr. Huxham was, at an early period, elected a member of the Royal Society, and communicated ſeveral papers on the ſubjects of pathology and morbid anatomy, which were publiſhed in the Philoſophical Tranſactions. But the work upon which his reputation principally reſts, is his "Eſſay on Fevers," publiſhed about the year 1739, of which a fifth edition appeared the year before his death, containing alſo "A Diſſertation on the Malignant, Ulcerous Sore Throat." His accuracy and acuteneſs, as an obſerver of the phenomena of diſeaſe, were particularly exemplified in his diſcriminative hiſtory of the "Slow Nervous Fever;" to which his name is often annexed, when this fever is mentioned by ſucceeding authors. His theory was the ancient humoral pathology, which much influenced his practice; but that was the general fault of the age. He was the author of ſome "Obſervations on Antimony," 4to. 1756; and was elected a fellow of the Royal College of Phyſicians at Edinburgh. He has given few preſcriptions in his works; for he obſerves, with Hippocrates, that the phyſician, who knows a diſeaſe, cannot be at a loſs in reſpect to the form of his remedy; but, having mentioned a favourite formula for the preparation of a tincture of the Peruvian bark, in his Eſſay on Fevers, in which the bitter is corrected by aromatics, his name has become attached to the tincture of bark, which is commonly prepared in the ſhops according to his preſcription, which is alſo adopted in the Pharmacopœia of the College of Phyſicians. See the works of Huxham.

HUXING *of* Pike, among *Fiſhermen*, a particular method of catching that fiſh.

For this purpoſe, they take thirty or forty as large bladders as can be got; blow them up, and tie them cloſe and ſtrong; and at the mouth of each tie a line, longer or ſhorter, according to the depth of the water. At the end of the line is faſtened an armed hook, artfully baited; and thus they are put into water with the advantage of the wind, that they may gently move up and down the pond. When a maſter pike has ſtruck himſelf, it affords great entertainment to ſee him bounce about in the water with a bladder faſtened to him; at laſt, when they perceive him almoſt ſpent, they take him up.

HUY, in *Geography*, a town of France, and principal place of a diſtrict in the department of the Ourte, ſituated on the Meuſe, which divides it into two parts; 12 miles S.S.W. of Liege. N. lat. 50° 31′. E. long. 5° 15′. The place contains 4871, and the canton 10,674 inhabitants, on a territory of 110 kiliometres, in 12 communes.

HUYGENS, Christian, in *Biography*, was born at the Hague in the year 162. He was educated chiefly under his father, and exhibited very rare talents at an early age. At thirteen years of age he was a good mathematician, and began to ſtudy mechanics, having diſcovered a marked genius for this branch of ſcience by his great curioſity in examining different kinds of machines and pieces of mechaniſm. In the year 1645 he was ſent to the univerſity of Leyden to ſtudy law; but this purſuit did not prevent him from going on with his mathematical purſuits. At the end of one year he removed from Leyden to Breda, where an univerſity had been recently founded, the direction of which was given to his father. In 1651 he publiſhed the firſt fruits of his ſtudies, in a treatiſe entitled "Theoremata de Quadratura Hyperboles, Ellipſis, et Circuli, ex dato Portionum Gravitatis Centro, &c." and in 1654 he gave the world another work, "De circuli magnitudine inventa: accedunt Problematum quorundam illuſtrium Conſtructiones." In the following year he was admitted to the degree of doctor of laws at Angers. In 1657, Dr. Huygens publiſhed a ſhort piece, entitled "De Ratiociniis in Ludo Alæ," annexed to a mathematical work of profeſſor Schooten's, in order to ſhew the uſefulneſs of algebra. In the ſame year he printed his "Brevis Inſtitutio de Uſu Horologiorum ad inveniendas Longitudines." An attempt was made to deprive him of the honour of the diſcovery, which obliged him to publiſh another piece to ſhew that his pendulum was very different from that invented by Galileo. This philoſopher, in the courſe of his obſervations on the planet Saturn, had diſcovered what he imagined to be two ſatellites, almoſt in contact with his body, which ſome time after diſappeared. Huygens, being deſirous to account for theſe appearances and changes, applied himſelf to the improvement of the teleſcope, and he conſtructed one poſſeſſing a higher power than any which had been before invented. With this he diſcovered the ring, and he aſcertained that the appearances which Galileo had taken for ſatellites were only Anſæ, or the extreme parts of the ring. He alſo diſcovered a ſatellite belonging to that planet which had never been ſeen before. Theſe diſcoveries he communicated to the world in a work entitled "Syſtema Saturninum ſive de Cauſis mirandorum Saturni Phænomenon, et Comite ejus Planetâ novo." In the year 1660 he came to England, where he communicated his art of poliſhing glaſſes for teleſcopes, and was admitted a member of the Royal Society. Here he made conſiderable improvements in the air-pump, and diſcovered the laws of the colliſion of elaſtic bodies. In 1663 he was invited by the miniſter Colbert to ſettle at Paris; the offer of a handſome penſion in the king's name induced him to accede to the miniſter's propoſal, and he reſided at Paris from 1666 to 1681, where he was admitted a member of the Academy of Sciences. In 1673 he publiſhed "Horologium Oſcillatorium; ſive de motu Pendulorum ad horologia aptato, Demonſtrationes Geometricæ;" diſcovering a method of rendering clocks exact, by applying the pendulum, and of rendering all its vibrations equal by the cycloid. In conſequence of the revocation of the edict of Nantes he determined to leave France, though every effort was made to prevail upon him to remain there. Nothing he ſaid ſhould induce him to live in a country where his religion was proſcribed, and its profeſſors haraſſed by the moſt cruel perſecutions. He accordingly quitted Paris, and returned to Holland, where he ſpent the remainder of his life in ſcientific purſuits and employments. His laſt work, and which he did not live to ſee through the preſs, was a tract on the plurality of worlds, and the probability that the planets are inhabited. Huygens died in 1695, when he was in the 67th year of his age. He was, unqueſtionably, one of the ableſt mathematicians of the age. His temper was cheerful, his manners amiable, and he was in all reſpects a good man. Many of his works were publiſhed after his death. Moreri.

This great mathematician ſeems to have been as well acquainted with practical muſic, as the philoſophy of ſound. Dr. Smith, in his Harmonics, quotes his authority for an obſervation which could only be made by a very nice and practiſed ear.

M. Huygens obſerved long ago, "that no ſingle voice, or perfect inſtrument, can always proceed by perfect intervals, without erring from the pitch at firſt aſſumed; as in ſinging the ſounds in the baſe C, F, D, G, C, the voice would ſink inſenſibly ſo much, that the laſt C would be conſiderably lower than the firſt."

Becauſe of thoſe perfect intervals, which are as 4 to 3, 5 to 6, 4 to 3, 2 to 3, an account is made in ſuch a proportion, as 160 to 162, that is, as 80 to 81, which is what calculators call a comma. Coſmotheoros, lib. i. p. 77.

This, ſays Dr. Smith, is alſo confirmed by what we are told of a monk, who found by ſubtracting all the aſcents of the voice in a certain chant from all its deſcents, that the latter exceeded the former by two commas; ſo that if the aſcents and deſcents were conſtantly made by perfect intervals, and the chant were repeated but four or five times, the final ſound, which in that chant ſhould be the ſame as the initial, would fall about a whole tone below it.

We have always found ourſelves, that voices, ſinging without an organ or inſtrumental accompaniment, gradually ſink to a lower pitch than that in which they began. And in ſinging a ballad with many different ſtanzas to the ſame air, the depreſſion is proportionably conſiderable. But Huygens has aſſigned a ſcientific reaſon for the deſcent. Dr. Smith frequently refers in his Harmonics to the *Cyclus harmonicus* of Huygens at the end of his works, or in l'Hiſtoire des Ouvrages des Scavans, October, 1691.

Huygens, Gomarus, was born at Liere, in the territory of Antwerp, in the year 1631. He was educated at the univerſity of Louvain, where he was ſo much diſtinguiſhed among his contemporaries, that he was appointed profeſſor of philoſophy when he was only twenty-one years of age. In 1668 he began to confine his ſtudies ſolely to divinity, and in the ſame year was admitted doctor, and deputed to proceed to Rome, to defend the privileges of the univerſity of Louvain before pope Clement X. Having ſucceeded in his object he returned to Louvain, where he was inceſſantly employed in his ſtudies till the year 1677, when he was appointed preſident of the college by pope Adrian VI. In the year 1682, his Catholic majeſty, without ſolicitation, beſtowed on him a canonry of St. Peter, at Louvain. Soon after this he was involved in diſputes with the Jeſuits, and his enemies procured an interdict againſt him, by which he was prohibited the exerciſe of his functions as preſident, preacher, and confeſſor. Both parties appealed to the pope, who decided in favour of Huygens. A temporary peace was produced among the ſeveral combatants, during which Mr. H. died in 1702, at the age of 71. He was author of many theological works, among which are his "Breves Obſervationes," which, notwithſtanding the title, are extended to fifteen volumes, 12mo. Moreri.

Huygens's *Temperament of the Muſical Scale.* In his Cyclus Harmonicus, at the end of his works, and in Hiſt. des Ouvrages des Scavans, 1691, p. 78, M. Huygen's adopts a ſyſtem of temperament of the muſical ſcale, in which the octave is divided into 31 equal parts, whereof the mean tone is 5, and the major limma 3. Dr. Robert Smith, in his Harmonics, 2d edit. p. 158, calculates the temperaments of the Vth, IIId, and VIth in this ſyſtem, and Mr. Farey has done the ſame in ſcholium 12 to his Theorems, Phil. Mag. vol, xxxvi. p. 52. where it appears, that the fifths in this ſyſtem are each flattened 2.6518 Σ, each major third is ſharpened .4006 Σ, and each major ſixth is alſo ſharpened 3.0524 Σ. At page 224, Dr. Smith gives the lengths of a monochord ſtring for each of the 21 notes of this ſcale, for inſtruments with notes ſufficient, and which will equally ſerve for tuning the common douzeave inſtruments, by taking the ſeven natural notes C, D, E, &c. and C ※, E ♭, F ※, G ※ and B ♭ for the ſhort keys of the inſtrument. And at page 207 he ſhews, that by help of the firſt table of beats in plate 20, anſwering to the pitch 262, (that being nearly $\frac{1}{4}$th of a mean tone, or 24.71654 Σ lower than our preſent CONCERT *pitch*, ſee that article) ; this ſyſtem may be tuned, on common, or on more perfect inſtruments. In 1725 Ambroſe Warren publiſhed a thin quarto, under the title of the "Tonometer," wherein he pretends to the diſcovery of this ſyſtem of 31 intervals in the octave, but which he more probably took from our author, as Mr. Farey has remarked in the page of the Phil. Mag. above referred to.

HUYSMAN, or HOUSEMAN, CORNELIUS, in *Biography*, a painter, born at Antwerp in 1648. He ſtudied the art under Gaſpar de Wit, but ſeeing ſome of the works of Artois, he was ſo ſtruck with them that he went to Bruſſels to place himſelf under him.

In ſome time he copied his manner, but afterwards adopted one of his own, yet retained ſomewhat of Artois, with a mixture of the taſte of the Italian ſchools, and he is conſidered as one of the beſt landſcape painters of the Flemiſh ſchool. He died in 1727, aged 79.

HUYSUM, JOHN VAN. This illuſtrious painter hath ſurpaſſed all who have ever painted in that ſtyle ; and his works excite as much ſurpriſe by their finiſhing, as they excite admiration by their truth.

He was born at Amſterdam in 1682, and was a diſciple of Juſtus Van Huyſum, his father. He ſet out in his profeſſion with a moſt commendable principle, not ſo much to paint for the acquiſition of money, as of fame ; and therefore he did not aim at expedition, but at delicacy, and if poſſible, to arrive at perfection in his art. Having attentively ſtudied the pictures of Mignon, and all other artiſts of diſtinction who had painted in his own ſtyle, he tried which manner would ſooneſt lead him to imitate the lightneſs and ſingular beauties of each flower, fruit, or plant ; and then fixed on a manner peculiar to himſelf, which ſeems almoſt inimitable. He ſoon received the moſt deſerved applauſe from the ableſt judges of painting ; even thoſe who furniſhed him with the lovelieſt flowers, confeſſing that there was ſomewhat in his colouring and pencilling that rendered every object more beautiful, if poſſible, than even nature itſelf. His pictures are finiſhed with inconceivable truth ; for he painted every thing after nature, and was ſo ſingularly exact, as to watch even the hour of the day in which his model appeared in its greateſt perfection.

By the judicious he was accounted to paint with greater freedom than Mignon or Brueghel ; with more tenderneſs and nature, than Mario da Fiori, Michael Angelo di Campidoglio, or Segers ; with more mellowneſs than De Heem, and greater force of colouring than Baptiſt. His reputation roſe to ſuch a height at laſt, that he fixed immoderate prices on his works ; ſo that none but princes, or thoſe of princely fortunes, could pretend to become purchaſers. Six of his paintings were ſold, at a public ſale in Holland, for prices that were almoſt incredible. One of them, a flower-piece, for fourteen hundred and fifty guilders ; a fruit-piece, for a thouſand and five guilders ; and the ſmaller pictures for nine hundred.

The vaſt ſums which Van Huyſum received for his works, cauſed him to redouble his endeavours to excel ; no perſon was admitted into his room while he was painting, not even his brothers ; and his method of mixing the tints, and preſerving the luſtre of his colours, was an impenetrable ſecret which he never would diſcloſe. Yet his conduct is certainly not to his honour ; but rather an argument of a low mind, fearful of being equalled or ſurpaſſed. From the ſame principle he would never take any diſciples, except one lady, named Haverman, and he grew envious and jealous even of her merit.

By ſeveral domeſtic diſquiets his temper became changed ; he grew moroſe, fretful, and apt to withdraw himſelf from ſociety. He had many enviers of his fame, which has ever been the ſevere lot of the moſt deſerving in all profeſſions ; but he continued to work, and his reputation never diminiſhed. It is univerſally agreed, that he has excelled all who have painted fruit and flowers before him, by the confeſſed ſuperiority of his touch, by the delicacy of his pencil, and by an amazing manner of finiſhing ; nor does it appear probable that any future artiſt will ever become his competitor. The care which he took to purify his oils, and prepare his colours, and the various experiments he made to diſcover the moſt luſtrous and durable, is another inſtance of his extraordinary care and capacity.

From having obſerved ſome of his works that were perfectly finiſhed, ſome only half finiſhed, and others only begun, the principles by which he conducted himſelf may perhaps be diſcoverable. His cloths were prepared with the greateſt care, and primed with white, with all poſſible purity, to prevent his colours from being obſcured, as he laid them on very lightly. He glazed all other colours, except the clear and tranſparent, not omitting even the white ones, till he found the exact tone of the colour ; and over that he finiſhed the forms, the lights, the ſhadows, and the reflections ; which are all executed with preciſion and warmth, without dryneſs or negligence. The greateſt truth, united with the greateſt brilliancy, and a velvet ſoftneſs on the ſurface of his objects, are viſible in every part of his compoſitions ; and as to his touch, it looks like the pencil of nature.

Whenever he repreſented flowers placed in vaſes, he always painted thoſe vaſes after ſome elegant model, and the bas-relief is as exquiſitely finiſhed as any of the other parts. Through the whole he ſhews a delicate compoſition, a fine harmony, and a moſt happy effect of light and ſhadow. Thoſe pictures which he painted on a clear ground, are preferred to others of his hand, as having greater luſtre ; and as they demanded more care and exactneſs in the finiſhing ; yet there are ſome on a darkiſh ground, in which appears rather more force and harmony.

It is obſerved of him, that in the grouping of his flowers, he generally deſigned thoſe which were brighteſt in the centre, and gradually decreaſed the force of his colour from the centre to the extremities. The birds' neſts and their eggs, the feathers, inſects, and drops of dew, are expreſſed with the utmoſt truth, ſo as even to deceive the ſpectator. And yet, after all this merited and juſt praiſe, it cannot but be confeſſed, that ſometimes his fruits appear like wax or ivory, without that peculiar ſoftneſs and warmth which is conſtantly obſervable in nature.

Beſide his merit as a flower-painter, he alſo painted landſcapes with great applauſe. They are well compoſed ; and although he had never ſeen Rome, he adorned his ſcenes with the noble remains of ancient magnificence which are in that city. His pictures in that ſtyle are well coloured, and every tree is diſtinguiſhed by a touch that is proper for the leafing. The grounds are well broken, and diſpoſed with taſte and judgment ; the figures are deſigned in the manner of Laireſſe, highly finiſhed, and touched with a great deal of ſpirit ; and through the whole compoſition, the ſcene repreſents Italy, in the trees, the clouds, and the ſkies. He died in 1749, aged 67. Pilkington's Dict.

HUZANKA,

Strahan and Preſton,

HUZANKA, in *Geography*, a town of Lithuania, in the palatinate of Novogrodek; 36 miles S.E. of Novogrodek.

HUZZARD, in *Mining*, ſignifies ochry, foul, or bad; as huzzarded limeſtone in Derbyſhire, is the ochry and cherty mixtures of ſtone found in the rocks where they ſkirt the veins, and in the ſtony lenticular maſſes, found in the veins called *Riders*, which ſee. Sometimes this kind of ſtone, unfit for lime-burning, is called baſtard-limeſtone.

HWARF, in *Geography*, a town of Sweden, in Weſt Gothland; 63 miles E. of Uddevalla.

HWEN, Hven, or *Ween*, a fertile iſland of Sweden, to which country it was granted by the treaty of Roſchild, in 1658, ſituated in the Sound, about 8160 paces in circuit, and having at a diſtance the appearance of a high mountain. This iſland was granted by Frederick II. king of Denmark, to Tycho Brahe (ſee Brahe). The whole iſland contains but one pariſh, or village, with about 50 houſes; 15 miles N. of Copenhagen. N. lat. 55° 54′. E. long. 12 42′.

HWITTIS, a town of Sweden, in the government of Abo; 15 miles N. of Biorneborg.

HYACINTH, in *Botany*. See Hyacinthus.

Hyacinth, *African blue umbellated*. See Crinum.

Hyacinth, *Grape*. See Hyacinthus.

Hyacinth, *Lily and Starry*. See Scilla.

Hyacinth, *Tuberoſe*. See Polyanthus.

Hyacinth, in *Natural Hiſtory*. See Gems and Zircon.

HYACINTHIA, in *Antiquity*, feaſts held at Sparta in honour of Apollo, and in commemoration of his favourite Hyacinth.

This Hyacinth was the ſon of Amyclas, king of Sparta, and was beloved both by Apollo and Zephyrus. The youth ſhewing moſt inclination to the former, his rival grew jealous; and to be revenged, one day, as Apollo was playing at the diſcus, *i. e.* quoits, with Hyacinth, Zephyrus turned the direction of a quoit which Apollo had pitched, full upon the head of the unhappy Hyacinth, who fell down dead. Apollo then transformed him into a flower of the ſame name; and, as a farther token of reſpect, they ſay, commanded this feaſt. The Hyacinthia laſted three days; the firſt and third whereof were employed in bewailing the death of Hyacinth, and the ſecond in feaſting and rejoicing.

The perſons who aſſiſted at the ceremony were crowned with ivy: becauſe, ſays Voſſius, De Idolol. lib. ii. cap. 14. Bacchus and Apollo were the ſame perſon.

HYACINTHUS, in *Botany*, ὑάκινθος, a name adopted from the ancient Greeks, who applied it to the flower ſuppoſed to have ſprung from the blood of Hyacinthus, the favourite of Apollo, when accidentally ſlain. Great differences have ariſen amongſt commentators concerning the plant of the ancients, which we cannot preſume to ſettle, but there ſeems no paramount authority for the preſent application of the name in queſtion.—Linn. Gen. 170. Schreb. 225. Willd. Sp. Pl. v. 2. 166. Mart. Mill. Dict. v. 2. Ait. Hort. Kew. ed. 2. v. 2. 282. Juſſ. 52. Lamarck. Illuſtr. t. 238. Claſs and order, *Hexandria Monogynia*. Nat. Ord. *Coronariæ*, Linn. *Aſphodeli*, Juſſ.

Gen. Ch. *Cal.* none. *Cor.* of one petal, bell-ſhaped; its limb in ſix reflexed ſegments. Nectary three pores near the ſummit of the germen. *Stam.* Filaments ſix, awl-ſhaped, uniform, ſhorter than the corolla, inſerted into the tube; anthers approaching each other. *Piſt.* Germen ſuperior, roundiſh, with three angles and three furrows; ſtyle ſimple, ſhorter than the corolla; ſtigma obtuſe. *Peric.* Capſule roundiſh with three angles, of three cells and three valves. *Seeds* moſtly two in each cell, roundiſh.

Eff. Ch. Corolla inferior, of one petal; tube ſwelling; limb regular, in ſix ſegments. Germen with three honey-bearing pores.

Obſ. The tube of the corolla, and even its limb, varies ſo much in ſhape, that Tournefort, and recently Mr. Ker, in Curtis's Botanical Magazine, have divided this genus; their *Muſcari*, ſeparated from it, having a globular tube. In ſome ſpecies, as *H. romanus*, the limb is more deeply divided; but in *H. non ſcriptus* of Linnæus the corolla is actually of ſix petals, and we therefore preſume this ſpecies is properly removed, in the *Fl. Brit.* and Engliſh Botany, t. 377, to *Scilla*. Conſiderable doubts have, moreover, ariſen reſpecting the melliferous pores deſcribed by Linnæus upon the germen, which are certainly not diſcernible in every one of the ſpecies, but indeed they are to be ſeen at a particular period only in any.

Willdenow has thirteen ſpecies, of which *H. non ſcriptus* is a *Scilla*, as we have ſaid, and *cernuus* alſo; but the loſs of theſe may be ſupplied by two of the *Muſcari* tribe from Desfontaines, *maritimus* and *parviflorus*.

Fair examples of the genus are the common garden Hyacinth, *H. orientalis*, whoſe numerous and gorgeous varieties are the delight of floriſts; ſee Curt. Mag. t. 937; and *H. amethyſtinus*, prettily figured in Redoutés Liliacées. t. 14.

H. *Muſcari*, figured in Curt. Mag. t. 734, and Redouté Lil. t. 132, a native of the Levant, is hardy in our gardens, and valuable for its delicious muſky ſcent, though not conſpicuous for beauty, its flowers being of a duſky green.

H. racemoſus, Curt. Mag. t. 122. Engl. Bot. t. 1931, the Starch Hyacinth, ſo called from the peculiar ſmell of its dark blue flowers, is wild or naturalized on walls or in ſandy fields in England, flowering in May.

H. corymboſus, Linn. Mant. 223, is made a *Maſſonia* by Mr. Ker, in Curt. Mag. t. 991, but we are at a loſs to underſtand the reaſon of this meaſure, againſt which the habit ſtrongly revolts.

Hyacinthus, in *Gardening*, comprehends plants of the bulbous-rooted, flowering, perennial kind; of which the ſpecies principally cultivated are the eaſtern, or garden-hyacinth (H. orientalis); the common hyacinth or hare-bells (H. non-ſcriptus); the bending hyacinth (H. cernuus); the late-flowering hyacinth (H. ſerotinus); amethyſt-coloured hyacinth (H. amethyſtinus); the muſk hyacinth (H. muſcari); the feathered hyacinth (H. monſtroſus); the purple grape hyacinth (H. comoſus; the blue grape hyacinth (H. botryoides); and the cluſtered grape hyacinth (H. racemoſus).

The firſt ſpecies and varieties are the ſorts that are the moſt uſually raiſed, and eſteemed by thoſe engaged in the culture of flowers.

The varieties of this ſpecies are numerous; as thoſe with ſingle white flowers; with double white flowers; with red ſingle and double flowers; with fleſh-coloured ſingle and double flowers; with blue ſingle and double flowers; with purple blue-coloured ſingle and double flowers; with yellow flowers; with double white flowers with red eyes or middles; with double white with purple eyes; with double white with fleſh-coloured eyes; with double white with yellow eyes; with double agate blue; with double and ſingle porcelain-blue; and with double and ſingle violet-coloured flowers.

And beſides, there are alſo a number of intermediate varieties which have been obtained from ſeed, and by which many new ones of the chief ſorts juſt noticed are yearly produced; each being diſtinguiſhed either by the name of the place where it was firſt raiſed, the perſon who raiſed it, or

Strahan and Preſton.

or that of illuſtrious perſonages, ſuch as great kings, generals, poets and hiſtorians, as well as gods and goddeſſes, &c.

The principal circumſtances by which the properties of a good double hyacinth are known, are that the ſtem or ſtalk be tall, ſtrong, and upright; the flowers or bells ſufficiently numerous, each being ſuſpended by a ſhort ſtrong peduncle, having a horizontal poſition; the whole preſenting a compact pyramidal form, with the crown or uppermoſt flower perfectly erect: the flowers ſhould be large and well filled with broad bold petals, appearing to the eye rather convex than flat or hollow; they ſhould extend to about the middle of the ſcape or ſtalk. The plain colours ſhould be clear and bright, ſtrong ones being generally preferred to ſuch as are pale, and thoſe which are mixed ſhould blend together in an elegant manner.

In the fifth ſort moſt of the flowers have white ſtripes and edges; occaſionally varying to pure white, and a fine pale red colour, with deeper coloured veins running along the three outer ſegments. It was formerly known to gardeners under the title of Coventry blue hyacinth.

The ſixth ſpecies alſo affords varieties that have aſh-coloured purple flowers on the lower part of the ſpike, but which are larger and have more of the purple caſt than in that ſort; and thoſe on the upper yellow with a very grateful odour, and with very large yellow flowers.

The eighth ſort, which is termed the two-coloured or taſſel hyacinth by Mr. Curtis, has varieties with white and with blue flowers.

This is eſteemed more for its ſingularity than any beauty it diſplays.

The ninth ſpecies has likewiſe varieties with blue, with white, and with aſh-coloured flowers.

Method of Culture.—The firſt of theſe ſorts and varieties, are all increaſed by planting the off-ſets from the roots, in the manner of other bulbous-rooted perennial plants; and by ſowing the ſeed to produce new varieties of the flowers.

And they ſucceed beſt in a light ſoil, but will proſper in any common earth, particularly in moderate ſandy ground, in a dry, open, ſunny ſituation. Theſe bulbs, if planted in ſtrong or very moiſt land, are apt to rot in winter, or become diſeaſed. Where, therefore, the ſoil of the flower-borders or beds is of a ſtrong heavy quality, the part deſigned for hyacinths ſhould have light materials incorporated with it, ſuch as any light ſandy earth, from the ſurface of ſome common or other place; drift ſea-ſand, or any upper ſandy ſoil, or light earthy compoſt; and where the ſoil of the borders, &c. is of a very light, ſharp, ſandy nature, a portion of light, mellow, loamy earth and neat's dung, or well rotted dung of old hot-beds, ſhould be mixed with it, which make a fine compoſt ſurface mould for the hyacinth, when blended and laid on long enough before for the dung to be converted into mouldy earth.

The ground ſhould be well wrought over as a preparation for the plants, one ſpade deep at leaſt, raiſing the bed or border a little above the general level to avoid moiſture; and raking the ſurface as ſmooth and even as poſſible.

The floriſts moſtly prepare a compoſt for their rare kinds of hyacinths, with light ſandy loam, or any ſandy earth from a paſture field, taking only the top ſpit, ten or twelve inches deep, adding about one-third, from the ſurface, to one of drift or ſea-ſand, and the ſame quantity of rotten neat's dung; mixing the whole in a heap ridge-ways, in ſome dry ſunny expoſure, to lie ſeveral months, or if a year or more the better it will be.

To the above materials ſome alſo add a quantity of rotten leaves of trees, thoroughly decayed tanner's bark, or any perfectly rotten earthy wood, or rotten ſaw-duſt; all of which together greatly improve the compoſition; but as theſe are not always readily obtained, the other compoſt is frequently uſed with ſucceſs. With theſe compoſts a bed is prepared in the beginning of autumn, four feet wide and two deep, a cavity being dug out that width and depth, and filled up entirely with the compoſition, ſix inches above the common level, to allow for ſettling, leaving it a fortnight or a month to ſettle; when it is ready for the reception of the bulbs of the plants.

The cuſtom with the curious in theſe plants, is never to plant the fine ſorts two years together in the ſame bed or earth, without ſome previous renewal, as by planting them every year in a freſh bed, or freſh prepared compoſt, it greatly improves the ſize and beauty of the flowers.

The moſt proper ſeaſon for planting them is either in October or the beginning of November; as thoſe then planted ſhoot early in ſpring, and flower ſtrong at their uſual ſeaſon; but thoſe planted later in autumn, or continued out of the ground till January and February, for a late bloom, flower weaker and with inferior beauty; the principal part ſhould always be planted in the autumnal ſeaſon.

Where any of the common kinds are intended to be planted to adorn the open borders contiguous to the principal walks, or lawns near the habitation, to increaſe the variety in aſſemblage with other bulbous-rooted ſpring flowers, as early tulips, narciſſuſes, or anemones, ranunculuſes, &c., they ſhould be diſpoſed towards the front, more or leſs in a varied order, in patches of three roots in each, three or four inches deep; and the patches may be from about one yard to three or four diſtance, letting them ſtand to take their chance, without any further care in their culture.

And in planting the fine double ſorts, four or five rows may be planted on each bed lengthways, about nine inches diſtant in each row, and about four inches deep, either in drills the above depth, by dibble, or by bedding them in; and as ſoon as they are planted in either method, the ſurface of the bed ſhould be raked ſmooth and even on the upper ſide.

The bulbs being thus planted, the choiceſt ſorts ſhould be protected in the beds occaſionally, during winter, from ſevere froſt. They may be readily protected by a covering of ſtraw, or any kind of dry, ſtrawy litter, three or four inches thick; or by arching the beds with hoops or rods, or with moveable arched frames of open-work, covered with mats, the coverings being immediately removed when not wanted. The ſame caution ſhould be continued in the ſpring.

When the flower ſtems are advanced nearly to their full height, it is proper to ſupport them, by placing a ſmall ſtick, fifteen or eighteen inches long, cloſe to each plant, being careful not to thruſt it into the bulb, and to tie the ſtems neatly to each ſtick, by which the ſpikes of flowers will be preſerved in an upright poſition.

When in bloom, the curious ſorts may be preſerved much longer in beauty, by being ſcreened occaſionally from the ſun and rain, by an awning or umbrella of mats or canvas: they ſhould, however, be ſhaded only from the mid-day ſun, from about ten to three or four o'clock, and only from exceſſive rains and boiſterous winds.

But when the flowers begin to fade, all coverings ſhould be entirely removed, that the bulbs and increaſing off-ſets may derive all poſſible benefit from the free air, dews, &c. When the ſeaſon for flowering is over, the bulbs ſhould be taken up, which, in the floriſt's language, is called lifting the roots. The fine ſorts ſhould be taken up at this period to ſeparate the off-ſets for increaſe, as well as to benefit the main bulbs, which will always flower ſtronger than ſuch as are ſuffered to remain two or more years unremoved.

The proper time for this work is in ſummer, ſoon after they have done flowering, when their leaves begin to turn yellow, as then the bulbs have had their full growth for that ſeaſon, and ſhould by no means remain longer in the ground, as they will rot.

Dry weather ſhould be choſen, and a trowel or ſmall ſpade is proper for lifting them, taking them up one by one, and breaking off the ſtem within an inch or two of its origin; then laying them in an airy room, out of the midday ſun, to dry off the graſs moiſture very gradually, and to ripen the bulbs to a due hardneſs, when they appear of a purpliſh tinge, otherwiſe they are apt to rot and be deſtroyed.

When the bulbs are properly hardened and ripened, they ſhould be taken up and ſeparated from any off-ſets, well cleared from earth, looſe ſkins, and fibres at bottom; then, after expoſing them a few hours to the ſun, put up in boxes ſingly or upon dry ſhelves out of the ſun, to remain till the ſeaſon for planting them again arrives.

All the off-ſets appearing about the main bulbs at the lifting ſeaſon, are to be carefully ſeparated from them, either as ſoon as they are taken up, or after the bulbs have lain to ripen, being kept ſeparate, and planted in the early autumn, in beds by themſelves, in rows ſix inches aſunder, and two or three deep, where they ſhould remain a year or two; then be taken up at the proper lifting ſeaſon in ſummer, and managed as the large blowing roots.

In raiſing theſe bulbs from ſeed, which is practiſed by the curious, to obtain new varieties, to increaſe their ſtock; from the time of ſowing, it will be four or five years before the bulbs produce flowers: the ſeed ripens in the ſummer, which may eaſily be ſaved, by ſuffering ſome of the fineſt ſingles and half doubles to ſtand to ripen it in perfection. The proper ſeaſon of ſowing it is about the beginning of autumn, in which caſe the plants will appear in the following ſpring. It grows perfectly well in a bed or border of light earth in the open ground; but where only a ſmall quantity is to be ſown, it may be done in pots or boxes, and be thereby much more convenient to remove into different ſituations at different ſeaſons, as there may be occaſion. Whichever mode is adopted, light rich mould ſhould conſtantly be choſen for the purpoſe, the ſurface being rendered perfectly even and ſmooth, and the ſeeds ſown with regularity over it, and covered in to the depth of from an inch to an inch and a half. Where ſown in pots or boxes, they ſhould be plunged up to their brims in the mould, in ſome dry ſituation, and as the winter begins to ſet in, be removed either under the occaſional protection of a hot-bed frame, or be covered with ſome light dry litter in froſty weather, but letting them be fully expoſed whenever it is mild.

As ſoon as they firſt appear in the ſpring, with very ſmall leaves, they ſhould be kept perfectly free from weeds, and have a little fine mould ſifted over them in the autumn in the beds, being protected in the winter ſeaſon as before directed. When their leaves begin to decay in the ſecond ſummer, the young bulbs ſhould be taken up, and replanted in nurſery beds, about the end of Auguſt or beginning of the following month, in ſmall drills, two inches in depth, letting them be three or four inches apart. They may remain in this ſituation two years, only ſifting over the ſurfaces of the beds about half an inch thickneſs of fine mould in the autumn, and giving them occaſional protection by coverings or other means, during the winters. After this they are to be managed in the uſual manner, being taken up at the general lifting ſeaſon, and planted out where they are to flower in the autumnal months.

All the other ſpecies are capable of being readily increaſed by planting out the off-ſets in the method that has been already directed, as they each of them afford them in great plenty. They may be taken up every ſecond or third year, at the time the leaves decay, and the off-ſets be ſeparated and managed in the ſame mode as has been directed for thoſe of the firſt ſpecies.

Method of blowing the Bulbs in Water-Glaſſes, &c.—Bulbs of this ſort may be brought to flower in the winter and early ſpring, by having them put in root-glaſſes filled with water, or in pots, or ſmall light boxes filled with ſand, or light dry ſandy mould, in the beginning of the autumn, and depoſiting them in a warm room, green or hot-houſe. In all theſe ſituations they blow in a highly agreeable manner, and earlier or later in theſe different ſeaſons, according to the periods at which the bulbs have been introduced and planted.

The ſorts of bulbs commonly employed for glaſſes and pots, &c. are principally the varieties of the oriental kind, eſpecially where they are to be blown in water. In providing theſe, care ſhould be taken to ſelect ſuch bulbs as are perfectly ſound and firm, having the root part at the bottom full, plump, and ſolid.

The glaſſes for this purpoſe are of the bottle kind, having ſtraight upright bodies gradually narrowing towards the tops, where they terminate in wide concave mouths, capable of containing one root or bulb in each. They are uſually ſold at the glaſs-ſhops, ſeed-ſhops, and nurſeries, at from about five to nine ſhillings the dozen. In uſing them they ſhould be filled with ſoft clear water up to the necks, and a little way into the cavity of the mouths, one bulb being then placed in each glaſs, with the bottom or root part a little in the water, and the top upright, ſetting them in the window of a room which faces the ſun, or upon a chimney-piece, or the ſhelves of a light room where there is a fire, as the growth of the bulbs is thus greatly promoted. And they ſoon put forth ſtrong root-fibres into the water, and at the ſame time puſh out leaves and flower-buds at the tops, which advance in a regular manner to flowering, in their peculiar habits. It is neceſſary to renew the water occaſionally, as it becomes foul, or affords a fœtid ſmell, by diſcharging the old, and immediately filling up the glaſſes with ſuch as is freſh, which is the whole of the trouble that is requiſite in their management. As ſoon as the ſtalks and flower-ſpikes are advanced to a tolerable height, a neat ſmall ſtick ſhould be placed to each as a ſupport to keep it in an upright direction.

But in order to have the bulbs in blow at the moſt early ſeaſon, the glaſſes that contain them ſhould be placed in a hot-houſe, or other forcing-houſe.

And by planting ſome bulbs in pots or neat boxes of light ſandy earth, or pure ſand, in the autumn, and putting them in a warm ſitting room, green-houſe, &c. they will flower at an early period.

The bulbs in the glaſſes uſually flower in about ſix, eight, or ten weeks, acccording to the warmth of the ſituation in which they are placed. And they generally continue in blow for three or four weeks.

Where bulbs of this ſort are to be forced by fire or bark heat, ſome middling ſmall pots ſhould be provided, or ſmall, neat, oblong boxes, ſix inches in depth, filling them half way, or a little more, with light dry earth, or that of a ſandy nature, or with ſand, planting one, two, three, or more bulbs in each pot or box, according to the ſize of them, preſſing the bottoms gently into the earth, and filling up with more earth or ſand over the crown of the bulbs. After they have been thus planted, the pots or boxes ſhould be placed in the houſes, &c. watering the bulbs moderately with ſoft water, when the earth appears dry. They ſoon come into blow in this way, and, when the flowering is over, and the ſtems and leaves are decayed, the old bulbs ſhould be taken up, cleaned and dried; being afterwards planted out in the open ground to recover ſtrength, and produce good effects in the future year.

Theſe are all highly beautiful plants, that afford much ornament and variety in gardens and pleaſure-grounds. The more hardy common ſorts are proper in the borders, clumps, and other parts towards the fronts; and thoſe of the double finer kinds, in beds, pots, glaſſes and boxes, to be ſet out for variety.

HYADES, Ὑάδες, from ὕειν, *to rain*, in *Aſtronomy*, are ſeven ſtars on the bull's head, famous among the poets for the bringing of rain.

The principal of them is in the bull's left eye, by the Arabs called Aldebaran. See Taurus.

The poets feign them to have been the daughters of Atlas and Pleione; and we have the names of ſix of them, *viz.* Eudora, Ambroſia, Prodice, Coronis, Philito, and Poliſo, others add a ſeventh, *viz.* Thione. Their brother Hyas being torn in pieces by a lioneſs, they wept his death with ſuch vehemence, that the gods, in compaſſion to them, tranſlated them into heaven, and placed them in the Bull's forehead; where, as they ſay, they continue to weep: this conſtellation being ſuppoſed to preſage rain.

Others repreſent the Hyades as Bacchus's nurſes, and the ſame with the Dodonides, who fearing the reſentment of Juno, and flying from the cruelty of king Lycurgus, were tranſlated by Jupiter into heaven.

It is probable that theſe pretended Hyades, a Greek term ſignifying rainy, were merely poetical perſonages, whoſe names were given to certain ſtars diſcovered by Atlas.

HYÆNA, or Hiæna, in *Natural Hiſtory*, a ſpecies of the canis, with a ſtraight annulated tail, and the hairs of the neck long and erect; naked ears, and four toes on each foot. It has ſix cutting teeth, and two canine in each jaw; and between the tail, which is ſhort, and the anus, a tranſverſe orifice. The animal which is known to us by this name is a quadruped almoſt as large as a wolf, excepting that its legs are not ſo long; the hair of it is rough, and its ſkin ſpotted with divers colours. Hyænas were formerly produced at Rome in the public games, and they have been repreſented on ſome medals on account of their rarity. Spanheim, who had copies of it engraved from medals, deſcribes it with the head of a maſtiff, with ſhort triangular ears, a lion's tail and feet, and hair ſpotted all over like a tyger's. It inhabits Aſiatic Turkey, Syria, Perſia, and Barbary.

Pliny's account of this animal is very fabulous. He ſays, that it changes its ſex every year; and that from its eyes are taken precious ſtones, called *hyænia*. Ariſtotle and Ælian ſay, that it makes dogs dumb with its ſhadow; and that it imitates the ſpeech of mankind in order to deceive them, and thus draw them out of their houſes and devour them. The ſuperſtitious Arabs carefully bury the head when they kill a hyæna, leſt it ſhould be applied to magical purpoſes, as the neck was of old, by the Theſſalian ſorcereſs. Lucan. lib. vi. 672.

Buſbequius, in his travels to Amaſia, relates ſeveral particulars of this animal. He ſays, it is almoſt of the ſhape of a wolf, but not ſo tall; that its hair is like that of a wolf, except its being more briſtly, and marked at certain diſtances with great black ſpots; it has no neck, but its head is faſtened to the vertebræ of the back, ſo that it is forced to turn itſelf quite round, whenever it would look behind. It is very cruel and voracious; it drags dead bodies out of graves, and carries them to its den. It alſo preys on the herds and flocks. It is ſaid to imitate the voice of a man, and that by this means it often deceives travellers. It is a ſolitary unſociable animal, and inhabits the chaſms of rocks. Theſe animals have a moſt malevolent aſpect; and they are in their nature cruel, fierce, and untameable.

Hyæna, *foſſil remains of.* M. Cuvier, in his Report to the National Inſtitute of France, of the Tranſactions of the Phyſical and Mathematical Claſs in 1806, mentions, that the bones of hyænas have been found in a great number of caverns in the mountains of Hungary and Germany, in company with the ſkeletons of tigers, bears, and other animals of unknown ſpecies: they are alſo found in looſe recent alluvial ſoils, in ſome vallies, he ſays, in the Report for 1809. Phil. Mag. vol. 35. p. 388.

HYÆNIUS Lapis, the name of a ſtone ſaid to be found in the eyes of the hyæna. Pliny tells us, that theſe creatures were anciently hunted and deſtroyed for the ſake of theſe ſtones, and that it was ſuppoſed they communicated the gift of prophecy, on being put under the tongue.

HYAGNIS, in *Greek Mythology*, the Oxford marbles tell us, was of Celene, and according to Alexander, cited by Plutarch in his Dialogues, he was the moſt ancient performer on the flute in Greece.

He was contemporary with Ericthon, 1506 years B. C., who inſtituted the Panathenæan games at Athens. He was ſaid to be the author of the nomes conſecrated to Cybele, to Bacchus, to Pan, and to many other divinities.

He added a ſixth ſtring to the lyre of Mercury. Some make him the inventor of the Phrygian mode, and double flute. He was the father of Marſyas, according to Plutarch and Nonnus. Apuleius ſays, that he brought the flute to its higheſt perfection.

HYALE, in *Mythology*, one of the nymphs of Diana.

HYALINÆ, in *Natural Hiſtory*, derived from ὕαλη, *glaſs*, the name of a genus of foſſils, of the claſs of the talcs, the characters of which are, that they are compoſed of ſeparate plates, of conſiderable thickneſs, and thoſe not fiſſile into any thinner.

There is but one ſpecies known of this genus, which is found lodged in the clay, in the ſteep banks of the river Aube in Champaigne, near the town of Bar, and in ſome other places along that river; but ſo far as is yet known, in no other part of the world.

HYALINGE, in *Geography*, a town of Sweden, in the province of Bleckingen; 20 miles S. S. E. of Konſbeck.

HYALITE, in *Mineralogy*, occurs in wacke, in reniform maſſes, and is chiefly found at Frankfort on the Mayne. It has a conſiderable reſemblance to gum, and is nearly allied to opal. The maſſes are uſually much cracked. Its colour is yellowiſh and greyiſh-white, and it occurs in thin cruſts on other minerals. Externally and internally it is ſhining, and its luſtre is vitreous. The fracture is ſmall and flat conchoidal. The fragments are indeterminately angular, and ſharp edged. It is tranſlucent, paſſing to ſemi-tranſparent. It is intermediate between the hard and ſemi-hard: is brittle and frangible. The ſpecific gravity is 2.11. It is infuſible at 150° of Wedgwood, but yields to ſoda. Jameſon's Min. Thomſon's Chemiſtry.

HYALOIDES, in the *Natural Hiſtory of the Ancients*, the name of a tranſparent ſtone fit to engrave ſeals on, which was the great uſe they made of the gems, and very bright and readily reflecting the images of things. We have this ſtone to this day in many parts of America, particularly about the river of the Amazons, from whence many fair ſtones of it have at times been brought, and have been by ſome miſtaken for diamonds; they are a ſort of pebble cryſtal, approaching to what the jewellers call the white ſapphire. Hill's Theophraſt. p. 80.

Hyaloides, from ὑαλη, *glaſs*, in *Anatomy*, is ſometimes applied to the vitreous humour of the eye, contained betwixt the tunica retina, and the uvea.

HYANCHE, a word uſed by the old medicinal writers to ſignify a quinſy, attended with a ſwelling on each ſide of the throat.

HYARON, in *Geography*, a ſmall iſland in the Grecian Archipelago, near the coaſt of the Morea, between the gulf of Napoli and the gulf of Engia.

HYAT, a town of Hindooſtan, in the circar of Sollapour; 12 miles E.N.E. of Sollapour.

HYATNAGUR, a town of Hindooſtan, in Bengal; 18 miles N.W. of Mauldah.

HYBERNICUS Lapis. See *Iriſh* Slate.

HYBLA, in *Ancient Geography*, a town of Sicily; of which Stephanus gives an account, diſtinguiſhing three places of this name under the appellations of *major*, *minor*, and *parva*. The firſt, or *Hybla major*, was ſituated near and ſouth of mount Ætna. Pauſanias, in his "Eliac," l. i. c. 25, ſays, that it was ſituated in the territory of Catana, and entirely depopulated. Avola, 16 miles from Syracuſe, which formerly ſtood on a hill, boaſts of having been the Hybla major, ſo celebrated for its honey: but to this title ſo many places lay claim, that it is not eaſy to decide on the ſubject. See Avola, Melilli, and Paterno. *Hybla minor*, or *minima*, called alſo *Heræa*, was ſituated in the ſouthern part of Sicily; and is placed in the Itinerary of Antonine on the route from Agrigentum to Syracuſe. This is now "Calata-Girone." *Hybla parva* was a maritime town of Sicily, on the eaſtern coaſt. It was alſo denominated *Galaotis*, and more frequently *Megara*, from which the gulf, to the ſouth of which it was ſituated, was called "Megarenſis ſinus."

Hybla, *Mount*. See Melilli.

HYBLÆANUM Bitumen. See Bitumen.

HYBOMA, a word uſed by the old ſurgical writers for a gibboſity of the ſpine.

HYBRISTICA, of ὑϐρις, *injury*, in *Antiquity*, a ſolemn feaſt held among the Greeks, with ſacrifices, and other ceremonies; at which the men attended in the apparel of women, and the women in that of men, to do honour to Venus in quality either of a god, or a goddeſs, or both. Or, according to the account given by others, the hybriſtica was a feaſt celebrated at Argos, wherein the women, being dreſſed like men, inſulted their huſbands, and treated them with all marks of ſuperiority, in memory of the Argian dames having anciently defended their country with ſingular courage againſt Cleomenes and Demaratus.

Plutarch ſpeaks of this feaſt in his treatiſe of the great actions of women. The name, he obſerves, ſignifies *infamy;* which is well accommodated to the occaſion, wherein the women ſtrutted about in men's clothes, while the men were obliged to dangle in petticoats.

HYDAGE. See Hidage.

HYDARTHRUS, in *Surgery*, ſignifies the diſeaſe of the joints, better known by the name of white-ſwelling. The term is derived from ὑδωρ, *water*, and αρθρον, *a joint*.

HYDASPES. See Behut.

HYDATID, ὑδατὶς, in *Medicine*, from ὕδωρ, *water*, in the genitive caſe, ὑδατος, literally a *veſicle* containing a watery or tranſparent fluid, denotes certain ſpherical bodies, which are found occaſionally in man, as well as in other animals, lodged in, or adhering to, the different viſcera.

The term *hydatid* has been applied to *two ſpecies* of veſicular bodies, which appear to differ very materially in their nature: one of theſe, which, in the human ſubject, is commonly found adhering to the liver, ſpleen, or meſentery, and appears to have no farther connection with the body, than as it furniſhes a nidus, is commonly ſuppoſed to be of an animal nature, and to poſſeſs an independent vitality: the other ſpecies, which is found attached to the kidnies, uterus, ovaries, or placenta, is conſidered as dependent on a mere morbid alteration of the ſtructure of theſe parts. The firſt of theſe may be called the *true*, the ſecond the *ſpurious* hydatid, for the ſake of diſtinction; although at preſent we cannot conſider the nature of either variety as ſatisfactorily aſcertained, or the appellations as ſtrictly correct.

1. *Of the true Hydatid.* The firſt authors, who deſcribed the hydatids accurately, and obſerved that they poſſeſſed the power of motion, were Phil. Jac. Hartmannus, who publiſhed his diſcovery in the year 1685 (ſee Miſcell. Natur. Curioſ. Dec. 2, Ann. 4.); and Dr. Tyſon, whoſe account was printed in the Philoſophical Tranſactions for the year 1692, and who appears to have been unacquainted with Hartmann's obſervations. Tyſon, who deſcribed and figured the hydatid, as found in ſheep, obſerved the neck and mouth of the animal, and ſaw them in motion; Hartmann farther ſaw the whole body in motion, by putting them into warm water. Profeſſor Pallas afterwards examined them very minutely, and finding their heads of the ſame ſtructure as that of the *tænia*, or tape-worm, he gave them the name of *tænia hydatigena*. (See his Miſcellanea Zoologica.) The abbé Fontana alſo obſerved them in ſheep, ſaw the young ones adhering to the ſides of the parent bag, and alſo with a microſcope examined the heads of them, and found them reſembling thoſe of tæniæ. (Opuſcoli Scelti, tom. 6.) Dr. Baillie ſays, "there is no doubt at all, that the hydatids in the livers of ſheep are animalcules: they have been ſeen to move when taken out of the liver, and put into warm water; and they retain this power of motion for a good many hours after a ſheep has been killed." (Morbid Anatomy, p. 224. ed. 2d.) The late Dr. John Hunter gave the following account of ſome hydatids, that were found in the abdomen of a ſheep, adhering to the fat about the kidnies, and to the liver, in conſiderable number.

"The hydatids in the ſheep were exactly the ſame with thoſe deſcribed by Tyſon. They conſiſt of a mouth, neck, and oblong ſpherical body. The mouth had nothing of the cruciform appearance, if I may be allowed the expreſſion, that late writers have made the characteriſtic mark of *tænia*, and which they ſay is to be found in all hydatids. The mouth, examined with ſome care with the microſcope, appeared to be a ſimple longitudinal aperture. The neck was compoſed of rings, and there appeared very fine circles ſurrounding the body. They varied in ſize, from that of a cheſnut to the dimenſions of a turkey's egg. When put in warm water, though it muſt have been twelve or fourteen hours after the ſheep had been killed, they moved briſkly, with a kind of periſtaltic motion all over the body. Each hydatid was lodged in a ſeparate ſac, which was little more than ſufficient to hold it, for the neck was reflected upon the body. The ſides of the ſac were lubricated with a mucous fluid." See Tranſactions of a Society for the Improvement of Med. and Chirurg. Knowledge, vol. i. p. 50.

Hydatids are alſo found in the *brain* of ſheep, in which caſe they produce the diſeaſe, called, in ſome parts of the country "*the ſtaggers*." The hydatid is lodged in the ſubſtance of the brain; in one ſheep there were two hydatids, one in each hemiſphere of the brain; they were of an irregular oval ſhape, they had no mouth; their coats had the ſame appearance as in the hydatids found in the abdomen;

and, when put in warm water, they had a ſtrong periſtaltic motion. In ſome there were cluſters of young ones adhering to their inner coats. Theſe were ſomewhat oval in their ſhape, and adhered by one end; but on detaching them carefully, and examining them with good magnifiers, I could never find the cruciform mouth deſcribed by ſome writers." Dr. Hunter, loc. cit.

The hydatids, found in, or attached to, the liver, in the human ſubject, bear a ſtrong analogy to thoſe of ſheep above deſcribed; whence it is concluded, that they are moſt probably alſo animalcules. They have never been ſeen to move, indeed, when taken out of the body, and put into warm water; a circumſtance which may be explained by the length of time which elapſes after death, before the human body is examined; during which the hydatids muſt have loſt their living principle. There is undoubtedly ſome difference between the hydatids in the liver of ſheep, and in that of the human ſubject, in ſimplicity of organization, the hydatid in the human liver being a ſimple uniform bag, and the hydatid in that of the ſheep having a neck and mouth appended to the bag. But "this difference," Dr. Baillie remarks, "need be no conſiderable objection to the opinion above ſtated: life may be conceived to be attached to the moſt ſimple form of organization. In proof of this, hydatids have been found in the brains of ſheep, reſembling almoſt exactly thoſe in the human liver, and which have been ſeen to move, and therefore are certainly known to be animalcules." (Morbid Anat. p. 225.) In other reſpects, too, they bear a conſiderable analogy to each other.

The hydatids of the liver in man are commonly found incloſed in a cyſt, which is frequently of conſiderable ſize, and is formed of very firm materials, ſo as to give to the touch almoſt the feeling of cartilage: it is endowed with a ſtrong contractile power, ſo as forcibly to protrude its contents, through any opening made into it. It conſiſts of two coats, the outer one of which is thick and laminated, the inner a ſoft and pulpy lining, like coagulable lymph. A cyſt may contain one hydatid, or a greater number of them: they lie looſe in the cavity, ſwimming in a fluid; or ſome of them are attached to the ſide of the cyſt.

As to the ſtructure of the hydatids themſelves, they conſiſt of a tranſparent, or ſemi-tranſparent bag, uniformly round and ſmooth, and contain a clear fluid capable of coagulation. The common colour of them is white, but they are occaſionally ſeen of a light amber colour. The bag of the hydatid conſiſts of two laminæ, and poſſeſſes a good deal of contractile power. They are commonly unconnected with each other, or with the cyſt which contains them; but ſometimes they have been ſaid to incloſe each other in a ſeries, like pill-boxes. On the inſide of an hydatid ſmaller ones are ſometimes found, which are commonly not larger than the heads of pins, but ſometimes they are even larger in their ſize than a gooſeberry. Theſe are attached to the larger hydatid, either at ſcattered irregular diſtances, or ſo as to form ſmall cluſters; and they are alſo found floating looſe in the liquor of the larger hydatids. Dr. Hunter obſerves, that when the young ones, growing in the coats of the larger ones, were examined with the microſcope, they were found not to be ſet in the coats like pearls, but to be covered by a thin tranſparent membrane, ſo as to lie between two layers. The moſt common ſituation of hydatids of the liver is in its ſubſtance, and incloſed in a cyſt; but they are occaſionally attached to the outer ſurface of the liver, hanging from it, and occupying more or leſs of the general cavity of the abdomen.

There are many inſtances of hydatids, occurring in the ſituation laſt mentioned, and terminating life, in conſequence of the derangement produced by the prodigious preſſure on the viſcera, which they occaſioned. In theſe caſes, a large ſwelling of the abdomen takes place, yielding a diſtinct ſenſation of fluctuation, as in aſcites, or abdominal dropſy, attended with emaciation of the limbs, difficulty of breathing, œdema of the legs, and other ſymptoms of impeded functions. In one caſe, related by Dr. Simmons, a cyſt was found after death, of immenſe ſize, filled with hydatids of various ſizes, and attached to the liver, omentum, meſentery, and peritoneum. It alſo penetrated the diaphragm, and then, expanding again, filled almoſt the whole of the left cavity of the thorax, adhering to the pleura and mediaſtinum. The upper part of this ſac communicated in ſeveral places with the lungs, which were ulcerated; ſo that if the patient had lived long enough, ſhe would probably have coughed up hydatids, as one of the openings from the cyſt into the lungs was large enough to admit a gooſe-quill. In the ſubſtance of the liver, which weighed ſixteen pounds and a half, another large cyſt was found. This contained ten pints of hydatids, and ſixteen pints had been taken out of the abdominal cyſt before the part in the thorax was examined. (See Medical Communications, vol. 1. art. 5.) A ſimilar caſe is related in the Edinburgh Medical and Surgical Journal, vol. 2. p. 170. in which "an immenſe cyſt, occupying the whole cavity of the abdomen," was found after death, connected to the meſentery. It was diſtended to the utmoſt, and contained thirty-five pints of hydatids, many of them exceeding the largeſt oranges in ſize. In both theſe caſes, the diſeaſe was ſuppoſed to be common aſcites during life; and in both a fruitleſs attempt was made to draw off the fluid by tapping.

In the firſt of theſe hiſtories, we have ſeen that a ſmall communication actually exiſted between the ſac of hydatids, and the cells of the lungs, although none of the hydatids had paſſed that way. But there are inſtances on record, in which the true hydatids were *coughed up* from the lungs. A lady of Lancaſter, during an illneſs which continued more or leſs for three years, "coughed up ſeveral hundreds of hydatids, moſt of which were burſt, and of theſe many muſt have been as large as a pullet's egg: thoſe which were not burſt, were only about the ſize of a nutmeg." (London Med. Journal, vol. 6. p. 293, for the year 1785.) This lady recovered her health; ſhe had been conſidered as dropſical, and having diſeaſe in the liver. Another lady, who had a tumour in the right hypochondrium, in which fluctuation was diſtinctly perceived, expectorated 135 hydatids in the courſe of four months, after which ſhe began to amend. Med. Tranſactions of the Coll. of Phyſicians, vol. 2. art. 22.

In ſome caſes theſe abdominal cyſts form adheſions to, and communications with, the alimentary canal, through which the hydatids are diſcharged. A lady at Windſor was treated with mercurials, under the ſuppoſition that hepatitis, and conſequent ſuppuration in the liver, had taken place. "In about ten days the mercury began to affect her mouth, and at the ſame time ſhe voided an incredible quantity of the *tæniæ hydatigenæ*, or hydatides, by ſtool and by vomiting. Her attendants reckoned ſhe paſſed to the number of a thouſand; there being as many as filled two large chamber-pots. They were from the ſize of a ſmall pea, to an inch and a half in diameter, &c." An hepatic abſceſs afterwards opened externally, a gall-ſtone was diſcharged from it, and ſhe ultimately recovered. (Lond. Med. Journal, vol. 10. for 1789, p. 76.) An example of fatality occaſioned by a ſac of hydatids, ſituated in the *porta* of the liver, which, by its preſſure on the veſſels, produced complete obſtruction and jaundice, is related by Dr. Duncan, ſen. in the Ed. Med. and Surg. Journal, vol. 4. p. 187.

In a few inſtances, ſmall hydatids, formed in the kidnies, have been diſcharged by urine; as in a caſe related by Dr. Baillie, who obſerves, that "ſometimes the true hydatid is formed in the kidnies, having exactly the ſame nature with that which grows in the liver." (Morbid Anat. p. 279.) The hydatids, in this inſtance, differed much in ſize, from that of a ſmall orange, to that of a pin's head: the ſmaller ones only were of courſe paſſed with the urine; but in conſequence of the increaſed exertion, neceſſary to drive theſe through the urethra, the bladder had acquired a conſiderable thickneſs in its muſcular coat, as in other caſes of obſtruction to the free paſſage of the urine. In a caſe related by Dr. John Hunter, death was occaſioned by a collection of theſe hydatids, lodged between the bladder and *rectum*, filling the pelvis, and producing a fatal ſuppreſſion of urine. Dr. Hunter puts the following query reſpecting the manner in which the hydatids came to be lodged in that ſituation. "It has been obſerved," he ſays, "that they are moſt commonly found in the liver and ſpleen, and in the preſent caſe their original ſeat would appear to have been in the laſt of theſe viſcera: may not, however, one of the ſacs or bags in the ſpleen have burſt, by which the contents would be ſpread all over the abdomen, and from their own gravity would naturally fall into the pelvis; and may they not have adhered to the neighbouring parts, and ſo multiplied there?" See Tranſ. of a Society, &c. before quoted, vol. 1. p. 48.

Laſtly, theſe hydatids are ſaid to have been diſcharged from tumours in different parts of the body. See Philoſ. Trans. vol. 25.

Such are the ſituations in which the true hydatids have been obſerved to occur, and the modes in which they have eventually been diſcharged or have deſtroyed the patient. Dr. Hunter remarks, that of the various caſes related by writers ſcarcely any proved fatal, when the hydatids found an outlet. But, however deſirable it might, therefore, be to procure ſuch an outlet, where the preſence of hydatids is ſuſpected, it is obvious that, as they are generally ſeated in the abdomen, art can ſeldom if ever interfere, and the buſineſs muſt be left entirely to nature.

2. The *ſpurious hydatids*, if that term be allowable, which are found connected with the kidnies, the placenta, the ovaries, and uterus, appear to differ greatly in their nature from the hydatids above deſcribed. They are not incloſed in firm cyſts, nor exiſt without any attachment to each other, or the ſurrounding parts, nor do the larger ones contain others attached to their internal coats, or ſwimming in the fluid, as in the true hydatids. "Their coats are alſo thinner, and leſs pulpy, and not uncommonly they are almoſt as thin as any membrane of the body." It is, therefore, probable that they depend on a diſeaſed alteration of the parts in which they are ſeated, and are not diſtinct organized ſimple animals. (Baillie Morb. Anat. p. 278.) The hydatid ſtructure of the placenta is a diſeaſe not very uncommon, and uſually occaſions miſcarriage; for when it takes place, Mr. Home has remarked, "the natural healthy actions for the ſupport of the fœtus are ſo much impeded, that its growth is arreſted. This evidently happened in a caſe publiſhed, with an engraving of the placenta and fœtus, by Dr. Denman: and when the patient does not early miſcarry, the fœtus diſappears: and in all the inſtances where miſcarriage has taken place in a more advanced ſtage of the diſeaſe, I believe no fœtus has been found." (Mr. Home, in Tranſ. of a Soc. for the Improvement of Med. and Chir. Knowledge, vol. 2. p. 300.) The hydatids, in theſe caſes, are commonly ſmall, from the ſize of a pin's head, to that of a large pea or common grape, are cluſtered together, and individually connected with the placenta, or with each other, by a narrow ſtalk or pedicle. Lieutaud has mentioned the circumſtance of large maſſes of hydatids being found in the uterus. (Hiſt. Anat. Med. tom. 1. p. 335.) But it is probable, as Dr. Baillie ſuggeſts, that theſe were only hydatids of the placenta which had been retained there. Loc. cit. p. 379.

Hydatids are, perhaps, ſometimes found connected with the ovaria: but it is not improbable, as the ſame author remarks, that the cyſts, in ovarial dropſy, have been occaſionally confounded with the true hydatids, to which they bear ſome reſembance. They are, however, really very different. They have much firmer and leſs pulpy coats than hydatids; they contain a different kind of fluid; and they are differently connected among themſelves: for they adhere to each other laterally by pretty broad ſurfaces; do not incloſe each other; and appear to have no power analogous to generation, like hydatids, by which ſmaller cyſts are formed, that are attached to others of a larger ſize. It appears not improbable, that theſe ovarial cyſts are formed by a gradual enlargement of the ſmall veſicles, which make a part of the natural ſtructure of the ovaria. (Baillie, p. 392.) See *Encyſted* DROPSY.

HYDATIDES, 'Υδατιδες, of ὑδας, for ὑδωρ, *water*, in *Natural Hiſtory*, a name given by ſome writers to a ſpecies of aſtroites, the lineations of which reſemble waves. It is by others uſed as a name of the enhydros.

HYDATIS, in *Medicine*. See HYDATID.

HYDATIS, in *Zoology*. See TÆNIA.

HYDATISM, in *Surgery*, a word uſed by ſome writers to expreſs the noiſe or ſound made by the fluctuating humours contained in abſceſſes.

HYDATOCHOLOS, of ὑδωρ, *water*, and χολη, *bile*, an epithet uſed by the old writers on medicine for ſtools more than ordinarily liquid or bilious.

HYDATOIDES, 'Υδατοειδης, formed of ὑδωρ, ὑδατος, *water*, and ειδος, *form*, *reſemblance*, a name ſome authors give to the aqueous humour of the eye, incloſed between the cornea and uvea.

HYDATOSCOPIA, compounded of ὑδατος, the genitive of ὑδωρ, *water*, and σκοπεω, *I view*, *I conſider*, called alſo *hydromancy*, a kind of divination, or method of foretelling future events, by means of water.

There is a natural or allowable kind of hydatoſcopia: it conſiſts in foretelling ſtorms, tempeſts, hurricanes, &c. from natural ſigns or indications in the ſea, air, clouds, &c.

HYDE, EDWARD, earl of Clarendon, in *Biography*, was born at Dinton, in Wiltſhire, in February 1608. He was educated in the elements of learning, under his father's roof, by the vicar of the pariſh, and his progreſs was ſo great that he was deemed fit for the univerſity at the age of thirteen. He was intended for the profeſſion of the law, and was entered very early of the Middle Temple. Here he was under the protection of his uncle Nicholas Hyde, afterwards chief juſtice of the King's-bench. He had the happineſs of being introduced early to a very reſpectable ſet of acquaintance, among whom were perſons of the firſt rank for talents and learning in the kingdom, ſuch as lord Falkland, Selden, Kenelm Digby, Carew, Waller, Sheldon, Hales of Eton, Chillingworth, &c. of whom he has, in his memoirs, given very characteriſtic and entertaining ſketches. To their converſation and example he has aſcribed much of his own greatneſs, and he has ſtrongly expreſſed his ſenſe of the benefit of ſuch ſociety, by ſaying that "he never was ſo proud, or thought himſelf ſo good a man, as when he was the worſt man in company." He engaged in a cauſe on the part of the merchants of London, which was the means of introducing him to the notice of archbiſhop Laud, then a commiſſioner of the treaſury, who became very ſerviceable to him in his future profeſſional advancement. His connections were the means of throwing a deal of buſineſs into his hands as a barriſter, but he did not ſo immerſe himſelf in legal purſuits as wholly to neglect polite literature, and by his manner of living, and the company which he kept, he ſeemed to affect the gentleman rather than the man of buſineſs. In the year 1640, on occaſion of the Scotch rebellion, he was choſen burgeſs, and ſat in parliament for Wootton-Baſſet. Almoſt as ſoon as he had taken his place in the houſe of commons, he brought forward a complaint of the illegal practices and oppreſſions of the earl marſhal's court, but the ſpeedy diſſolution of the parliament prevented any proceedings upon it at that time. In the new houſe he ſat for the borough of Saltaſh, and renewed, with ſo much effect, his attack upon the marſhal's court, that he procured its ſuppreſſion. He now laid aſide his buſineſs at bar, and gave himſelf up entirely to the public concerns of the country, and being an independent gentleman, enliſted under the banners of no party, he was frequently appointed chairman of committees in matters of great importance. One of theſe, was that which drew up the charges againſt the judges for their deciſion in the caſe of ſhip-money. In this caſe he oppoſed the court, but at the ſame time ſhewed ſuch an attachment to regal government, and to the eſtabliſhed church, that he was regarded with ſuſpicion by the heads of that party. The king was ſenſible of the obligations he was under to him, and took an opportunity of expreſſing his ſenſe of gratitude for the ſervices towards himſelf, and his regard for the national religion. Flattered, perhaps, by his ſovereign's condeſcenſion, he was from this time looked upon as one of the royal party: he avows that "he had a very particular paſſion and devotion for the perſon of the king; and a moſt zealous eſteem and reverence for the conſtitution of government, which he believed ſo equally poiſed, that if the leaſt branch of the prerogative were torn off, the ſubject ſuffered by it, and he was as much troubled when the crown exceeded its juſt limits." When the commons' remonſtrance on the ſtate of the nation came out, Mr. Hyde, as he ſays, only to give vent to his own indignation, and without the leaſt purpoſe of communicating it, drew up a reply, which, however, he ſhewed to lord Digby, and at length ſuffered it to appear as the king's anſwer with the advice of his council. Soon after this he was offered the place of ſolicitor-general, which he declined, but agreed to be one of a private conſultation on the king's affairs and their management in parliament, with lord Falkland, and ſir John Colepepper. In this office he ſtood apart from the others, by oppoſing the king's aſſent to the bill for depriving the biſhops of their ſeat in the houſe of lords, which, however, his majeſty was prevailed on to give. In April 1642, Mr. Hyde was ſent for by the king to York; and repairing thither he aſſiſted in drawing up many papers in the royal cauſe, and in private conſultations. The parliament recalled him, but refuſing to comply with their order he was exempted from pardon by a ſpecial vote. After the commencement of the civil war, Hyde was nominated to the chancellorſhip of the exchequer, ſworn of the privy-council, and knighted. He remained with his majeſty till March 1644, when he accompanied prince Charles into the Weſt, and afterwards attended him to the iſland of Jerſey. After the prince left the kingdom, ſir Edward Hyde remained in the iſland two years longer, purſuing his ſtudies in great tranquillity, and attending to the compoſition of a hiſtory of the tranſactions in which he had borne a conſpicuous part. In 1648 he was ordered to attend the prince at Paris. Upon his arrival he found great differences prevailing between the queen-mother, and the duke of York. The king's court at the Hague was not in a better ſtate of union, and he found ſo little good to be done by a perſonal attendance, that he obtained leave to retire to Antwerp, where his wife and children were, with whom he lived in a ſtudious and domeſtic retreat, and in a ſtyle ſuited to his reduced circumſtances. After this he removed to Breda, at the deſire of the princeſs of Orange, the late king's eldeſt daughter, who propoſed to take his daughter as one of her maids of honour, to which, with much heſitation, he agreed In 1657 he was appointed to the poſt of lord chancellor of England, which he very unwillingly accepted, properly judging that it was ridiculous, as the office proceeded from a king without a kingdom, but it appeared that Charles, not able of himſelf to reject the importunities of thoſe who were continually applying to him for contingents, grants, and reverſions, wiſhed to throw the burden upon one who had firmneſs enough to refuſe improper requeſts. At the Reſtoration, the chancellor might be conſidered as the king's firſt and moſt confidential miniſter; and it is agreed, that he diſplayed great wiſdom and integrity in ſettling the many difficult affairs which this event brought for deciſion. He is particularly praiſed for rejecting the propoſal of raiſing a great ſtanding revenue, which would have made the king independent of future parliaments; and for the earneſtneſs with which he proceeded to diſband the army. He alſo moderated the forward zeal of the royaliſts, and checked their appetite for revenge. His honours naturally roſe with his power, and in 1660 he was created a peer, and elected chancellor of the univerſity of Oxford, and in the following year he was advanced to the titles of viſcount Cornbury and earl of Clarendon. He alſo received various grants from the crown, which rendered his eſtate adequate to his dignity. A ſhort time after the king's return, it was diſcovered that his daughter, at the princeſs of Orange's court, had attracted the notice of the duke of York, who, failing of ſucceſs in an attempt to obtain her favours upon eaſy terms, had entered into a private contract of marriage with her. Lord Clarendon was exceſſively indignant at this tranſaction, and adviſed the king to ſend his daughter to the Tower, and bring her to condign puniſhment. The king, however, felt leſs keenly on the ſubject, and behaved with great juſtice and propriety in the buſineſs, though the duke baſely denied his marriage, and even encouraged ſcandalous reports againſt his wife. The queen-mother alſo expreſſed the utmoſt rage at the connection, but ſhe was nevertheleſs at length acknowledged as ducheſs of York, and eventually gave two queens to England. This marriage was made a ſtep for alienating the king from his chancellor, and in 1663 the earl of Briſtol exhibited various charges againſt him in the houſe of lords, which he was unable to ſubſtantiate, and which terminated greatly to the honour of the chancellor. Many other charges were brought againſt him; his oppoſition to a bill for liberty of conſcience, and many of his public meaſures rendered him very unpopular: his admonitions of a corrupt prince alienated from him his ſovereign's affection, ſo that, notwithſtanding all his faithful ſervices to the crown, he was, without reluctance, given up as a ſacrifice to the national odium. In Auguſt 1667, he was required to reſign the great ſeal, and was at the ſame time removed from all offices of public truſt. He was afterwards impeached of high treaſon by the houſe of commons, but the lords refuſed to commit him upon their charge, and during the debates upon this head he received the king's commands to withdraw from the kingdom. Before his departure he ſent an apology to the houſe of peers, which was voted to be a libel, and burnt by the hands of the common hangman. A bill was now paſſed againſt him as a fugitive from juſtice. He landed at Calais, but received an order from the court of France to quit their territory inſtantly. A fit of illneſs rendered this impoſſible, and he finally obtained permiſſion to reſide in that country. He had nearly loſt his life by an attack of ſome Engliſh ſeamen, with whom he was very unpopular; after this he proceeded to Montpellier, where he employed himſelf in writing a vindication of his conduct. He died at Rouen, in the month of December 1674. His body was brought to England and interred in Weſtminſter-abbey. He left ſeveral children, of whom his eldeſt ſon ſucceeded him. Lord Clarendon was author of "Contemplations and Reflections on the Book of Pſalms:" "A brief View of the Errors in Hobbes' Leviathan:" "The Hiſtory of the grand Rebellion," in three volumes folio, to which was added his life, and a continuation of his hiſtory publiſhed in 1759, by the univerſity of Oxford. This, his great work, is regarded as a valuable ſource of information on the events of that unhappy period. According to Mr. Hume, it is, excepting Whitelock's memorials, the moſt candid account of thoſe times compoſed by any contemporary author. Clarendon, ſays the ſame hiſtorian, was always a friend to the liberty and conſtitution of his country. It is ſaid that when he firſt engaged in the ſtudy of the law, his father exhorted him with great earneſtneſs to ſhun the practice, too common in that profeſſion, of ſtraining every point in favour of prerogative, and perverting ſo uſeful a ſcience to the oppreſſion of liberty, and in the midſt of theſe rational and virtuous counſels, which he reiterated, he was ſuddenly ſeized with an apoplexy, and expired in a few hours in his ſon's preſence. As an hiſtorian, Clarendon will ever be eſteemed as an entertaining writer, even independently of our curioſity to know the facts which he relates. He is more partial in appearance than in reality. He is leſs partial in his relation of facts than in his account of characters: he was too honeſt a man to falſify the former; his affections were eaſily capable, unknown to himſelf, of diſguiſing the latter. "An air of probity and goodneſs," ſays Hume, "runs through the whole work, as theſe qualities did in reality embelliſh the whole life of the author." See Hume's Hiſt. vol. vii. octavo. Biog. Brit.

Hyde, Thomas, a moſt profound Oriental ſcholar, who flouriſhed in the ſeventeenth century, was born at Billingſley, near Bridgenorth, in Shropſhire, in the year 1636. He received the elements of a learned education under his father's inſtructions, and at the age of ſixteen he was entered of King's college, Cambridge. In the courſe of two years he was ſent to London to the learned Walton, afterwards biſhop of Cheſter, as a perſon very capable of aſſiſting him in preparing for publication the grand polyglot bible, on which he was then engaged. Mr. Hyde rendered this undertaking the moſt eſſential ſervices: he tranſcribed the Perſian Pentateuch out of the Hebrew characters, in which it was firſt printed, at Conſtantinople, into the proper Perſian characters. Of this Pentateuch, Mr. Hyde added a Latin tranſlation; and he further aſſiſted in correcting different parts of Walton's work, in the Arabic, Syriac, and Samaritan languages. In 1658 Mr. Hyde went to Oxford, and was admitted of the Queen's college, and ſoon afterwards appointed Hebrew reader in that ſociety. Soon after the reſtoration of king Charles II. Mr. Hyde was made under-keeper of the Bodleian library, which furniſhed him with ample opportunities of proſecuting his favourite ſtudies with ſingular advantage, and in 1665 he was elected to the office of head-keeper. In the ſame year he publiſhed "Verſio Latina e Lingua Perſica, et Commentarii in Obſervationes Ulug. Beigi, de Tabulis Longitudinis, et Latitudinis Stellarum fixarum." About the time when this verſion was publiſhed, Mr. Hyde became acquainted with the great Mr. Boyle, to whom he communicated ſeveral remarkable paſſages relating to chemiſtry, phyſics, and natural hiſtory, which he had collected from Oriental writers. In 1666 he was promoted to a prebend in the cathedral church of Saliſbury, and in the following year he publiſhed "Quatuor Evangelia, et Acta Apoſtolorum, Lingua Malaieâ, Characteribus Europæis," printed at the expence of Mr. Boyle. In 1674 he gave the world "Catalogus impreſſorum Librorum Bibliothecæ Bodleianæ in Academia Oxon:" and in 1678 he was made archdeacon of Glouceſter. Two years after this he was admitted to the degree of doctor of divinity, and from this period he was frequently giving additional proofs of his unremitting ſtudy, and ſingular ſkill in all kinds of Oriental learning. An account of his ſeveral learned works will be found in the Biographia Britannica, and alſo in a more abbreviated form in the General Biography. In 1697, Dr. Hyde was appointed regius profeſſor of Hebrew, and canon of Chriſt-church. Shortly after this he publiſhed "the Religion of the ancient Perſians." Dr. Hyde's profound ſkill in Oriental literature, and deſire to promote it, would have led him to publiſh many more learned works than he did, could he have obtained encouragement from the public. The want of this obliged him to decline running the riſk of printing any thing more, and on a ſimilar account the writings which he left behind him were ſuffered to lie neglected, till it was too late to recover them, though the loſs has ever ſince been regretted by the learned, and thoſe who knew how to eſtimate their value. In 1701 Dr. Hyde reſigned the office of head-keeper of the Bodleian library, on account of his great age and infirmities. During the reigns of Charles II., James II., and William III. he had occupied the poſt of interpreter and ſecretary in the Oriental languages; and in the courſe of his employment, had made himſelf moſt intimately acquainted with the policy, ceremonies, and cuſtoms of the Oriental nations. Dr. Hyde died in the year 1702, at his apartments in Chriſt-church, in the ſixty-ſeventh year of his age. We ſhall tranſcribe the character of this great man as given by Granger: "Dr. Thomas Hyde," ſays he, "is a great character, but is much leſs known than he deſerves to be, becauſe the ſtudies in which he was occupied are but little cultivated. Thoſe that are acquainted with the Oriental languages, are aſtoniſhed at the progreſs which was made in them by one man, though aided by the power of genius, ſupported and ſtrengthened by inceſſant induſtry. There never was an Engliſhman, in his ſituation of life, who made ſo great a progreſs in the Chineſe. Bochart, Pococke, and Hyde, are allowed to been the greateſt Orientaliſts that any age or nation have produced. I am informed that Dr. Hyde's mind had been ſo much engroſſed by his beloved ſtudies, that he was but ill qualified to appear to any advantage in common converſation." Dr. Gregory Sharpe, maſter of the Temple, collected and republiſhed ſome of his pieces which were formerly printed. Theſe made their appearance in two volumes quarto, under the title of "Syntagma Diſſertationum et Opuſcula." Anthony Wood has preſerved a catalogue of MSS. which Dr. Hyde had either completed, or in part prepared for the preſs. Biog. Brit.

Hyde, in *Geography*, a maritime county of America, in Newbern diſtrict, North Carolina, bounded E. by the ocean, W. by Beaufort county, N. by Tyrrel, and S. by Carteret; it contains 4783 inhabitants, of whom 1386 are ſlaves.

Hyde *of Land*. See Hide.

Hyde-*gild*. See Hide-*gild*.

HYDEPARK, in *Geography*, a townſhip of America, in Orleans county, in Vermont; containing 110 inhabitants.

HYDER Ally, in *Biography*, was a ſoldier of fortune in the Eaſt, and the ſon of a perſon who ſerved in quality of a "killatar," or governor of a ſmall fortreſs, to one of the kings of Myſore. He is ſaid to have acquired the rudiments of war in the French camps; and in the year 1753, diſtinguiſhed himſelf as their auxiliary, in the plains of Tritchinopoly. About 10 years afterwards, being then at the head of the Myſore army, he dethroned his ſovereign, and governed under the title of regent. Soon after, he extended his dominions on every ſide, the Carnatic excepted: the fine province of Bednore (or Biddanore) and the Patan nabobſhips of Cuddapah, Canoul, &c. beſides ſome Mahratta provinces towards the river Kiſtnah, and the country of the Nairs, and other ſmall ſtates on the Malabar coaſt, were added to his original poſſeſſions; until at laſt he was at the head of a ſtate, in extent equal to Great Britain, and producing a groſs revenue of four millions ſterling. The civil broils and revolutions in the weſtern Mahratta ſtate, particularly in latter times, allowed Hyder to aggrandize himſelf at its expence, but not without receiving ſome ſevere checks from that quarter. Before he had arrived at the height of his power, the war between him and the Engliſh broke out in 1767; nevertheleſs his power alarmed his neighbours, and a reſolution was formed for attacking him. The Mahrattas under Maderow entered Hyder's country on the ſide towards Viſiapour; and the Nizam, joined by a detachment of Britiſh troops, moved from Hydrabad towards the frontier of Myſore, ſoon after. Hyder firſt contrived to buy off the Mahrattas with a large ſum of money, and the reſtitution of ſome of the places which he had taken from them.. He next negotiated with the Nizam, and ſucceeded not only in detaching him from the Engliſh, but in drawing him over to his party: ſo that the Engliſh detachment was compelled by neceſſity to retire to the Carnatic; on the frontiers of which their great army was now aſſembling. The ſuperiority of the Nizam in the Carnatic had been always nominal; however, Hyder who now meditated the conqueſt of it, was glad to obtain from the Nizam a grant, or "ſunnud," for the nabobſhip of it; and from this time, at leaſt, he conſidered Mahomed Ally as his rival. In the days of this laſt mentioned prince's diſtreſs, when he poſſeſſed only a ſmall part of the Carnatic, he had engaged to cede the fortreſs of Tritchinopoly, a moſt important poſt in the ſouthern diviſion of it, to the king of Myſore, for the aſſiſtance then afforded him; but this engagement never being performed, Hyder adopted the claims and reſentments of the prince, of whoſe throne he had taken poſſeſſion; and never loſt ſight of his title to Tritchinopoly. In the war that immediately enſued, a ſtrong detachment of the Britiſh army ſeized on Hyder's province of Coimbettore, a fertile diſtrict on the ſouth of Myſore, and commanding a ready paſs to Hyder's capital, Seringapatam. During the years 1767, 1768, and part of 1769, the war was continued with various ſucceſs. (See Hindoostan.) In 1771 Hyder ſuffered a total defeat from the Mahratta army within a few miles of his capital, into which he eſcaped with great difficulty, and after having ſuſtained a great loſs. Here, as his enemies had neither ſkill nor the ordinary requiſites for a ſiege, he remained unmoleſted, and patiently waiting the retreat of his enemies after they had deſolated the country. Some ſubſequent years of peace very much improved both his army and revenues; and the diſtractions that ſubſiſted among the Mahrattas afforded him an opportunity of extending his territories at their expence. Hyder's projects of ambition were counteracted by two unſucceſsful campaigns, in which he combatted with the Britiſh troops under ſir Eyre Coote; ſo that in October 1782, he was reduced to the neceſſity of earneſtly wiſhing for peace. Soon after Hyder died, and was ſucceeded by his ſon Tippoo. (See Hindoostan.) Major Rennell, at the cloſe of the ſhort abſtract which he has given in the introduction to his "Memoir" of the hiſtory of Hyder, ſubjoins the following outline of his character, which, as he conceives, has been little underſtood. "His military ſucceſs, founded on the improvement of diſcipline; attention to merit of every kind; conciliation of the different tribes that ſerved under his banners; contempt of ſtate and ceremony, except what naturally aroſe from the dignity of his character, and his conſequent economy in perſonal expences (the different habits of which form the chief diſtinction of what is called character among ordinary princes) together with his minute attention to matters of finance, and the regular payment of his army:—all theſe together raiſed Hyder as far above the princes of Hindooſtan, as the great qualities of the late Pruſſian monarch raiſed him above the generality of European princes; and hence I have ever conſidered Hyder as the Frederic of the Eaſt. Cruelty was the vice of Hyder; but we are to conſider that Hyder's ideas of mercy were regulated by an Aſiatic ſtandard; and it is not improbable that he might rate his own character for moderation and clemency, as far above thoſe of Tamerlane, Nadir Shah, and Abdallah, as he rated his diſcipline above theirs."

HYDERGUNGE, in *Geography*, a town of Hindooſtan, in Oude; 21 miles W.N.W. of Fyzabad.

HYDERGUR, a town of Hindooſtan, in Bednore; nine miles S.W. of Bednore.

HYDNOPHYLLUM, or Hydnophyllon, in *Botany*, a name given by the ancient Greeks to a plant which they tell us grew on thoſe places where the tubera or truffles lay underneath.

HYDNORA. See Aphyteia.

HYDNUM, an ancient name adopted by Linnæus, but miſapplied, as the ὕδνον of Dioſcorides, οἴδνον of Theophraſtus, ſo called from οἰδέω, *to ſwell*, is the Truffle or *Tuber*.—Perſoon Syn. Fung. 554. Linn. Gen. 568. Syſt. Veg. ed. 14 978. Schreb. 769. Mart. Mill. Dict. v. 2. (Erinaceus; Dill. Giſſ. 188. Mich. t. 72.) Claſs and order, *Cryptogamia Fungi*. Nat. Ord. *Fungi*.

Eſſ. Ch. Cap turbinate; ſmooth above; echinated beneath with awl-ſhaped fibres.

Obſ. Theſe awl-ſhaped bodies which Linnæus compares to the prickles of a hedge-hog, are ſoft, ſolid, conical, or cylindrical ſubſtances, emitting ſeeds from every part of their ſurface. *Bulliard.*

This is a very extenſive genus of *Fungi*, Perſoon in his Synopſis having deſcribed 26 ſpecies, moſt of which have been figured either by Sowerby, Bulliard, Jacquin, or Schrader.—Linnæus was acquainted with only ſix ſpecies of *Hydnum*. Theſe plants are chiefly found in moiſt ſituations upon the decayed trunks of trees. It will be ſufficient to enumerate a few of the moſt ſtriking ſpecies.—*H. imbricatum*, Sowerb. Fung. t. 73, was communicated from lord Ongley's plantations in Bedfordſhire. Its colour is a duſky yellow, having a reddiſh brown border.—*H. repandum*, t. 176, is found plentifully in Peckham and Hornſey woods, during autumn. This is of a fine reddiſh buff colour, and very brittle in ſubſtance.—*H. Davieſii*, t. 15, is a ſmall yellow or brown fungus; when freſh of a pure white, more rare than beautiful, very ſimilar in texture to *Boletus verſicolor*, and was firſt diſcovered in Angleſea by the Rev. H. Davies.—*H. ſublamelloſum*, t. 112. of a delicate white colour, was ſent from Bedfordſhire by the Rev. Dr. Abbot.—*H. auriſcalpium*, *Barba Jovis*, *coralloides*, *membranaceum*, and *ramoſum*, leſs conſpicuous ſpecies are alſo figured by the ſame author. *H. auriſcalpium*, beautifully diſplayed in Curt. Lond. faſc. 3. t. 68, is of a browniſh colour and grows upon the cones of fir-trees. Curtis mentions it as an excellent example of this genus for the inſtruction of a young botaniſt.

Moſt *Hydna* are furniſhed with ſtems, but not all. *H. paraſiticum* is the only Linnæan ſpecies that is ſtemleſs.

HYDRA, in *Aſtronomy*, a ſouthern conſtellation, conſiſting of a number of ſtars, imagined to repreſent a water ſerpent. The ſtars in Hydra, in Ptolemy's Catalogue, are twenty-ſeven; in Tycho's, nineteen; in Hevelius's, thirty-one; and in the Britannic Catalogue, ſixty. See Constellation.

Hydra, in *Geography*, a ſmall iſland in the Grecian Archipelago, about 10 miles long, and two broad. N. lat. 37° 20′. E. long. 23° 30′.—Alſo, a town of Africa, in the kingdom of Tunis, on the frontiers of Algiers, ſituated in a narrow valley, near a running ſtream and the ſcite of extenſive ruins; 90 miles E.S.E. of Conſtantina.

Hydra *of Lerna*, in *Mythology*, a terrible monſter, born of Typhon and Echidne, according to Heſiod; which was deſtroyed by Hercules. The poets repreſent it ſometimes as a ſerpent, branched out into ſeveral other ſerpents, and ſometimes with a human head, bearing ſerpents inſtead of hair; and they add, that when one of the ſerpents heads were cut off, a double head ſprouted in its place.

This hydra with many heads is ſaid to have been only a multitude of ſerpents, which infeſted the marſhes of Lerna, near Mycenæ, and which ſeemed to multiply as they were deſtroyed. Hercules, with the aſſiſtance of his companions, cleared the country of them, by burning the reeds in which they lodged. See Hercules.

Hydra, in *Zoology*, a generic name of the polypes. See Polype.

Hydra is alſo a ſynonymous name given by different authors to various animals, as, for inſtance, by Linnæus to Tænia globoſa, by Bohadſch to Holothuria tubuloſa, and again by Linnæus with the ſpecific term of glomerata to Corallina pencillus.

HYDRABAD, or Bagnagar, in *Geography*, a city of Hindooſtan, and capital of a province, to which it gives name, now called *Golconda*, (which ſee,) is the preſent capital of the Nizams of the Deccan; who, ſince the diſmemberment of their empire, have left Aurungabad, the ancient capital; which is not only in a corner of their dominions, but in that corner which lies near their hereditary enemy, the Poonah Mahrattas, and which is alſo the leaſt defenſible. Hydrabad was formerly only a palace of pleaſure, and celebrated for the beauty of its gardens and delightfulneſs of its ſituation; but in the 16th century, the king of that period was induced, by the perſuaſion of one of his wives, to build a city, after whom he called it Bagnagar, or the gardens of Nagar. It is of large extent, ſurrounded with walls, and defended with towers; and is ſuppoſed to contain upwards of 100,000 inhabitants. The ſuburbs are extenſive, and inhabited by merchants and tradeſmen; 352 miles N.N.W. of Madras. N. lat. 17° 12′. E. long. 78° 51′.

Hydrabad is alſo the name of a fortreſs of Hindooſtan, ſituated on the Indus, not far above the head of the Delta, and in the vicinity of Naſſarpour; the uſual place of reſidence of the prince of Sindy.

HYDRACHNA, in *Entomology*, a genus of the apterous order, eſtabliſhed by Müller, the character of which, as reduced by Gmelin to the arrangement of the "Syſtema Naturæ," conſiſts in the head, thorax, and abdomen being united; the feelers jointed and two in number; the eyes either two, four, or ſix, and the legs eight.

Till within the ſpace of the laſt few years, almoſt every author, not excepting Linnæus and Geoffroy, have confounded the hydrachna with the acarus tribe; while, from their ſimilarity of aſpect, the globular form of the body, and the length of their feet, theſe inſects were conſidered by general obſervers as no other than a race of ſpiders, to which the ſignificant appellation of aquatic was moſt commonly annexed, becauſe they inhabit watery places, and thus appear from their habits, though not in form, to conſtitute a diſtinct family from the true or terreſtrial ſpiders. Both Roeſel and Degeer have entered with a peculiar ſhare of minuteneſs into the hiſtory of theſe animals; and it is more than probable the obſervations of theſe naturaliſts might furniſh many very uſeful ſuggeſtions to the ingenious Müller, whoſe monagraphia on this curious race appeared in 1781. This conjecture is doubtleſs correct, but nevertheleſs the tract, or rather hiſtory, publiſhed under the title laſt mentioned, contains a fund of new and valuable information; it elucidates in a very comprehenſive manner their internal as well as external conformation, and beſides, condenſes into one point of view a ſeries of no leſs than fifty diſtinct ſpecies, the far greater part of which was totally unknown to any of his predeceſſors. Theſe ſpecies are divided into three families, according to the number of eyes in each, which are either two, four, or ſix; thoſe of the firſt diviſion have the body of the male terminated in a kind of tail or elongated proceſs.

After the publication of this uſeful work the genus hydrachna, as propoſed by that author with ſome ſlight amendments or deviations, was embraced by the generality of naturaliſts, and ſtill continues to be approved by the beſt authorities. Fabricius is indeed an exception; that excellent entomologiſt perhaps, without mature conſideration, and certainly without affording us any reaſonable grounds for believing he was ſo well acquainted with this tribe of creatures as Müller, rejects the genus altogether, and refers the few ſpecies he deſcribes, which really belong to that tribe, to his genus Trombidium. Gmelin, on the contrary, differs from Fabricius in this reſpect, and adopts the genus together with its numerous ſpecies as deſcribed by Müller. The moſt material, and in our opinion the moſt able deviation from Müller, hitherto propoſed, is that ſubmitted by Latreille; this very aſſiduous and intelligent naturaliſt agrees with Müller in conſidering the hydrachna as a diſtinct natural family, but inſtead of allowing them to remain with the inſect tribe in conformity with preceding writers, he referred them in the firſt inſtance to the cruſtacea, and ſince that time to the Arachnides, in which latter they conſtitute his family Hydrachnelles. The Hydrachnellæ of this writer are divided into three different genera, eylais, hydrachna, and limnochare; the firſt of which is furniſhed with mandibles, as we find exemplified in the Fabrician Trombidium extendens. That to which the name of hydrachna is retained has no mandibles, and is furniſhed with a projecting ſiphon in the form of a beak, the feelers are advanced, and have a moveable appendice, and the body is of a globular figure: Trombidium geographicum of Fabricius is an illuſtrative example of this genus. The limnochare genus has no mandible; a ſiphon not at all, or very little projecting; feelers curved, without appendices, and the body depreſſed; the Linnæan Acarus aquaticus is of this genus.

The hydrachnæ, as we have before ſaid, are vulgarly called water ſpiders; they are all of the aquatic kind, reſiding among plants that grow in the water, or in the banks of ditches, and other ſituations contiguous to their favourite element. When in the water they ſwim with great facility by means of their feet, which in moſt ſpecies, when attentively examined, appear ciliated, and admirably adapted for that purpoſe;

their ſkin is thick, and their body covered more or leſs with down, hair, or ſpines. The females are larger than the males, and often different in colour. In general their colours are remarkably bright, and poſſeſs a peculiar degree of brilliancy when ſeen in the water; the prevailing hues red or green, and ſilvery. They are exceſſively abundant in ſpring, and ſome of the ſpecies are almoſt conſtantly ſeen at that ſeaſon of the year, on the ſurface of ſtagnant pools of water: they couple in the midſt of ſummer, and depoſit their eggs in cluſters, chiefly among the weeds; theſe eggs are of a red colour, and at firſt ſpherical, but afterwards change to a ſemilunar form; the larvæ are furniſhed with ſix feet, and have a proboſcis of very ſingular ſtructure. The hydrachnæ prey upon the larvæ of the tipulæ and monoculi, and the juices of decayed vegetables, and are themſelves the food of fiſhes, of many inſects that reſide in the water while in the ſtate of larva, of polypes, and many of the larger kinds of aquatic worms.

Species.

* *Section. Eyes two; Body tailed.*

Globator. Globular; eyes red. Müll.

Abundant in ditches, and other ſtagnant waters; the male greeniſh ſpotted; female blueiſh, without ſpots, and twice the ſize of the male.

Tabulator. Globular, yellowiſh, with ſpotted diſk; tail cylindrical and equal. Müll.

Inhabits ſtagnant waters, and in ſome reſpects reſembles the former.

Buccinator. Obovate, red, behind black; tail cylindrical, yellow and narrow at the baſe. Müll. *Trombidium caudatum*, Fabr. *Acarus caudatus*, Degeer.

Lives in banks, the body beneath black; eyes reddiſh; legs black.

Cuspidator. Brown, truncated before, and mucronated behind; tail depreſſed and bidentated. Müll.

Body depreſſed, and broader on the anterior part; behind narrow, and armed with an erect triangular ſpine; eyes black; legs pale. Lives in fiſh-ponds.

Pustulator. Gibbous, red; tail depreſſed, with obtuſe, angles. Müll.

Body ſmooth, and generally covered with animalcules of the vorticella tribe. In graſſy ſtreams.

Albator. Rounded, grey, with a white diſk; tail depreſſed, and armed with three teeth. Müll. *Acarus globoſus*, &c. Schranck. *Acarus fluviatilis*, Ströem.

Found in fiſh-ponds.

Maculator. Rounded, cinereous, ſpotted, and mucronate behind; tail depreſſed, and armed with three teeth. Müll.

In ditches; breaſt whitiſh; legs green.

Tricuspidator. Red, with a triple gibboſity on the back; tail depreſſed, and three-toothed. Müll.

The body is ſomewhat reticulated; breaſt blackiſh; feelers and legs whitiſh. Found in pools.

Emarginator. Red, with the back gibbous; tail depreſſed and emarginate. Müll.

Feelers and legs greeniſh. Occurs in boggy ſituations.

Sinuator. Grey; the back yellowiſh on the fore part, and tripunctated behind; tail depreſſed and ſinuated. Müll.

Body reticulated; feelers and legs white. Found in ſtagnant waters.

Integrator. Green and without ſpots; tail depreſſed and entire. Müll.

Found in ditches; the body roundiſh oval, depreſſed, and contracted behind; breaſt yellowiſh; legs hyaline.

Papillator. Rounded, purple with an excreſcence each ſide the tail; legs black.

Inhabits wet meadows.

* * *Section. Eyes two, Body marked with a Fork.*

Grossipes. Nearly ſquare, white, with three ſpots and a rufous fork; anterior legs thick.

Body pellucid and glabrous; legs twice as long as the body. Inhabits ditches.

Crassipes. Obovate; black, the diſk black with a reddiſh fork; tail papillous; anterior legs thick. Müll.

Found in fiſh ponds and dykes; legs three or four times the length of the body; pellucid; breaſt whitiſh; eyes black.

Grossipes. Nearly ſquare, white, with three ſpots and a rufous fork; anterior legs thick. Müll. Geoffr.

Inhabits fiſh-ponds; body glabrous; legs twice the length of the body.

Clavicornis. Obovate, rufous with a yellow fork; feelers clavated; legs pale. Müll.

Found in ponds; the eyes black; legs and feelers white.

Spinipes. Oval, greeniſh yellow, with eight dots and a rufous fork; legs ſpinous. Müll.

Inhabits pools. The body poliſhed, with the eyes, breaſt, legs, and dots on the back black.

Longicornis. Nearly ſquare, white with five brown ſpots and a rufous fork; feelers long. Müll.

Frequents rivulets; pellucid; eyes black; breaſt pale yellow.

Vernalis. Oval, greeniſh with a deeper diſk, and rufous fork. Müll.

Inhabits overflown meadows; and has the appearance of a grey dot; the legs white.

Lunipes. Oval, white, ſpotted, with a clear white fork; fourth joint of the poſterior legs lunated. Müll.

Found in ditches, the body pellucid, with large eyes, and the legs and feelers pale.

Trifurcalis. Oval, whitiſh, with a brown back and triple ſilvery fork. Müll.

Frequents wet meadows; the feelers ending in a claw, and with the legs pale greeniſh white; eyes black; abdomen beneath, ſometimes brown with a white line.

Orbicularis. Depreſſed, orbicular, pale yellow with black ſpots on the diſk and a rufous fork. Müll.

Eyes black; legs white. This ſpecies occurs in rivers.

Stellaris. Globular, blue, with a cinereous back and ſtellated fork. Müll. Subzer, &c.

In the banks of rivulets; the body of this kind is reticulated; and the legs ſomewhat longer than the body.

Ovalis. Ovate, compreſſed, greeniſh and flattiſh above, carinated and yellow brown beneath; feelers placed beneath. Müll.

Found in overflown meadows. Eyes and legs black.

Elliptica. Rounded, blue with fulvous ſpots and dots. Müll. *Acarus maculatus aquaticus*, Degeer.

A ſcarce ſpecies found in rivers; eyes black; legs white, breaſt, tail, and poſterior margin yellowiſh.

Orbiculata. Depreſſed, orbicular, violet, with a white ſpot and circle. Müll.

Breaſt fulvous with the tip green; feelers and thighs whitiſh; eyes black. Inhabits muddy ditches.

Lugubris. Globular, browniſh, with black ſtreaks; legs green. Müll.

In boggy places; eyes black; feelers green.

Truncatella. Grey, oblong, truncated behind, with duſky dots and lines. Müll.

Inhabits marſhes; eyes black, feelers white.

* * * *Section. Eyes two; Body glabrous.*

Despiciens. Rounded, red, with numerous ſpots; eyes placed beneath. Müll. *Aranea aquatica*, Friſch.

Found in ditches; body ſlightly depreſſed, thick and wrinkled; eyes blackiſh; legs pale yellow.

Geographica. Spherical, black with four ſcarlet ſpots and dots. Müll. Roeſ., &c.

The largeſt and moſt beautiful of its genus; eyes, feelers, and laſt joint of its legs red. Inhabits ditches.

Abſtergens. Globular, red without ſpots; legs black. Müll. Roeſ., &c.

Inhabits ſtagnant waters; lines on the body beneath, with the eyes and legs black.

Extendens. Rounded, red; hind legs contracted. Müll.

In ditches; body convex, and ſhining.

Cruenta. Diſtended, red; legs equal. Müll. *Trombidium globoſum*, Fabr. *Acarus aquaticus globoſus*, Degeer.

Found in overflown meadows; eyes red; feelers downy.

Impreſſa. Diſtended, red, with impreſſed dots; feelers ſhort. Müll. *Acarus aquaticus ruber*, Degeer. *Acarus holoſericeus ſubgloboſus aquaticus*, Schranck.

Found in marſhes; a ſuppoſed variety has the feelers longer.

Ovata. Obovate, grey-brown, with a triangular fulvous ſpot; legs pale black. Müll.

Another analogous kind, an apparent variety of ovata, has the body marked with a fulvous croſs, and the legs with the eyes and feelers black. Both are found in ditches.

Lunaris. Oval, rufous, with a black lunate ſpot on the back. Müll.

Inhabits fiſh-ponds; the eyes are black, and the legs grey.

Liliacea. Obovate and whitiſh, the diſk lily-white, with a black ſpot each ſide. Müll.

The feelers, legs, and breaſt are pale, the latter ſpotted with black. This kind inhabits fens.

Torris. Oval, yellowiſh, with lateral black ſpots, and red in the middle; hind ſhanks lamellated. Müll.

Found in ditches, the eyes black, and legs white.

Strigata. Oblong, yellowiſh-green, the fore part depreſſed, with two blackiſh ſtreaks united behind. Müll.

Near the banks of rivers; the eyes are black; feelers and legs white.

Obſoleta. Rounded, reddiſh-brown, with a double obſolete ſtreak behind the eyes. Müll.

Frequents the waters of woody ſituation; the eyes are black; feelers pellucid; and the legs pale-browniſh.

Nodata. Red, truncated before, and ſpotted each ſide; poſterior legs knotty. Müll.

Occurs in ditches; the eyes are black; feelers annulated; legs yellowiſh and longer than the body.

Complanata. Green, depreſſed, and emarginate before, with a white band in the middle. Müll.

The body elliptic; eyes black; legs and feelers pellucid.

Muſculus. Green, oval, compreſſed, grooved above, beneath carinated. Müll.

Varies in colour; the eyes are black, feelers white, and pellucid. Found in marſhes.

Latipes. Oval, yellowiſh, and ſpotted each ſide; fourth joint of the poſterior legs dilated. Müll.

In marſhes; the legs pale-blueiſh, with the tip brown.

Verſicolor. Nearly ſquare, with whitiſh, blue, and brown ſpots. Müll.

Found in wet meadows; the body white, beneath brown, with a yellow margin; feelers and legs pellucid, white.

* * * * *Section. Eyes four.*

Calcarea. Rounded, brown, with a clear white diſk. Inhabits marſhy woods; the eyes are black; feelers pointed, and the legs pale and pellucid.

Fuſcata. Ovate, reddiſh-brown, with a darker diſk, and pale rufous fork. Müll.

The body is convex, and ſpotted on the back; eyes black; legs and feelers white and pellucid. Found in muddy ditches.

Undulata. Oval, pale-yellow, with flexuous black ſtreaks. Müll.

In marſhes. The body ſub-globular, pellucid, with black eyes.

Maculata. Oval, red, with black ſpots on the back. Müll.

Eyes black; legs and feelers pale-yellow, and pellucid.

* * * * * *Section. Eyes ſix.*

Umbrata. Rounded, red, with numerous darker ſpots. Müll.

Inhabits marſhy woods; the body glabrous, ſub-depreſſed with ten darker ſpots above, beneath blackiſh; eyes black; feelers yellowiſh at the tip; legs yellow.

HYDRAGOGUES, Hydragoga, ὑδραγωγα, from ὑδωρ, *water*, and αγειν, *to draw*, in *Medicine*, an appellation given to thoſe purgatives which produce copious watery ſtools.

The moſt acrid and draſtic purgative drugs are thoſe to which the epithet of *hydragogue* is particularly applicable; not as the ancients conceived, becauſe they have a particular attraction for the *watery* part of the circulating fluids; but becauſe, by their powerfully ſtimulant operation on the mouths of the exhalent arteries, which open every where along the inner ſurface of the inteſtinal canal, they occaſion thoſe veſſels to pour out their fluids in great abundance, and thus render the ſtools thin and watery. Of the more active hydragogues in modern uſe are the elaterium, ſcammony, camboge, &c.: jalap, calomel, colocynth, and ſome other ſubſtances of a leſs acrid quality, when adminiſtered in large doſes, likewiſe excite a copious excretion of watery fluids from the inteſtines. Some caution is requiſite in the adminiſtration of theſe active cathartics, eſpecially in habits originally delicate or weakened by diſeaſe, or in thoſe whoſe bowels are peculiarly irritable. Fainting, convulſions, and even death have been the conſequence of exceſſive purging: theſe reſults appear to have been not very rare among the ancients, who were obliged to have recourſe to ſuch medicines as white hellebore, when a conſiderable catharſis was neceſſary. "Convulſio poſt helleborum lethale," is an aphoriſm more than once expreſſed by Hippocrates. A *hypercatharſis*, with bloody ſtools, is a more common conſequence of hydragogue purging in modern times. See Hypercatharsis.

Draſtic hydragogues are ſeldom indicated, except in dropſy eſpecially of the belly, in which a copious watery diſcharge from the inteſtines occaſionally effects a cure of the diſeaſe;—or in caſes of paralytic torpor extending to the bowels, in hemiplegia;—or in the painter's cholic, after the ſpaſm has been relaxed by opiates. In enteritis, or inflammation of the bowels, hydragogues ſhould be cautiouſly ſhunned, notwithſtanding the conſtipated ſtate of the canal; for ſince the conſtipation ariſes from the inflammatory condition of the inteſtines, every acrid ſtimulant applied to them muſt inevitably augment, rather than alleviate the diſeaſe. See Cathartic.

HYDRANGEA, in *Botany*, from ὑδωρ, *water*, and αγγος, *a veſſel*, ſo named by Gronovius, in alluſion to the pitcher-like ſhape of the ſeed-veſſel. Linn. Gen. 222. Schreb.

299. Willd. Sp. Pl. v. 2. 633. Mart. Mill. Dict. v. 2. Ait. Hort. Kew. v. 2. 76. Juſſ. 310. Lamarck. Dict. v. 3. 150. Illuſtr. t. 370. Gærtn. t. 30. (Hortenſia; Juſſ. 214. Primula; Loureir. Cochinch. v. 1. 104.) Claſs and order, *Decandria Digynia.* Nat. Ord. *Succulentæ*, Linn. *Caprifolia*, Juſſ.

Gen. Ch. *Cal.* Perianth of one leaf, ſuperior, five-toothed, permanent, ſmall. *Cor.* Petals five, equal, roundiſh, larger than the calyx. *Stam.* Filaments 10, longer than the corolla, but ſometimes alternately longer and ſhorter themſelves; anthers roundiſh, twin. *Piſt.* Germen roundiſh, inferior; ſtyles two, ſhort, diſtant; ſtigmas obtuſe, permanent. *Peric.* Capſule roundiſh, twin, the double ſtyle forming two beaks to it, angulated with many nerves, crowned by the calyx, two-celled by a tranverſe partition, opening by a hole between the horns. *Seeds* numerous, angulated, pointed, very ſmall.

Eſſ. Ch. Calyx ſuperior, five-toothed. Corolla of five petals. Capſule of two cells and two beaks, containing many ſeeds.

1. H. *hortenſis.* Chineſe Guilder-roſe. Willd. Sp. Pl. No. 2. Sm. Ic. Pict. t. 12.—"Leaves elliptical, ſerrated, very ſmooth. Stamens all of an equal length."—This ſhrub is a native of the Eaſt, and is uſually cultivated in the gardens of China and Japan, from whence it was introduced into Kew gardens by ſir Joſeph Banks in 1790.—*Root* fibrous, much branched, whitiſh. *Stems* erect, ſhrubby, having a ſmooth brown bark. *Branches* oppoſite, leafy, green, ſpeckled with dark purple ſpots, flowering at the top. *Leaves* oppoſite, ſpreading and curved backwards, bright green, veiny. *Cluſters* of flowers terminal, of a beautiful roſe-colour, inodorous, green when young as well as in decay. *Calyx* only ſeen by us in a luxuriant ſtate of deformity, very large, compoſed of four (rarely three or five) ſpreading unequal, obovate leaves, which are entire, ſmooth, roſe-coloured, ſlightly ribbed and permanent. *Petals* generally four, nearly equal, ſmall, obovate, concave, of the colour of the calyx, fading. *Filaments* awl-ſhaped, red; anthers greyiſh, with yellow pollen. *Styles* purple.

This plant, which is nearly allied to *Viburnum* and *Sambucus*, is much eſteemed for its very elegant flowers and eaſy culture. We have ſelected *H. hortenſis* for a ſpecimen of the genus, as it is the moſt beautiful ſpecies, out of the four deſcribed by Willdenow. The others, *H. arboreſcens*, *radiata*, and *quercifolia*, are of American origin, tolerably hardy in the gardens of Europe.

Hydrangea, in *Gardening*, comprehends plants of the ſhrubby and flowering perennial kinds; of which the ſpecies cultivated here are; the ſhrubby hydrangea (H. arboreſcens); and the garden hydrangea, or Chineſe guilder roſe (H. hortenſis.)

The latter of theſe ſorts is held in high eſtimation on account of the number of elegant flowers which it diſplays.

Method of Culture.—The firſt of theſe plants is increaſed by ſlipping off or parting the roots in the early autumn, and planting them out where the plants are to grow. It ſucceeds beſt on a moiſt ſoil, and requires no trouble but being kept free from weeds, by digging the ground about it in the winter. When the ſtems are deſtroyed in ſevere froſts, new ones are put forth in the enſuing ſpring ſeaſon.

And the ſecond ſort is eaſily increaſed by planting cuttings of the young ſhoots, in pots of rich loamy earth in the ſpring, plunging them in a moderate hot-bed. When they have ſtricken good root, they ſhould be removed, with balls of earth about their roots, into ſeparate pots, and be placed in the green-houſe or under other ſimilar protection.

But though this plant is capable of ſtanding the open air in mild winters, in warm dry ſituations, it does not flower ſo well as in the green-houſe. Superfluous plants ſhould therefore only be employed in this way as they may frequently be deſtroyed.

Theſe are ornamental plants; the former in fronts of clumps and borders, and the latter among green-houſe collections and other potted plants, where it produces a fine appearance during the flowering ſeaſon.

HYDRAOTES, in *Ancient Geography*. See Rauvee.

HYDRARGYROSIS, a term uſed by the chirurgical writers to expreſs the anointing of the body with a mercurial unction, in order to the raiſing a ſalivation.

HYDRARGYRUM, Ὑδραργυρον, a name given to mercury, or quickſilver.

The word is formed of ὕδωρ, *aqua*, *water*, and αργυρος, *argentum*, *ſilver*; *q. d. water of ſilver*, on account of its reſembling liquid or melted ſilver. For an account of mercury and its different preparations, ſee Mercury.

HYDRASPIS, *water-ſhield*, or *water buckler*, a machine of wood, invented by John Chriſtopher Wagenſeil, a German, by the help of which a perſon may walk on the water, without fear of ſinking. It encompaſſes the breaſt, ſerving the office of the cheſt in water-fowl, and is furniſhed with apertures for receiving a quantity of food, or for preſerving money, writings, or other valuable things, in caſe of an inundation. The perſon who uſes it is provided with paddles for the feet, conſiſting of moveable flaps of very thick leather, which open and ſhut, and are faſtened to a wooden ſole, on which the foot reſts, by an iron pin paſſing through their hinges. They are faſtened to the feet by ſtraps or thongs. The inventor of this machine made trial of it in a whirlpool of the Danube, where he moved about in the current without danger. He propoſes, that this machine ſhould be uſed in a ſhipwreck, in eſcaping the danger of ſudden inundation in paſſing a river, for the ſervice of war, and hunting and taking water-fowl, &c. Act. Erud. ann. 1691, p. 40.

HYDRASTIS, in *Botany*, ſo named by Mr. John Ellis, who probably, as profeſſor Martyn conjectures, received it from Miſs Colden, daughter of governor Colden. From ſome confuſion, perhaps, in the hiſtory of the diſcovery, or of the communication, Linnæus was led to underſtand the appellation given by his friend as intended to commemorate "a young lady of noble birth;" whereas it appears rather to have a reference to the native ſituation of the plant, from ὕδωρ, *water*, or ὕδρεια, *an imbibing of water.*—Linn. Gen. 283. Schreb. 379. Willd. Sp. Pl. v. 2. 1339. Mart. Mill. Dict. v. 2. Ait. Hort. Kew. v. 2. 273. Juſſ. 232. Lamarck Dict. v. 3. 151. Illuſtr. t. 500—Claſs and order, *Polyandria Polygynia.* Nat. Ord. *Multiſiliquæ?* Linn. *Ranunculaceæ*, Juſſ.

Gen. Ch. *Cal.* Perianth none. *Cor.* Petals three, ovate, regular. *Stam.* Filaments numerous, linear, compreſſed, a little ſhorter than the corolla; anthers compreſſed, obtuſe. *Piſt.* Germens numerous, ovate, forming themſelves into an ovate head; ſtyles very ſhort; ſtigmas broadiſh, compreſſed. *Peric.* Berry compoſed of oblong grains. *Seeds* ſolitary, oblong.

Eſſ. Ch. Calyx none. Petals three. Nectary none. Berry compoſed of ſingle-ſeeded grains.

1. *H. canadenſis.* Canadian Yellow-root. Linn. Sp. Pl. 784. (Warneria canadenſis; Mill. Dict. 190. t. 285. Hydrophyllum verum canadenſium; Linn. Sp. Pl. ed. 1. 146.)—This bog plant is a native of Canada, and flowers in May or June. It was firſt cultivated by Mr. P. Miller in 1759.—*Root* of a deep yellow colour within, whence its Engliſh name, throwing out fibres in the ſpring. *Stems* about nine inches high, at firſt light green, but afterwards tinged

with purple, hairy towards the top. *Leaves* two on each ſtem, petioled, emarginate at the baſe, palmate, ſerrate, three, four, or five-lobed, the lobes having a ſmaller lobe on each ſide, changing from light to dark green, or a purpliſh colour. *Flower* ſolitary, white, of ſhort duration. *Fruit* red, and ſucculent. *Berry* reſembling the raſpberry or mulberry more than the ſtrawberry.—Juſſieu ſays it has the fruit and habit of a *Rubus*, and is allied to *Podophyllum*.—It is remarked by Linnæus, in his herbarium, that the flowers of this plant were unknown to his pupil Kalm. We are not aware that it has been figured by any author except Miller, as quoted above.

HYDRATE, in *Chemiſtry*, a term that has been applied by ſome modern chemiſts to expreſs the chemical union of water with any ſubſtance, and more particularly with certain metallic oxyds; thus from the ſalts of copper precipitates are thrown down by the alkalies, and ſome of the earths, which are either of a green or blue colour, and which were formerly regarded as mere oxyds. According to Prouſt, the *green* is a ſub-ſalt, or an oxyd with a ſmall portion of acid, and a quantity of water; the *blue* a compound of black oxyd with water alone, in the proportion of 24 parts of water to 76 of oxyd, and is denominated a *hydrate* of copper. The water is thought to be in a ſtate of chemical combination, and to be the cauſe of the blue colour. This hydrate, by the ſame chemiſt, is ſuppoſed to be the baſe of a number of ſalts. The water may be expelled with a low red heat.

HYDRAULICON, in the *Ancient Muſic*, an organ blown by the fall of water. From the deſcription of this inſtrument by Vitruvius, cap. xiii. it ſeems as if the water which forced the air into the pipes was pumped by men. Indeed, it has been much diſputed whether it was played with *fingers*, by means of levers or *keys*; and yet the deſcription of it by Claudian ſeems ſuch a one as would ſuit a modern organ, only blown by water inſtead of bellows.

> "Vel qui magna levi detrudens murmura tactu
> Innumeras voces ſegetis moderator aënæ
> Intonet *erranti digito*, penituſque trabali
> Vecte laborantes in carmina concitet undas."

In Athenæus, lib. iv. p. 174, there is a hiſtory and deſcription of this inſtrument. He tells us that it was invented in the time of the ſecond Ptolemy Euergetes, by Cteſibius, a native of Alexandria, and by profeſſion a barber: or rather, that it was improved by him, for Plato furniſhed the firſt idea of the hydraulic organ, by inventing a night-clock, which was a *clepſydra*, or water-clock, that played upon flutes the hours of the night at a time when they could not be ſeen on the index.

The anecdote in Athenæus concerning the mechanical amuſements of the great ideal philoſopher, is curious. What a condeſcenſion in the *divine* Plato to ſtoop to the invention of any thing uſeful! This muſical clock muſt have been wholly played by mechaniſm. But neither the deſcription of the hydraulic organ in Vitruvius, nor the conjectures of his innumerable commentators, have put it in the power of the moderns either to imitate, or perfectly to conceive the manner of its conſtruction; and it ſtill remains a doubt whether it was ever worthy of the praiſes which poets have beſtowed upon it, or ſuperior to the wretched remains of the invention ſtill to be ſeen in the grottos of the vineyards, near the city of Rome.

The pneumatic organ, or inſtrument blown by bellows, and furniſhed with keys, ſuch as are in preſent uſe, though perhaps a deſcendant from the hydraulicon, will have a diſtinct article, where its invention will be diſcuſſed, and its improvements traced, among thoſe of modern inſtruments.

HYDRAULICS, that part of ſtatics which conſiders the motion of fluids, and particularly water; with the application of it in artificial water-works. Hydraulics, as diſtinguiſhed from hydrodynamics, is that ſcience which treats of certain machines or engines, in which fluids are principally concerned.

The word is derived from the Greek, ὑδραυλος, *ſounding water*, formed of ὕδωρ, *aqua*, *water*; and αυλος, *tibia*, *pipe*, or *flute*: the reaſon of which is this, that at the time of the firſt invention of organs, being unacquainted with the method of applying bellows to blow them, they made uſe of a cataract or fall of water to make a wind, and ſound them.

To hydraulics belong not only the conducting and raiſing of water, with the conſtruction of engines for thoſe purpoſes, but alſo the laws of the motion of fluid bodies, the nature of ſprings, the courſe of rivers, the agitation of waves, the theory of the tides, &c.

Hydroſtatics explain the equilibrium of fluids, or the gravitation of fluids at reſt: upon removing that equilibrium, motion enſues; and here hydraulics commence.

Hydraulics, therefore, ſuppoſe hydroſtatics; and the generality of writers, from the immediate relation between the two, join them together, and call them both either hydraulics or hydroſtatics.

The laws of hydraulics the reader will find under FLUID. The art of raiſing waters; with the ſeveral machines employed for that purpoſe, as ſiphons, pumps, ſyringes, fountains, jets d'eau, fire engines, &c. are deſcribed under theſe, and other articles of a ſimilar kind, reſpectively.

The ſcience of hydraulics muſt be allowed to be of as great importance to civil life, and eſpecially to a maritime nation, as any department of practical mechanics. Let us only reflect for a moment to what ſtate the metropolis of England would be reduced, if deprived of pipes for the conveyance of water, of pumps, and fire engines; and how much the commerce of the whole kingdom has been facilitated and increaſed by the formation of navigable canals, and we ſhall be convinced of the importance and utility of the art of modifying the motion of water, and of the principles of hydraulics, on which that art depends.

The principal writers who have cultivated and improved hydraulics, are Archimedes in his Liber de Inſidentibus Humido; Hero in his Liber Spiritualium, who is the firſt who has written on hydraulic machines; Marinus Ghetaldus in his Archimedes promotus; Jo. Ceva, in his Geometria Motus; Jo. Bap. Balianus, De Motu Naturali Gravium, Solidorum et Liquidorum; Mariotte, in his Mouvement des Eaux et autres Fluides; Boyle, in his Hydroſtatical Paradoxes; Fr. Tertius de Lanis, in his Magiſterium Naturæ et Artis; Lamy in his Traité de l'Equilibre des Liqueurs; Rohault; Dr. Wallis in his Mechanics; D. Guglielmini, in his Menſura Aquarum Fluentium, where the higher laws of hydraulics are reduced to practice; ſir Iſaac Newton, in his Phil. Nat. Prin. Mathemat.; Varignon, in the Memoirs of the Royal Academy of Sciences; Jurin, Belidor, Bernouilli, Solomon de Caux, in a French treatiſe of Machines, and chiefly hydraulic ones; Caſp. Scottus in his Mechanica Hydraulico-pneumatica; De Chales, in his Mundus Mathematicus; Boecler, in his Architectura Curioſa; Luc. Antonius Portius; Herman; Wolfius; S'Graveſande; Muſchenbroeck; Leopold; Sturmius, in his Treatiſe on the Conſtruction of Mills; Switzer's Hydroſtatics; Euler; Emerſon; Deſaguliers; Clare; Ferguſon; Borda; D'Alembert; Lagrange; Boſſut; Buat; Ximenes; Lametherie; M. Young; Bernhard; Prony; Lorgna; Vince; Venturi; &c. &c. &c.

HYDRAULO-PNEUMATICAL, a compound term, applied by ſome authors to ſuch engines as raiſe water by means of the ſpring of the air. See AIR, WATER, and ENGINE.

Mr. Boyle mentions a very pretty fountain, which he calls hydraulo-pneumatical; made by the ſpring of the air preſſing up water in a pipe upon the air's being exhauſted out of a receiver, and thus the weight of the atmoſphere taken off. See FOUNTAIN.

HYDREA, in *Ancient Geography*, an iſland of the Hermionic gulf, ſituated S.E. of the Argolide peninſula. See HERMIONE.

HYDRELÆON, Ὑδρελαιον, compounded of ὑδωρ, *water*; and ελαιον, *oil*, in *Pharmacy*, a mixture of common oil and water.

The hydrelæon was taken internally to excite vomiting; externally it is anodyne, and promotes ſuppuration.

HYDRE'NTEROCE'LE, a term in *Surgery*, denoting a hydrocele complicated with an inteſtinal hernia. Hydrenterocele is compounded of three Greek words, *viz.* ὑδωρ, *water*, εντερον, *an inteſtine*, and κηλη, *a tumour*. See HYDROCELE.

HYDRIA, in *Ancient Geography*, an iſland of the Adriatic ſea, placed by P. Mela before the Electrides.

HYDRIA, or *Idria*, in *Geography*, a town of Germany, in the duchy of Carniola. N. lat. 46° 14'. E. long. 14°.

HYDRIA, in *Mythology*, the name given by the Egyptians to the god of the water, which they repreſented by a vaſe, perforated on all ſides. According to Vitruvius (lib. viii.) the prieſts upon certain days filled this vaſe with water, adorned it with great magnificence, and then placed it upon a kind of public theatre, where all proſtrated themſelves before the vaſe, with hands lifted up to heaven, and gave thanks to the gods for the benefits they received from this element. The intention of this ceremony was to teach the Egyptians that water was the principle of all things, and had communicated life and motion to every thing that breathes.

HYDRIAPHORÆ, compounded of ὑδωρ, *water*, and φερω, *I carry*, among the *Athenians*, a deſignation given to wives of ſtrangers reſiding at Athens.

They were thus called, as being obliged during the proceſſion of the feſtival Panathenæa, to carry veſſels of water. Potter, tom. i. p. 56 and 401.

HYDRIAS, in *Ancient Geography*, a country of Aſia Minor, in the vicinity of the river Marſyas. Herodotus.

HYDRINUS, a name given by ſome authors to the *ophites*, or ſerpent-ſtone.

HYDROCANISTERIUM, a fire-engine; or a machine which ſpouts water plentifully, and with force; uſed to be applied to the extinguiſhing of fires, and conflagrations of houſes, &c. We have various contrivances to this effect: the firſt, and which is, as it were, the baſis of all the reſt, is a pump incloſed in a ciſtula, or wooden vehicle filled with water, and mounted on wheels; the pump being wrought with long levers which come out of the ciſtula: and the water it raiſes directed to the place by means of a jointed tube.

The Dutch and others uſe a long flexible tube of leather, ſail-cloth, or the like, which they carry or conduct in the hand from one room to another as occaſion requires; ſo that the engine may be applied where the fire is only within-ſide, and does not burſt out to expoſe it to its external action. To improve on this original fire-engine, they have ſince contrived to make it yield a continued ſtream; by ſubſtituting a forcing or preſſing pump in lieu of the ſucking pump. See FIRE-*Engine*, and *Forcing* PUMP.

HYDROCANTHARUS, in *Entomology*. See DYTISCUS *Marginalis*.

HYDROCARBONATE GAS, in *Agriculture*, an aerial fluid formed during the decompoſition of water, which is ſaid to be uſeful in promoting the proceſs of vegetation. It is ſuppoſed by the author of the work entitled "Phytologia," that during the proceſs of putrefaction "carbon is not only converted into carbonate acid, but there appears to be a decompoſition of water, as is known by the ſmell of hydrogen; and it is probable that this inflammable body may unite with carbon, as in hydrocarbonate gas, and thus render them both ſoluble in water, and abſorbable by the veſſels of vegetable roots, without their paſſing into an acid or gaſeous form, and may contribute much to the nutriment of vegetables." This hint requires the further attention of the philoſophical agriculturiſt.

HYDROCARDIA, a term invented by Hildanus to expreſs a ſerous, ſanious, or purulent tumour of the pericardium.

HYDROCELE ſignifies, in *Surgery*, any preternatural collection of water in the ſcrotum. The term is derived from ὑδωρ, *water*, and κηλη, *a tumour*. In this diſeaſe the fluid may occupy various parts of the ſcrotum. In ſome caſes it is ſituated in the cellular membrane, which affection receives the appellation of *hydrops ſcroti*. In moſt inſtances it is contained in the tunica vaginalis teſtis. In ſome examples it is lodged within the ſheath of the ſpermatic cord; in others it is included in a preternatural cyſt; occaſionally the water is contained in a true hernial ſac; therefore we have five different kinds of hydrocele diſtinguiſhed by the particular ſituation of the fluid.

Hydrops Scroti.—The firſt ſpecies, namely, the hydrops ſcroti, is nothing more than an œdematous ſwelling of the ſcrotum. The water is diffuſed throughout all the cellular membrane of this part of the body, cauſing every where an equal diſtenſion, ſo that the raphe is not puſhed out of the central ſituation which it naturally holds. The ſwelling has all the character of œdema; the preſſure of the end of the finger makes an impreſſion upon it; the ſurface of the ſcrotum is ſmooth and ſhining, without any veſtige of the corrugations; the part retains its natural colour, is generally very ſoft, and has a cold feel. In moſt caſes the prepuce is alſo affected with a ſimilar ſort of ſwelling, ſo that the patient is actually troubled with a phymoſis. In certain inſtances veſicles make their appearance on the integuments of the penis. We may add, that the tumour is quite free from pain. In ſome caſes one ſide of the ſcrotum is more diſtended than the other, and, conſequently, the raphe is not ſituated in the middle. It is deſerving of notice that women are ſometimes affected with a ſimilar ſwelling of the labia.

The hydrops ſcroti is generally a ſymptom of another conſtitutional diſeaſe, eſpecially of aſcites and anaſarca, in which event it is commonly attended with an œdematous ſwelling of the feet. However, it is occaſionally quite a local diſeaſe; and in this caſe it is uſually a conſequence of preſſure upon the returning veſſels, produced by a diſlocated thigh-bone, a badly made truſs, an indurated omental hernia, &c. Sometimes the diſeaſe is noticed in new-born children, and it has been obſerved to follow contuſions of the ſcrotum, and expoſure either of this part, or of the whole body, to certain degrees of cold.

An analogous diſeaſe may proceed from an extravaſation of urine in the cellular membrane of the ſcrotum. This particular caſe is ſometimes the conſequence of a retention of urine. When the laſt affliction has attained a high degree, gangrenous ſpecks are apt to be formed on the poſterior and inferior parts of the bladder, ſo as to let the urine eſcape into the cellular ſubſtance of the perineum and ſcrotum. In this inſtance the ſwelling of the latter part originates ſuddenly; and in proportion as it increaſes, all the ſymptoms of a preternatural diſtention of the bladder undergo a diminution. The urine ſometimes paſſes through an ulcerated aperture in the urethra into the cellular membrane of the ſcrotum. Hence fiſtulæ in perineo may be attended with this ſort of extravaſation. When, alſo, by external violence the tunica vaginalis has been burſt, while diſtended with water, the fluid has been known to eſcape from the cavity of that membrane into the cellular ſubſtance of the ſcrotum, the caſe changing at once from a common hydrocele into an hydrops ſcroti. Laſtly, we have to remark, that a ſimilar extravaſation of fluid ſometimes happens in the palliative operation for the ordinary hydrocele, when the puncture is executed with a lancet, and the opening in the ſkin happens to ſlip away from that in the tunica vaginalis, while the water is flowing out.

In the treatment of the hydrops ſcroti, it is always an indication to remove the cauſes of the diſeaſe, whether they are of a local or general nature. When a dropſy of the abdomen is fortunately cured by medical means, the hydrops ſcroti ſpontaneouſly diſappears. The ſwelling of the ſcrotum, likewiſe, proceeding from the preſſure of an ill made truſs, a diſlocated thigh-bone, &c. will ſubſide as ſoon as ſuch preſſure is removed. But ſurgical writers appear to coincide in opinion, that caſes may preſent themſelves in practice where local treatment is indiſpenſably proper. An inſtance of this kind may be where the general or local cauſe does not admit of a removal in a complete or ſufficiently ſpeedy manner, and where the tumour of the ſcrotum is attended with ſerious inconvenience, or any degree of danger. Thus, when urine is effuſed into the ſcrotum an immediate operation is proper, in order to avert inflammation, ſuppuration, ſloughing, and fiſtulæ, effects which would otherwiſe quickly follow. In caſes of the common hydrocele of the tunica vaginalis, eryſipelatous inflammation, ulcerations, and gangrenous complaints may occur when the ſwelling is exceedingly large. The prepuce is ſometimes ſo ſwollen that the urine cannot eſcape from the orifice of the urethra. Yielding as the integuments of the ſcrotum are, they may yet be burſt by being exceſſively diſtended with fluid, as the obſervations of Mr. Warner confirm. Local means are alſo obviouſly requiſite whenever the hydrops ſcroti ariſes from a local cauſe.

The moſt common and effectual means of relieving the hydrops ſcroti is letting the fluid out of the cellular membrane by ſuitable punctures. In a few inſtances, indeed, a milder plan will anſwer the purpoſe. The complaint in new-born infants may uſually be cured by bathing the ſcrotum with warm wine. The hydrops ſcroti, conſequent to a bruiſe, or expoſure to cold, may in general be very ſoon diſperſed by the uſe of a ſuſpenſory bandage, and repeatedly waſhing the tumour with brandy, lime-water, wine, vinegar, or any decoction of aſtringent and aromatic herbs. The ſame remedies will alſo be found to avail when the ſwelling remains after its cauſe has been removed. When the tumour is exceedingly large, and the ſymptoms preſſing, the ſurgeon is not to conſume time in the trial of theſe applications, but immediately make the neceſſary punctures. If urine ſhould happen to be the fluid in the cellular membrane of the part, proper inciſions ſhould be directly made for its eſcape, leſt inflammation, abſceſſes, and gangrenous miſchief enſue.

The fluid of hydrops ſcroti may be diſcharged either by an inciſion or a puncture. Five or ſix ſuperficial ſcarifications with a lancet will in general be found to anſwer the purpoſe. If ſuch openings ſhould be cloſed the day after making them, before all the fluid has been diſcharged, the practitioner is called upon to uſe the lancet in the ſame manner again. When inciſions are preferred, it is cuſtomary to make one about an inch long on each ſide of the raphe, and deep enough to extend through the ſkin into the cellular membrane. Scarifications are commonly deemed the moſt adviſable. It is true that they do not let out the fluid ſo quickly as inciſions, but they are ſafer, as every material wound in dropſical parts is very apt to fall into a gangrenous ſtate. It is remarked, that frequently the inciſion ſoon begins to be painful, its edges to be affected with hardneſs and inflammation, while an eryſipelas ſeizes the whole circumference of the wound, and rapidly induces gangrenous diſorder.

Such evils are moſt liable to occur when the operation has been performed at a period when the ſcrotum is exceſſively diſtended, and already ſomewhat affected with an eryſipelatous redneſs, and when care has not been taken to keep the parts quite dry, during the iſſue of the fluid. Hence it is an important rule to keep the ſcrotum from being wet, by laying over and under it dry compreſſes. When pain and inflammation follow the operation, the moſt eligible applications are the ſaturnine lotion, lime-water, the decoction of bark, a ſolution of alum, &c. Should mortification actually take place, the patient is always in conſiderable danger, and the event is too frequently fatal. Sometimes the whole ſcrotum ſloughs and is caſt off, both the teſtes being left entirely denuded. Notwithſtanding all this miſchief, the teſtes uſually become furniſhed with a new ſort of covering.

We know of only one example in which inciſions are decidedly better than ſcarifications, and this is where urine is lodged in the cellular membrane of the ſcrotum, and where a ſpeedy diſcharge of this irritating fluid is urgently required.

Of the Hydrocele of the Tunica Vaginalis Teſtis—This is the chief and moſt intereſting form of the diſeaſe. It is ſituated in the cavity of the tunica vaginalis teſtis. It makes its firſt appearance as an oval ſwelling at the lower end of the ſpermatic cord, ſeeming, indeed, to ariſe from the teſtis itſelf. In proportion as it increaſes in ſize it approaches more and more towards the abdominal ring; but between this opening and the upper part of the tumour, the ſpermatic cord may always be felt quite free. The ſwelling continuing to grow larger, it arrives at length as high as the ring, ſo that the ſpermatic cord cannot be at all diſtinguiſhed; yet it is worthy of notice that the upper roundiſh end of the tumour may ſtill be plainly felt, particularly on laying the hand under the ſcrotum, and preſſing the ſwelling upwards; for when this is done the upper margin of the tumour projects ſo much forwards that it may always be diſtinctly perceived. The finger can even be put between the upper part of the ſwelling and the abdominal ring, by which means the ſurgeon can conſtantly aſcertain that the tumour does not come out of the latter aperture. Beſides, the diſeaſe cannot be eaſily miſtaken for a hernia, eſpecially as the ſwelling is ſubject to no variation of ſize, whether the patient is in an erect or recumbent poſture, whether he coughs, holds his breath, or the tumour itſelf is compreſſed. We may alſo obſerve that all the other general ſymptoms of a hernia are abſent.

The ſwelling is commonly of an oval ſhape, the greateſt diameter extending downwards. Sometimes the poſition of the tumour is oblique, or even completely tranſverſe. In this laſt circumſtance it may be neceſſary to make the puncture on the right ſide of the ſcrotum in performing the palliative operation, notwithſtanding the collection of fluid may be ſituated in the cavity of the left tunica vaginalis, and *vice verſâ.* Probably this unuſual ſhape of a hydrocele may be cauſed by tight breeches or the preſſure of the ſuſpenſory bandage. The larger the tumour is the rounder does its figure become; but in ſome caſes the ſhape is very different from what it is in others. Hydroceles have been obſerved to have occaſionally quite a cylindrical appearance. The tumour is occaſionally divided by a ſort of contraction. When a hydrocele is the conſequence of inflammation, the tunica vaginalis is ſometimes adherent in different places to the tunica albuginea, and of courſe the ſwelling has an irregular knobby ſhape.

The tumour feels like a bladder diſtended with water. In its commencement it is ſoft and yielding; but the tenſion and hardneſs increaſe in proportion to the quantity of fluid, and the quickneſs with which it has accumulated. It deſerves attention, however, that there are ſome hydroceles of conſiderable magnitude, which are ſo remarkably ſoft that they may be made quite flat by preſſure, and allow the teſtes to be plainly felt. The freer the ſwelling is from tenſion the more evident is the fluctuation; but even in caſes which are exceedingly tenſe a certain degree of fluctuation can be diſtinguiſhed on applying the palms of the hands on oppoſite ſides of the tumour. Schmucker has ſeen hydroceles which felt as hard as a ſarcocele, and Saviard mentions their being occaſionally attended with the hardneſs of horn. In ſuch inſtances the tunica vaginalis is in general thickened and indurated in an extraordinary degree, and, in certain caſes, that membrane, inſtead of containing merely an aqueous ſecretion, has been found to include cyſts or veſicles filled with a yellow fluid.

When either the patient himſelf or the ſurgeon handles the tumour, the ſame kind of ſenſation is communicated to the fingers, whatever part of the ſwelling is touched. The ſurgeon perceives every where the ſame kind of feel as he would be ſenſible of in handling an elaſtic diſtended bladder, and the patient ſuffers no pain from any manual examination of the diſeaſe. The whole circumference of the ſwelling is ſmooth and even, except juſt at one place, which is where the teſtis is ſituated, and is uſually at the hinder and middle part, though not unfrequently at the upper portion of the tumour. In ſuch ſituation the ſurgeon may feel an inequality and an inelaſtic hardneſs, and when the part is compreſſed the patient is afflicted with the peculiar pain which is always produced by ſqueezing the teſtis. This gland may almoſt always be felt at the back part of the ſwelling, at various heights, according as the tunica vaginalis happens to have been dilated upwards or downwards by the increaſing quantity of the fluid. B. Bell twice ſaw the teſtis in front of the tumour. The ſame gland, though at the back part of the ſwelling, has been found adhering to the fore part of the tunica vaginalis, in conſequence of inflammation, which was prior to the hydrocele. Mr. Elſe had an opportunity of ſeeing a caſe, where the oval ſwelling of a hydrocele was in an horizontal poſition from before backwards, while the teſtis could be plainly felt at the bottom of the ſcrotum.

When the end of the finger is preſſed upon the hydrocele of the tunica vaginalis, it does not leave after it any impreſſion or dent. How large ſoever the ſwelling may be, the ſkin of the ſcrotum always retains ſome veſtiges of the corrugations, or, at leaſt, is never ſo ſmooth and ſhining as it is in the caſe of hydrops ſcroti. Frequently, when the tumour has acquired a conſiderable ſize, the penis becomes retracted in ſuch a manner, that the prepuce has ſomewhat the appearance of a navel at the upper and forepart of the ſcrotum. The diſeaſe is entirely free from pain, except when it increaſes very quickly, in which circumſtance a degree of uneaſineſs is experienced in the ſwelling, at the ſame time that painful ſenſations are felt in the loins, probably excited by the weight of the tumour, when the patient has been a long while in a ſtanding poſture. We find, therefore, that ſuch pain may be relieved by the patient's lying down. As this ſpecies of hydrocele commonly affects only one ſide, or ſince, when in a few inſtances, it happens at the ſame time on both ſides of the ſcrotum, it is not equally large on each ſide, the raphe is never ſeen exactly in the middle. The integuments of the ſcrotum have their natural colour. Moſt hydroceles of the tunica vaginalis are attended with a certain degree of tranſparency, and the knowledge of this circumſtance is of infinite importance to the practitioner, ſince it will often enable him to form an accurate judgment reſpecting ambiguous caſes. In order to learn whether the ſwelling is tranſparent, the chamber ſhould be darkened, while a lighted taper is held juſt on one ſide of the ſcrotum, while the ſurgeon looks at the other, which ought to be in the ſhade. It is neceſſary, however, for every ſurgeon to be aware that tranſparency is by no means a conſtant ſymptom of a hydrocele, and is never preſent, either when the tunica vaginalis is preternaturally thick and indurated, or when it is filled with a dark turbid fluid, or cyſts reſembling hydatids.

By paying attention to the foregoing ſymptoms, the ſurgeon will be able, in all ordinary caſes, to diſcriminate the hydrocele of the tunica vaginalis from every other kind of tumour to which the ſcrotum is liable. But yet it muſt be allowed that there are caſes where the diagnoſis is attended with conſiderable difficulty, certain diſeaſes having ſo much ſimilitude to the hydrocele of the tunica vaginalis, that they may deceive the moſt attentive and experienced ſurgeon. One of ſuch caſes is the ſarcocele, which has the ſame ſhape as the hydrocele, and, like it, is ſituated at the lower end of the ſpermatic cord. The chief difference, therefore, between the two diſeaſes, ſeems to be, that the ſarcocele is hard, while the hydrocele has a ſoft, yielding, elaſtic feel, accompanied with a fluctuation. The ſarcocele itſelf, however, is not always remarkably hard, and the hydrocele is now and then very indurated. The ſarcocele, indeed, is not tranſparent; neither is the hydrocele in certain inſtances; and theſe are caſes where a miſtake may eaſily be made. Still, with due attention, both diſeaſes may be diſcriminated with tolerable preciſion. The ſarcocele, when held in the ſurgeon's hand, ſeems heavier than the hydrocele. The teſtis is ſeldom equally indurated every where, and the ſarcocele is uſually much ſofter in ſome places than others. The hydrocele preſents the ſame kind of feel at every point, except behind, where the teſtis is felt. When, in the caſe of hydrocele, preſſure is made in this latter ſituation, the patient experiences a much more acute ſenſation than when the preſſure is made upon any other part of the tumour; but in the example of ſarcocele, the patient commonly has the ſame kind of feel, let the preſſure be applied to any part of the ſwelling whatſoever. The hydrocele may be compared with a bladder full of water, the ſurface of the tumour being every where ſmooth and even, except in the ſituation of the teſtis. This gland itſelf, when hardened, ſeldom undergoes a regular, uniform enlargement; but generally has a ſurface more or leſs uneven. When the upper portion of the ſpermatic cord can be felt, and it ſeems quite hard and thickened, the ſurgeon has reaſon to ſuſpect that the caſe is a ſarcocele. Laſtly, though a hydrocele, when gently handled, may ſeem to be conſiderably hard; yet, on being more ſtrongly compreſſed, it will generally betray a ſoft elaſtic feel, which is never the caſe with an indurated ſarcocele.

A hydrocele is ſometimes conjoined with a fleſhy enlargement of the teſtis, which caſe is well known among ſurgeons under the appellation of *hydro-ſarcocele.* As the diſeaſed teſtis is here ſurrounded with water, it cannot be felt nor examined by the fingers. However, when an unuſual degree of hardneſs is perceptible at the back part of the tumour, where the teſtis is ſituated, or when the upper portion of the ſpermatic cord is found to be quite indurated, the ſurgeon has reaſon to ſuppoſe that the teſtis is affected with ſarcocele. The latter is commonly the original and principal diſeaſe, the hydrocele firſt coming on ſubſequently to the enlargement of the teſtis. To the experienced practitioner this circumſtance often affords uſeful light. We learn from the obſervations of that very excellent ſurgeon, Mr. Warner, that omental herniæ in young children are ſometimes ſo tranſparent, that they may be miſtaken for hydroceles. But all the other ordinary characters of theſe fluid ſwellings are abſent. A cyſtocele, or hernia of the urinary bladder, has ſome reſemblance to a hydrocele, though the two affections may eaſily be diſtinguiſhed from one another by paying attention to the particular ſymptoms of each, as deſcribed in a foregoing part of this work, (ſee Hernia,) and in the preſent article.

The diagnoſis is always apt to be attended with a degree of obſcurity, when the hydrocele is complicated with other diſeaſes of the ſcrotum. Sometimes it is conjoined with a hernia. On other occaſions, the hydrocele of the tunica vaginalis exiſts in conjunction with one of the ſpermatic cord. The ſurgeon can only acquire a perfect knowledge of ſuch caſes by paying cloſe attention to the peculiar ſymptoms of each of the diſeaſes. When the requiſite information cannot be thus obtained, it may often be procured by adverting to circumſtances which preſented themſelves in an early ſtage of the caſe; for frequently the hydrocele is at firſt ſimple, and does not become complicated till an advanced period. The nature of the caſe is often elucidated on the palliative operation for the hydrocele being performed, as the other diſeaſe of the ſcrotum becomes quite obvious immediately the fluid is diſcharged from the tunica vaginalis.

The ſpecies of hydrocele, now engaging our attention, continues for a long while unattended with any ſerious inconvenience, or preſſing ſymptoms: it only annoys the patient by its ſize and weight. When it is exceedingly large, the penis is drawn completely back, ſo that the urine dribbles over the forepart of the ſcrotum, and, unleſs particular care be taken to maintain cleanlineſs, is liable to excite inflammation and painful excoriations. When a hydrocele is the conſequence of an inflammation of the teſtis, the fluid generally accumulates with great quickneſs. But the progreſs of the diſeaſe is occaſionally ſo ſlow, that the palliative operation has not been required till twenty years after the commencement of the diſorder. In general, the water only collects in one tunica vaginalis; ſometimes in both. In the latter kind of caſe, a preternatural communication has been noticed between the oppoſite ſides of the ſcrotum, though we believe ſuch a circumſtance is very uncommon. See Richter's Anfangſgrunde der Wundarzneykunſt, Band 6. Kapitel 5.

The hydrocele appears to be one of thoſe diſeaſes, the cauſes of which are far from being well underſtood. In a natural, healthy ſtate, the cavity of the tunica vaginalis always contains a ſmall quantity of a fine fluid, exhaled from capillary arteries, and conſtantly abſorbed by veſſels for that purpoſe. This fluid, in the natural ſmall quantity, ſerves to keep the tunica albuginea moiſt, and to prevent a coheſion between it and the vaginalis; a conſequence which almoſt neceſſarily follows any ſuch diſeaſed ſtate of theſe parts as prevents the due ſecretion of it. On the contrary, if the quantity depoſited be too large, or if the regular abſorption of it be by any means prevented, it will be gradually accumulated, and, by diſtending the containing bag, will form the diſeaſe in queſtion.

It is a diſeaſe from which no time of life is exempt; not only adults are ſubject to it, but young children are frequently afflicted with it, and infants ſometimes born with it. The great Mr. Pott profeſſed himſelf incapable of determining the immediately producing cauſe. Ruyſch thought that the complaint might proceed from a varicoſe ſtate of the ſpermatic veſſels. What real foundation there may be for ſuch conjecture, Pott could not ſay, and, at the ſame time that he acknowledges the frequently varicoſe affection of the ſpermatic veſſels in caſes of hydrocele, he ſeems to conſider it as unproved whether ſuch ſtate be a cauſe or an effect of the diſeaſe. It is alſo remarked by Mr. Ramſden, that though we often find the hydrocele preſent with the varicocele, we much more frequently meet with this laſt diſeaſe, even in its moſt advanced ſtates, unaccompanied by any accumulation of fluid within the ſacculus. (Practical Obſervations on the Sclerocele, &c. p. 196.) The hydrocele of the tunica vaginalis may frequently, perhaps commonly, be regarded as a diſeaſe altogether local, and dependent upon local cauſes. According to ſurgical writers, contuſions of the ſcrotum often give riſe to the complaint, and hence it is ſaid to occur with particular frequency in perſons who are in the habit of riding a great deal on horſeback. In ſuch caſes the tumour is ſometimes formed with ſurpriſing quickneſs. Preſſure made upon the upper part of the ſpermatic cord by an ill conſtructed truſs, or by an indurated omental hernia, may alſo be a cauſe of an hydrocele. Sometimes the latter malady is joined with a ſarcocele, when it may be conſidered only as an effect of the diſeaſe of the teſtis. A hydrocele may likewiſe originate from an inflammation of this laſt gland. In ſome inſtances the diſeaſe appears to depend upon general and leſs manifeſt cauſes. We are informed of its having ariſen in the ſpace of four days, after expoſure to cold. (See Richter's Anfangſgrunde, &c. Band 6. p. 67.) Warner and other authors have taken particular notice how prevalent the diſeaſe is in warm climates, and they make mention of patients who got well on removing from a hot into a cold country, but ſuffered relapſes on their return into a warm part of the world. We deem the opinion, that hydroceles are ever connected with a venereal cauſe, entirely deſtitute of foundation.

Mr. Ramſden has recently advanced a new doctrine reſpecting the cauſe of hydroceles. This experienced ſurgeon has eſtabliſhed three forms of the diſeaſe, as occurring within the tunica vaginalis; namely, the acute, the ſpurious, (hydro-ſarcocele), and the true, or chronic hydrocele. He endeavours to prove that all theſe caſes may be dependent upon excitement within the urethra. He remarks, "that the teſticle will become hardened and enlarged, and that the ſacculus of the tunica vaginalis will be diſtended with watery fluid, in conſequence of various degrees of excitement within the urethra, from the irritable and acutely painful ſtricture, down to that concealed, ſubtle, and local derangement of the membrane, which is totally free from pain, until it is preſſed upon by the bougie, and which may exiſt for years without the patient being conſcious of its preſence.

"It cannot therefore be unreaſonable to ſuppoſe that an habitual ſuſceptibility of the whole membrane of the urethra may, in ſome inſtances, be induced by general or local cauſes, and although it create no conſcious ſenſation to the patient, may have the power of gently provoking the excretory veſſels of the teſticle ſomewhat beyond their natural action, and thus, by deſtroying the balance of fluid, in courſe of time eſtabliſh that undue accumulation which characterizes the chronic, or true hydrocele.

"I am induced," ſays Mr. Ramſden, "to offer this opinion from a variety of facts which have preſented themſelves to my obſervation, and which lead me to ſuſpect, that in almoſt every caſe of true hydrocele the urethra will be found either to have been expoſed at ſome previous time to excitement or inflammation, or to be in a preſent ſtate of increaſed ſenſation, from conſtitutional irritability, from the membranous fence, or from ſome other of the ſeveral general or local cauſes, to which I have in the preceding pages referred the derangement of this membrane.

"The prevalence of hydrocele in the Eaſt and Weſt Indies, inſtead of being attributable to the relaxation of the climate, may more reaſonably be referred to the conſtant excitement to which the urethra is expoſed from the habits of the table; ſince it is well known that, in thoſe hot countries, every individual indulges in high-ſeaſoned diſhes, and in the moſt ſtimulating deſcription of diet.

"The frequency of the hydrocele being preſent with the varicocele may alſo be ſatisfactorily explained, by referring to that ſtate of continual excitement, which is kept up by the diſtention and weight of the loaded veſſels. In the more advanced ſtates of varicocele, nothing is more common than an habitual gleet or weeping from the urethra, which is occaſioned by the dragging of the varicoſe veſſels; and it certainly appears not difficult to ſuppoſe, that ſuch excitement in the urethra, when once eſtabliſhed, may in its turn re-act upon the teſticle, and produce a caſe of hydro-varicocele." P. 198—201.

For the cure of the hydrocele of the tunica vaginalis, a ſurgical operation is generally neceſſary, as it is only in a few inſtances that the complaint yields to internal or external remedies. The obſervations of writers prove, however, that in young children the diſeaſe may ſometimes be diſperſed by emetics. A boy, twelve years old, was cured of a hydrocele by means of the ſteam of vinegar, the ſaturnine lotion, and repeated purgative doſes. (See Richter's Chir. Bibliothek, 5. b. p. 120, 9. b. p. 593.) Morand ſucceeded in curing ſeveral hydroceles by making an iſſue on the ſcrotum; and Douglas found ſimilar ſucceſs from placing an iſſue near the groin. Schmucker diſperſed a hydrocele by fumigating the ſcrotum with vinegar every morning and evening, and in the intervening time compreſſes wet with the ſame fluid. In the courſe of a few days the tumour ſubſided, the ſcrotum emitting a large quantity of perſpiration. Warner frequently cured hydroceles in young ſubjects by means of purgatives, and ſtimulating aſtringent applications. Mohrenheim ſucceeded in diſperſing a hydrocele, which aroſe from expoſure to cold. (Richter's Anfangſgr. &c. Band 6. p. 68.) Mr. Keate has recommended the following lotion, as an efficacious remedy: ℞ Sal. Ammon. Pulver. ℥j Acet. Spir. Vin. Rectif. āā ℥iv Miſce. Compreſſes, wet with this mixture, are to be laid upon the ſcrotum, and kept there with a bag-truſs. They ſhould be dipped in the liquid three times a day. Mr. Keate aſſures us, that when this plan is properly followed up, the water of the hydrocele not only gradually diſappears, but that it does not accumulate again, and the cure is radical and permanent, if the application be continued about a month. This method may be tried, either while the tumour is filled with water, or after the fluid has been let out. In the firſt inſtance it excites the abſorption of the water; in the ſecond it prevents a new collection. When the application happens to make the integuments red or painful, it muſt be left off a few days. The obſervations of ſir James Earle, however, tend to evince, that the preceding practice does not always anſwer, and is not to be depended upon. From the account which Mr. Ramſden has lately publiſhed, of the hydrocele being connected with a morbid ſtate of the urethra, one might ſuppoſe that the diſeaſe would yield to the proper treatment of this laſt canal. This gentleman remarks, however, that in caſes of chronic hydrocele, the uſe of the bougie is not attended with the ſame degree of ſucceſs as in the examples of the acute and ſpurious forms of the complaint. We may again ſtate, that by a ſpurious hydrocele is meant a collection of fluid in the tunica vaginalis, accompanied by an enlargement of the teſticle. The ſimple indurated enlargement of this gland, unattended with any ſubverſion of its organization, we conceive to be the caſe, which Mr. Ramſden has lately ſignified by the appellation of ſclerocele, and which, being ſometimes joined with an accumulation of fluid in the tunica vaginalis, conſtitutes an inſtance of ſpurious hydrocele, or what this eminent ſurgeon has named hydro-ſclerocele, in order to diſtinguiſh the diſeaſe from the hydro-ſarcocele where the organization of the teſticle is actually more or leſs ſubverted. Now Mr. Ramſden has endeavoured to prove, that the acute hydrocele, as well as the hydro-ſclerocele, may be cured by treating the urethra with bougies, ſo as to deſtroy the morbid irritation in that canal. "The ſclerocele of the teſticle, whether with or without fluid in its ſacculus, yields moſt readily to the uſe of the bougie, when the progreſs of induration in the gland has been moſt rapid, and the point of irritation within the urethra, on which it depends, is moſt ſuſceptible; but the chronic hydrocele being ſlow in its progreſs, and dependant on a much more modified ſtate of derangement in the urethra, is, on ſuch account, very little under the influence of the treatment of that membrane, and muſt be referred to ſome other operation for its permanent cure." (P. 202—203.) From a note, it appears to be Mr. Ramſden's opinion, that when a tumour of the ſcrotum preſents itſelf under the external appearances of true chronic hydrocele, and is co-exiſtent with an acutely deranged urethra, and eſpecially if the patient has any diſlike to the hydrocele being tapped, the treatment of the urethra by the bougie will always be a fair experiment previous to the letting out of the water. Mr. Ramſden can aſſert, from his own experience, that it will, in ſome few inſtances, prove ſucceſsful in curing the hydrocele. He thinks it probable, that in the caſes in which this treatment ſucceeded, there might be concealed ſclerocele; but he conſiders that ſuch a fact would not leſſen the propriety of the experiment. When the true hydrocele is not attended with an urethra ſo obviouſly deranged, Mr. Ramſden believes, that an attempt to cure the complaint by the uſe of the bougie will only be waſte of time. See Practical Obſervations on the Sclerocele, &c. by T. Ramſden, ſurgeon to Chriſt's Hoſpital, &c. &c.

For relieving the preſent diſeaſe, two operations are practiſed; one called palliative, the other radical. In the firſt, the deſign of the ſurgeon is merely to diſcharge the water, which uſually accumulates again, and the malady returns. By the ſecond he permanently frees the patient from the complaint, and hinders any relapſe, this object being accompliſhed by exciting an inflammation of the whole ſurface of the tunica vaginalis, and a conſequent univerſal adheſion of this membrane to the teſtis. In ſhort, the cavity of the tunica vaginalis, which is the ſeat of the diſeaſe, is thus obliterated. This is the commonly received opinion; but at the ſame time we are not unaware of a different ſentiment upon this ſame point having been lately advanced by Mr. Ramſden, who has adduced caſes in which, from the tranſparency manifeſted in the ſcrotum, a conſiderable time after the radical operation had been performed, the doctrine of the diſeaſe being always cured, by the obliteration of the cavity of the tunica vaginalis, is called in queſtion. The ſurgeon cannot invariably and indiſcriminately undertake either of the preceding operations, at his own pleaſure, with equal prudence and propriety. The palliative operation is entirely exempt from danger, and when a ſufficient quantity of fluid is collected in the tunica vaginalis may be ſafely undertaken, even though the teſtis may not be altogether undiſeaſed, nor the patient in good health. On the other hand, the radical operation, executed in any way whatſoever, demands more caution, and if done in improper caſes, may be followed by dangerous and unpleaſant conſequences. In determining which method is to be adopted, the ſurgeon ſhould attend to the following directions.

When the hydrocele is exceedingly large, it is not adviſable to perform the radical operation, the great diſtention which the parts have juſt ſuffered placing them in not the moſt advantageous ſtate for bearing inflammation. It is much better, in a caſe of this ſort, to be at firſt content with merely letting out the water, and to undertake the radical operation afterwards, when a moderate quantity of fluid has accumulated.

When any ſuſpicions are entertained of the teſticle being diſeaſed, the ſurgeon muſt reſtrict himſelf to diſcharging the water, a plan which can always be ſecurely undertaken, though the teſticle may not be ſound, and has the advantage of enabling the practitioner to feel and examine diſtinctly this latter part.

Should any radical operation be done, unpreceded by tapping the tumour, and the teſticle prove to be affected with ſarcocele, caſtration ought to be immediately performed, ſince the irritation excited would, in all probability, bring on a malignant change in the diſeaſe of the teſticle. If an attempt at the radical cure ſhould have been made, and the teſticle be found thus diſeaſed, yet, without the caſe admitting of the performance of caſtration, the patient is put into a very unpleaſant and precarious condition.

When the patient's health is very bad, the radical operation ought not to be undertaken, for fear of inducing alarming ſymptoms. This obſervation, however, muſt not be extended to a claſs of ſubjects, who, though not in health, are neither affected with extreme weakneſs, nor any preſſing indiſpoſition. The palliative cure, being free from danger, may be undertaken in almoſt any ſtates and circumſtances.

When the hydrocele is complicated with other diſeaſes of the ſcrotum, it is a wiſe maxim to reſt ſatisfied in the firſt inſtance with ſimply diſcharging the fluid. The ſurgeon can then examine more accurately the nature of the other diſorder, and, at a future period, attempt the radical cure of the hydrocele, if judged prudent, with greater ſafety.

Of the Palliative Operation.—The intention of this proceeding is to relieve the diſeaſe for the preſent, by diſcharging the accumulated fluid. The operation by which the water is let out is a very ſimple one. The only circumſtances requiring our attention in it, are the inſtrument wherewith we would perform it, and the place or part of the tumour into which ſuch inſtrument ſhould be paſſed.

The two inſtruments in uſe are the common bleeding lancet, and the trocar.

"The former having the finer point (ſays Mr. Pott), may poſſibly paſs in rather the eaſier, though the difference is hardly perceptible, but is liable to inconveniences, to which the latter is not. The trocar, by means of its cannula, ſecures the exit of the whole fluid, without a poſſibility of prevention, the lancet cannot. And, therefore, it frequently happens, when this inſtrument is uſed, either that ſome of the water is left behind; or that ſome degree of handling and ſqueezing is required for its expulſion; or that the introduction of a probe, or a director, or ſome ſuch inſtrument, becomes neceſſary for the ſame purpoſe. The former of theſe may in ſome habits be productive of inflammation; the latter prolongs what would otherwiſe be a ſhort operation, and multiplies the neceſſary inſtruments; which, in every operation in ſurgery, is wrong. To which it may be added, that if any of the fluid be left in the vaginal coat, or inſinuates itſelf into the cells of the ſcrotum, the patient will have reaſon to think the operation imperfect, and to fear that he ſhall not reap even the temporary advantage which he expected. The place where this puncture ought to be made is a circumſtance of much more real conſequence; the ſucceſs of the attempt, the eaſe, and even ſometimes the ſafety of the patient, depending upon it.

"All the anterior and lateral parts of the vaginal coat are looſe and detached from the albuginea; in its poſterior and ſuperior parts, theſe two tunics make one; conſequently the teſticle is, as it were, affixed to the poſterior and ſuperior part of the cavity of the ſac of an hydrocele, and conſequently, the water or fluid can never get quite round it. This being the ſtate of the caſe, the operation ought always to be performed on that part of the tumour where the two coats are at the greateſt diſtance from one another, and therefore, where the fluid muſt be accumulated in the largeſt quantity, and never on that part of it where the fluid cannot poſſibly be. The conſequence of acting otherwiſe, muſt not only produce a diſappointment, by not reaching the ſaid fluid; but may prove, and has proved highly, and even fatally miſchievous to the patient." (Pott on the Hydrocele.) In ſhort, it muſt be plain to every perſon, who has any knowledge of the preſent diſeaſe, that in all common caſes, the proper place for making the puncture is at the lower and fore-part of the ſcrotum. It ought, however, to be underſtood, that ſurgical writers make mention of examples, in which the hydrocele has an unuſual ſhape, in conſequence of the preſſure of a bag-truſs, &c. Inſtances have been obſerved, in which the hydrocele was of an horizontal oval form, with the teſticle plainly perceptible underneath at the bottom of the ſcrotum. In all ſuch caſes, the ſurgeon ſhould firſt examine the ſituation of the teſticle, and chooſe a place for making the puncture, where there will be no riſk of injuring the latter part. The oval ſac of an hydrocele of the left tunica vaginalis, has been known to have ſo oblique a poſition, that its bottom could be felt on the right ſide of the raphe at the inferior part of the ſcrotum, while its upper end lay on the left ſide of the ſcrotum, near the abdominal ring. This hydrocele of the left tunica vaginalis was tapped on the right ſide of the raphe at the bottom of the ſcrotum, and as ſoon as half the fluid had been diſcharged, the ſac became ſituated quite on the left ſide of the raphe, the exit of the water ceaſed, and the cannula fell out. Even in caſes where the ſwelling has had the ordinary ſhape, the teſticle has occaſionally been ſeen at the fore-part of the tumour. Hence practitioners ſhould remember, that making the puncture at the lower and anterior part of the hydrocele is not a matter of courſe; and that it is their duty, in every inſtance, to endeavour to aſcertain the preciſe ſituation of the teſticle, in order that it may be more certainly avoided. Richter's Anfangſgrunde, &c. Band. 6, p. 73.

After letting out the water of an hydrocele by the palliative operation, it is prudent to cover the puncture with a bit of lint and a plaſter, to keep up the ſcrotum with a bag-truſs, and direct the patient to keep himſelf quite ſtill for the firſt twenty-four hours afterwards. The bag-truſs gently ſupports the ſuddenly relaxed parts, and thus tends to prevent any painful ſwelling of the teſticle, as well as hemorrhage in the tunica vaginalis, and too rapid an accumulation of the water again. Although no painful and inflammatory ſymptoms uſually follow the operation, and the orifice heals in a few hours, like that made in bloodletting, and this notwithſtanding the patient neither pays attention to regimen, nor abſtains from his ordinary purſuits; yet the contrary ſometimes happens. We learn, on the authority of Mr. Pott, that in ſome habits and circumſtances, the puncture inflames and feſters. Such feſtering is generally ſuperficial only, and is ſoon quieted by any ſimple dreſſing; but it is ſometimes ſo conſiderable, and extends ſo deeply as to affect the vaginal coat, and by accident produce a radical cure. Mr. Pott has likewiſe ſeen it prove more troubleſome, and even fatal, when the circumſtances of the patient, and the caſe have been particular. The accounts delivered to us by ſurgical authors confirm, that in perſons of bad conſtitutions, pain, inflammation, and fever are apt to ſucceed, if the ſcrotum be too much rubbed or agitated. A patient, immediately after the operation, went ſeveral miles, and brought on by this means ſo high a degree of inflammation, ſwelling, and fever, that the conſequence was a radical cure of the hydrocele. (Default, Journal de Chirurgie, tom. i.) Theden has recorded a caſe where ſimilar ſymptoms were produced, only in a more ſevere form. Upon the whole, however, the palliative operation is not very liable to any diſagreeable conſequences. If pain, inflammation, and fever occaſionally ariſe, it almoſt always will be found, that the patient has been guilty of imprudent exertion, or that the habit is exceedingly bad. In ſome inſtances, theſe ſymptoms are to be aſcribed to the circumſtance of the end of the cannula having been rubbed againſt the teſticle during the eſcape of the fluid. An hæmatocele, which is occaſionally produced after the operation, proceeds either from the great determination of blood to the relaxed parts, or from an actual injury of one of the blood-veſſels of the tunica vaginalis with the lancet or trocar. When, from the colour of the water, there is reaſon to apprehend that a veſſel has been wounded, the ſurgeon may often ſucceed in preventing any ſerious collection of blood, by taking care to cover the ſcrotum with cold applications, and ſupport it well with a bag-truſs. Should he however be unable to hinder ſuch collection from taking place, both the hæmatocele and hydrocele may be radically cured by laying open the cavity of the tunica vaginalis. See HÆMATOCELE.

It is ſaid, that when the tunica albuginea is unfortunately wounded with the point of the trocar, the ſubſtance of the teſtis is protruded through the puncture of that membrane, and forms a ſwelling which may create a neceſſity for caſtration. When the trocar happens to injure any varicoſe blood-veſſels of the integuments of the ſcrotum, an extravaſation of blood in the cellular ſubſtance may enſue, and end in ulceration, unleſs ſpeedily diſperſed. But while we are noticing theſe occaſional evils, let us not forget to ſtate, that the palliative operation ſometimes proves beneficial beyond expectation, no water collecting again, and the patient remaining for ever afterwards free from the diſeaſe.

Wiſeman and others have adviſed deferring the puncture till a pint of fluid has collected. On the contrary, Mr. Pott expreſſes his decided opinion, that when the water is in ſufficient quantity to keep the teſticle from the inſtrument, there can be no reaſon for deferring the diſcharge; and he contends, that the ſingle point on which this argument ought to reſt is this: whether the abſorbent veſſels, by which the extravaſation ſhould be prevented, are more likely to re-aſſume their office, while the vaginal coat is thin, and has ſuffered but little violence from diſtention; or after it has been ſtretched and diſtended to ten, or perhaps twenty times its natural capacity; and by ſuch diſtention is, like all other membranes, become thick, hard, and tough? Mr. Pott believes the probability ſo much more on the ſide of the former, that he ſhould never heſitate a moment about letting out the water, as ſoon as he found that the puncture could be made ſecurely. And, from what has happened within the ſmall circle of his own experience, he is inclined to think, that if it was performed more early than it generally is, it might ſometimes prevent the return of the diſeaſe.

Although we have given a general preference to the trocar, as the beſt inſtrument for tapping hydroceles; we can conceive a few inſtances in which the employment of a lancet for the purpoſe might be attended with advantages. Suppoſing the ſurgeon has to operate upon a very ſmall hydrocele, which contains only a little quantity of fluid, it is better to uſe the lancet. The trocar muſt always be introduced more deeply than the latter inſtrument, and is therefore more apt to injure the teſticle. In ſuch a caſe, alſo, there is no danger of the lancet occaſioning an hæmatocele, ſince the veſſels of the tunica vaginalis have ſuffered no dilatation. On the ſame principle, the lancet ought to be preferred in all caſes where the hydrocele is complicated with either a hernia, or an exceedingly large ſarcocele, and it is impoſſible to aſcertain the exact poſition, ſize, and quantity of parts in the ſcrotum.

Sir James Earle thinks, that the palliative operation ought to be performed at leaſt once on thoſe who determine to ſubmit to the radical method of cure, as it enables the ſurgeon to examine the ſtate of the teſticle, and affords an opportunity of operating in the other way afterwards, when the tunica vaginalis is not more diſtended than is proper. On the Hydrocele, p. 13, edit. 2.

We ſhall conclude the obſervations which we have to offer on the palliative operation, with noticing the circumſtance of the fluid ſometimes not flowing through the cannula of the trocar, or of eſcaping only juſt at firſt, and then ſtopping, notwithſtanding the introduction of a probe. This occurrence may depend on various cauſes. The fluid in the tunica vaginalis is occaſionally as thick and viſcid as white-of-egg. (Warner.) Sometimes the cavity of the tunica vaginalis is divided by ſeveral partitions formed of a looſe ſort of cellular ſubſtance. In certain inſtances, the cavity has appeared to be filled with hydatids, or tranſparent cyſts. Should the patient be in a fit ſtate for the radical operation, it would undoubtedly be right, in a caſe of the foregoing deſcription, to perform it at once. The plan by injection being here quite inapplicable, the ſurgeon ſhould introduce a director through the cannula of the trocar, withdraw the tube, and, with the aid of the director and a curved biſtoury, lay open the cavity of the tunica vaginalis.

Of the Radical Method of Treatment.—The great object in the radical operation is to produce an entire obliteration of the cavity of the tunica vaginalis, which is the ſeat of the diſeaſe, and thus render a recurrence of the complaint impoſſible. This purpoſe has been fulfilled in two manners, *viz.* by cutting the whole of the tunica vaginalis away, or by exciting ſuch an inflammation of this membrane as makes it univerſally adherent to the teſticle. In the latter method, it is a principal indication to have an effectual, yet not too violent a degree of inflammation. When it is too ſlight, or does not extend to the whole of the membrane, it is ineffectual. In the firſt of theſe circumſtances no coheſion follows, and the operation completely fails; in the ſecond, the tunica vaginalis only becomes adherent to the teſticle at thoſe places where the inflammation exiſts, while elſewhere a cavity remains, in which the fluid re-accumulates. When there are ſeveral ſuch parts, to which the inflammation does not extend, the hydrocele recurs in the form of ſeveral diſtinct ſwellings, and the water is contained in ſeparate cyſts. On the other hand, the inflammation is too violent, when it is ſuch as brings on ſevere febrile ſymptoms, and affects the teſticle even more than the vaginal coat. The means employed to raiſe the neceſſary inflammation ought always to be calculated to affect the latter membrane chiefly, and the teſticle as little as poſſible; a conſiderable inflammation of this gland not being eſſential to the radical cure of a hydrocele, and being invariably attended with more ſevere ſymptoms, than thoſe which reſult from an inflammation of the vaginal coat. With the preceding intentions, various methods of operating have been practiſed, the chief of which we ſhall now proceed to deſcribe.

Inciſion.—In this plan, an inciſion of ſome length is made through the integuments of the ſcrotum and the tunica vaginalis, by which means, not only the fluid is diſcharged, but ſuch inflammation excited as ends in a coheſion of the whole of the vaginal coat with the teſticle, and, of courſe, the recurrence of the hydrocele is effectually prevented. This mode of effecting the radical cure of the hydrocele is the moſt ancient of all, having been deſcribed by Celſus. The operation is performed as follows: the point of a ſtraight biſtoury is to be placed on the fore-part of the ſwelling, while the back of the inſtrument is to reſt againſt the index-finger of the ſurgeon's left hand. The knife is to be puſhed into the tumour, and an opening of ſuch ſize immediately made as will let the operator introduce completely into the tunica vaginalis his finger, on which the further courſe of the biſtoury is to be directed. Directly the firſt puncture is made, the fluid is apt to guſh out all on a ſudden, leaving the tumour collapſed, and the operator incapable of eaſily introducing the inſtrument, with which he purpoſes to enlarge the firſt wound. In order to prevent any inconvenience of this kind, ſurgical authors direct us to place the end of the left index finger cloſe behind the point of the knife, and to take care to make it paſs into the wound immediately behind the latter inſtrument. This being done, the ſurgeon, with the aid of his left thumb, can take hold of the inveſtments of the hydrocele, and hinder a cloſure of the opening juſt made. A blunt-pointed crooked biſtoury is then to be introduced, and, guided by the fore finger, will ſerve for enlarging the inciſion downwards and outwards, in ſuch manner, that the wound may extend down the middle of the front of the tumour to its lower part. When the hydrocele is ſmall, or complicated with a ſarcocele, or hernia, or when any doubts exiſt concerning the real nature of the caſe, writers adviſe us to let the firſt inciſion only divide the integuments of the ſcrotum, and then to open the tunica vaginalis ſeparately.

Should any modern practitioner chooſe to perform this operation, he would find it very advantageous to make the firſt opening into the hydrocele at the upper part of the ſwelling, as all the fluid would then not make a ſudden eſcape, ſo as to occaſion a collapſe of the tumour, and difficulty in effecting the neceſſary dilatation of the wound.

The inciſion muſt be carried to the bottom of the tunica vaginalis, or elſe blood and matter will be very likely to lodge there, and create trouble.

The cavity of the hydrocele having been thus laid open, is to be dreſſed with ſoft pieces of lint; theſe are to be covered with a pledget; and a ſuſpenſory, or T bandage. The dreſſings are to be changed at proper intervals, until the part is completely healed.

Much more might be ſaid concerning this method of effecting the radical cure of the hydrocele; but we ſuppreſs many particulars, conceiving them to be ſuperfluous in the preſent almoſt exploded ſtate of the operation. Whoever will take the trouble to read the accounts of this plan, as delivered to us by ſurgical writers, will find that, according to Monro and Acrell, its conſequences are ſometimes dangerous, and even fatal, while, in other inſtances, the inflammation of the teſticle has been ſo violent, as to end in ſuppuration. (See Richter's Anfangſgr, &c. Band 6. p. 92.) Hence it has been commonly found proper to employ a ſtrict antiphlogiſtic treatment, which is acknowledged to have occaſionally defeated the very object of the operation, by preventing the kind of inflammation neceſſary for the completion of the radical cure. Thus, ſevere as the method is, it is uncertain, and its failures are confirmed by the teſtimony of Bertrandi, Sabatier, and ſir James Earle. We will not dwell upon the objections which might be urged againſt the practice, from the diſagreeable and dangerous bleedings which ſometimes follow the operation, or the painful excoriations which frequently ariſe. The method has no advantage over a milder operation, which we have to recommend, and it is altogether ſevere, as well in its performance as in its conſequences. We ſhould, however, have deemed it our duty to enter into a more particular detail of the reaſons againſt the plan, had not the diſrepute into which it has now ſunk rendered this taſk unneceſſary.

Extirpation.—It ſometimes happens, after performing the foregoing operation, that the tunica vaginalis is found in a thickened and indurated ſtate. Certain writers and practitioners have fancied, that when this is the caſe, ſuch an inflammation as is eſſential to the radical cure will not take place. Under this impreſſion, they recommend ſcarifying the inner ſurface of the tunica vaginalis, or even cutting this membrane entirely away. Many eminent ſurgeons of paſt times have adopted the latter proceeding with ſucceſs, as for inſtance, Douglas, Saviard, White, Gooch, and Louis. Indeed, it was remarked by Bertrandi, that the ſymptoms are generally milder after the exciſion of the tunica vaginalis, than after a mere diviſion of it. The method conſiſts in diſſecting away portions of the membrane, after laying open its cavity, care being taken not to cut too cloſely to the teſticle, for fear of exciting a violent degree of hernia humoralis.

Certainly we can conceive a caſe in which the tunica vaginalis may be ſo diſeaſed, as to juſtify the tedious and painful plan of removing a part of it by diſſection. But an inſtance of this kind muſt be very uncommon; and the obſervations of ſir James Earle confirm, that the radical cure, by means of an injection, can be accompliſhed without any exciſion, notwithſtanding the tunica vaginalis is thickened. The method of extirpation, however, is not only objectionable, as being productive of avoidable pain; it is liable to bring on troubleſome hemorrhages both during and after the operation, and to be followed by ſores and fiſtulous abſceſſes, which are a very long time in healing.

Tent.—Experience having ſhewn that, in many inſtances, moderately ſtimulating the tunica vaginalis will bring on a ſufficient inflammation of this membrane to effect a radical cure; and likewiſe, that the common palliative operation, done with a trocar, is ſometimes followed by the ſame beneficial conſequence; attempts have been made to free the patient permanently from the diſeaſe by milder methods than thoſe which we have juſt now been deſcribing. After the palliative operation with a trocar, Monro ſuggeſted leaving the cannula in the wound until the neceſſary inflammation had been excited, and he aſſures us, that in this manner he often accompliſhed a radical cure with the utmoſt ſucceſs.

Warner uſed to puncture the ſwelling with a lancet, and, after letting out the fluid, introduce into the opening a tent, which was left there until an adequate degree of inflammation had come on.

The laſt mode of operating has been the moſt extenſively adopted. It is executed as follows: a puncture is made with an abſceſs-lancet in the anterior and inferior part of the tumour, and the fluid diſcharged. A tent is then introduced into the aperture, ſo as to lie betwixt the tunica vaginalis and the teſticle. The opening is next covered with a pledget. The wound in the integuments and vaginal coat ought to be about an inch and a half in length. We are alſo adviſed by ſome authors to introduce the tent while the water is making its eſcape; as, in conſequence of the way in which the ſac occaſionally collapſes, the operator may afterwards have trouble in getting the tent into the tunica vaginalis, and, perhaps, force it into the cellular ſubſtance of the ſcrotum, inſtead of the proper ſituation, in which circumſtance the attempt at a radical cure would fail. The tent ought to be at leaſt an inch long, have a ligature attached to it, and be made either of ſponge, or a ſoft doſſil of lint. The latter can be beſt introduced by means of a probe. A freſh tent ſhould be put in every day, and the length and thickneſs of it may be gradually diminiſhed. This mode is to be followed up, until an effectual inflammation is excited, which commonly happens on the ſecond or third day, though ſometimes later. The tent is afterwards to be diſcontinued, and an emollient poultice applied. In general, ſuppuration very ſoon commences. Occaſionally abſceſſes form, and require to be opened. Frequently the ſymptoms are ſo mild that the patient ſcarcely finds it neceſſary to keep his bed; but ſometimes they are ſo ſevere, that a rigorous employment of antiphlogiſtic treatment is indiſpenſable.

Franco is ſaid to have made the firſt mention of the cure by the tent. The method has been practiſed by a long liſt of eminent ſurgeons of later date; but it has now been abandoned by all practitioners in this country. Mr. Pott objected to the cannula, that it was very inconvenient, as, by reaſon of its inflexibility, it hurt the teſticle whenever the patient moved; conſequently he preferred a tent or bougie; but, according to his account, the method is attended with a conſiderable degree of uncertainty.

Cauſtic.—The ancients employed cauſtic for the purpoſe of forming in the tunica vaginalis ſuch an opening as would extend the whole length of this membrance. The common conſequence of the method was a train of ſevere and violent ſymptoms, and, on this account, the practice was for a long while entirely given up. It was afterwards revived, by reaſon of the favourable reports made of it by Elſe, Acrell, &c.; but theſe later ſurgeons did not uſe the cauſtic exactly in the ſame way as the old ſurgeons, as their object was not to make an opening through the vaginal coat with it, but only to irritate the membrane, and make it inflame. Cauſtic has this effect, when employed according to the following directions.

The cauſtic muſt be applied to the inferior and anterior part of the ſcrotum, and, in order that it may not act too extenſively, the part ſhould be covered with a piece of plaſter, in which a hole has been cut. When the hole is about as large as a half guinea, the eſchar produced by the cauſtic will generally equal a guinea in ſize, which, according to Mr. Elſe, in all common inſtances, will be quite large enough. Other writers have adviſed making a more extenſive ſlough, and to proportion its ſize, in ſome meaſure, to that of the ſwelling, and to the degree of hardneſs and thickneſs with which there may be reaſon to ſuppoſe the tunica vaginalis affected. The cauſtic which has been moſtly uſed is the kali purum blended with quicklime, and made into a paſte. Acrell made the ſuggeſtion of mixing opium with the cauſtic, with a view of leſſening the pain of the application.

In attempting the radical cure of the hydrocele by this method, it was the deſign of the ſurgeon to make the action of the cauſtic extend through the integuments and cellular ſubſtance, and affect the ſurface of the tunica vaginalis ſufficiently to make this membrane inflame. The cauſtic-paſte was generally left on about ſix or ſeven hours, and after its removal a pledget was applied, the patient enjoined to keep quiet in bed, and an antiphlogiſtic regimen directed. The denuded tunica vaginalis did not often burſt of itſelf, or at leaſt not till a conſiderable time after the detachment of the ſlough, ſo that it was generally neceſſary to make a puncture with a lancet. It was accounted a matter of much importance that the fluid ſhould not be diſcharged too ſoon after the application of the cauſtic, leſt the very purpoſe of the operation ſhould be defeated. About the eighth or tenth day was uſually reckoned the beſt time for making the opening; but the criterion of the proper period was when the patient began to experience a ſenſe of heavineſs and heat about the ſcrotum, and the ſwelling was every where painful and inflamed.

When the inflammatory ſymptoms prevailed, it was cuſtomary to apply emollient poultices. Theſe complaints were often exceedingly ſevere, and attended with pain in the back and abdomen. Bleeding was ſometimes required for their alleviation. Surgeons, indeed, found it prudent to prepare their patients for this mode of treatment by diet and medicines, and, after the cauſtic had been applied, a ſtrict obſervance of an antiphlogiſtic plan was deemed generally adviſable.

The method, however, was apt to fail when the cauſtic did not act deeply enough, and the requiſite inflammation could not then be excited, without repeating the painful application again.

The treatment of the hydrocele with cauſtic has now quite fallen into diſuſe, as being attended with an avoidable deſtruction of parts, a degree of efficacy not equal to that of an injection, and often creating a painful and ill conditioned ſore, beſides being ſubject to other inconveniences obvious in the foregoing account.

The deſire of Mr. Elſe to regulate the cauſtic with ſuch preciſion as juſt to burn down to the tunica vaginalis, or juſt through it, could not, in general, be realized; and the opening could only be completed by employing a lancet, or uſing the cauſtic again.

Seton.—The ſeton was preferred by the celebrated Mr. Pott, as the means of effecting the radical cure of the hydrocele; and, next to the injection, this, perhaps, is to be conſidered as the moſt eligible method. The ſwelling is to be firſt punctured with a trocar in the ordinary place; an eye probe is next to be introduced through the cannula into the cavity of the hydrocele, and its end puſhed to the upper and anterior part of the tunica vaginalis. Juſt where this extremity of the probe is felt, the ſurgeon is to make an inciſion for the paſſage of the inſtrument, which will convey with it the ſeton through the cavity of the tunica vaginalis. But, as the probe is apt to ſlip away at the moment of cutting upon it, and the ſkein of ſilk is liable to rub againſt the teſticle, when drawn through the cavity of the diſeaſe, the method adopted by Pott is undoubtedly that which deſerves imitation. The inſtruments uſed by this conſummate practitioner, conſiſted of a trocar, the cannula of which was about a quarter of an inch wide; a ſeton cannula, which was made of ſilver, was about five inches long, and was juſt ſmall enough to paſs with eaſe through the cannula of the trocar; and, laſtly, a probe ſix inches and a half in length, furniſhed at one end with a fine ſteel trocar-point, and, at the other, with an eye which ſerved to carry the ſeton. The ſeton was compoſed of as much white ſewing thread as would fill the cannula, and yet paſs through it with facility. The operation was performed in the following way. The tumour was punctured in the common manner with a trocar, and the fluid diſcharged. The end of the ſeton cannula was then introduced, through the cannula of the trocar, to the upper and fore-part of the cavity of the tunica vaginalis, and there preſſed againſt the integuments, ſo as to be externally perceptible. The needle, provided with the ſeton, was next conveyed through the ſeton cannula, and puſhed from within outwards through that part of the ſcrotum, with which the end of the tube was in contact. The ſkein of thread was thus drawn through the cavity of the hydrocele, and both the cannulæ, having fulfilled their office, were taken away.

The operation occupied but a ſhort time, and was productive of no ſevere pain. The patient was generally put to bed immediately afterwards, and took about twenty, or five and twenty drops of the tinctura thebaica. On the third day the ſcrotum was uſually affected with ſwelling and inflammation, ſymptoms which were ſoon appeaſed by means of a bag-truſs, emollient poultices, clyſters, and a low regimen. The inflammation commonly ſubſided about the tenth day. From this time, the ſeton was leſſened every day by withdrawing ſome of the threads, and the diſcharge of matter from the openings was generally inconſiderable. Pott believed, that, in this method, the tunica vaginalis did not ſuppurate, but was only made to inflame and become adherent to the teſticle. Other ſurgeons, however, have ſometimes found the plan tedious, the ſeton not becoming looſe for more than a fortnight, and large abſceſſes being occaſionally produced, which ſtood in need of being opened. Upon the whole, however, the ſeton may be conſidered as one of the mildeſt and ſureſt modes of cure, and, perhaps, ought to be preferred to all the other plans, excepting one, of which we ſhall now ſpeak.

Injection.—The method of injecting into the cavity of the tunica vaginalis a ſtimulating fluid, for the purpoſe of bringing on an inflammation of this membrane, and thereby a radical cure of the hydrocele, is by no means one of modern invention. Of late years, however, it has been more particularly practiſed, and the manner in which it has been recommended, and perfected by ſir James Earle, together with its confirmed mildneſs and ſucceſs, has almoſt entirely ſet aſide all the other modes of cure. According to the ſtatement of the preceding author, even the celebrated Mr. Pott lived to expreſs his approbation of the method, notwithſtanding the great partiality which he has evinced in his writings to the ſeton.

Many different kinds of injection have been employed for the radical cure of the hydrocele. The principal are wine mixed with water; a ſolution either of two grains of kali purum, or of two grains of cuprum vitriolatum, in an ounce of water; lime-water, either alone, or containing hydrargyrus muriatus; a ſtrong ſolution of alum, or acetite of lead; brandy diluted with water; an infuſion of red roſes, or of oak-bark, &c. However, at preſent, the injection univerſally employed in this country is compoſed of port wine and water, in the proportion of two parts of the former to one of the latter ingredient. On the continent, it is not uncommon to uſe five parts of claret, or Burgundy wine, to one of water.

We learn from ſir James Earle's treatiſe, that he commonly uſes about two-thirds of port wine to one of water. When the parts appear inſenſible, and no pain at all is produced on introducing the firſt quantity of the injection, he withdraws the ſyringe, and increaſes the proportion of wine. On the other hand, when the complaint is recent, and the parts irritable, he increaſes the proportion of water, the ſtrength of the injection, in fact, being principally regulated by the degree of pain experienced by the patient. The ſyringe preferred for this operation is made of elaſtic gum. The pipe formerly employed by ſir James Earle was furniſhed with a ſtop-cock, in order to hinder the injection from making its eſcape, whenever it was neceſſary to remove the ſyringe. Of late years he has uſed a pipe, one end of which fits the cannula of the trocar, while the other is adapted to receive the neck of the elaſtic bottle; and inſtead of a ſtop-cock, which required a hand to turn it, and was therefore found inconvenient, the pipe is furniſhed with a valve, which allows the injection to paſs into the tunica vaginalis, but not back again. The operation is generally performed as follows: the hydrocele is firſt tapped with a trocar at its anterior and inferior part, and after all the fluid has been diſcharged, the cavity of the tunica vaginalis is to be diſtended to its former dimenſions with the vinous injection, which, upon an average, is to be kept in the part about five minutes, after which it may be let out through the cannula. The patient commonly feels pain in the groin, and about the kidnies, on the injection being introduced; a circumſtance which is rather deſirable, as it ſhews that the ſtimulus of the fluid is likely to have the wiſhed-for effect of exciting the neceſſary degree of inflammation.

When the hydrocele is exceedingly large, ſir James Earle recommends practitioners to be at firſt content with merely diſcharging the fluid, and to take a future opportunity, when the tumour is ſmaller, for putting into practice the attempt at a radical cure.

The experience of the ſame gentleman has proved, that the injection is adequate to the accompliſhment of a permanent cure, even though the tunica vaginalis may be indurated and thickened.

The treatment of hydroceles with the vinous injection is now generally acknowledged to be the mildeſt and moſt certain method, and hence it is univerſally practiſed by all the moſt eminent ſurgeons of this country, in preference to the other plans. One great advantage attending it muſt be immediately obvious,—it does not commonly occaſion any ſuppuration or ſore; and it is ſo efficacious, that many very experienced ſurgeons have never known an inſtance of its failing.

It remains for us to give one caution; let every operator be ſure that the end of the cannula is in the tunica vaginalis before he ventures to introduce the injection. It has ſometimes happened that the cannula has ſlipped out of the puncture in that membrane, juſt after the fluid has been diſcharged, ſo that its extremity became ſituated in the cellular ſubſtance of the ſcrotum. Now when the ſurgeon injected the wine and water, this liquid, inſtead of paſſing into the cavity of the hydrocele, was forced into the cellular membrane. Miſtakes of this kind have brought on violent attacks of inflammation, abſceſſes, and ſloughing, without there being any chance of a radical cure of the hydrocele. Whenever ſuch an accident happens, it is conſidered beſt to defer the operation till the fluid of the hydrocele is accumulated again in ſufficient quantity.

No objection can be reaſonably urged againſt the method, on account of the preceding accident, which is eaſily avoidable, and is always imputable either to awkwardneſs or negligence.

After the operation, the puncture is to be covered with a piece of lint and ſoap-plaſter, and the ſcrotum is to be ſupported in a bag-truſs. As ſoon as the parts begin to inflame and become tenſe and painful, then an emollient poultice is to be applied to them, care being taken to employ the ſuſpenſory, keep the patient on an antiphlogiſtic regimen, and quiet in bed. If the inflammation ſhould appear to exceed the requiſite degree, leeches may be put on the ſcrotum, the patient gently purged, and even bled in the arm.

Congenital Hydrocele of the Tunica Vaginalis.—The diſeaſe is ſo named when the tunica vaginalis, beſides containing a preternatural quantity of fluid, is uncloſed above, ſo as to have an open communication with the cavity of the abdomen. In moſt caſes the fluid, in all probability, is ſecreted by the peritoneum, and then deſcends by its weight into the ſcrotum. This form of the hydrocele has eſcaped the notice of the generality of ſurgical writers. The French ſurgeon, Deſault, however, has given a deſcription of it, and we find that he was in the habit of effecting a radical cure by means of a vinous injection. The nature of the diſeaſe cannot be difficult of diſcrimination, when the ſurgeon adverts to the tranſparency and fluctuation of the tumour, the abſence of pain, and the diſappearance of the ſwelling in the recumbent poſture, or on preſſure being made.

Deſault uſed to cure the complaint in the following manner. After letting out the fluid with a trocar, he took care to reduce any viſcera which happened to be protruded, and directed a confidential aſſiſtant to cloſe the communication between the abdomen and tunica vaginalis by preſſure. The injection was then introduced through the cannula into the cavity of the hydrocele. In this way, Deſault not only cured a boy of a hydrocele, but alſo of a hernia, with which he was afflicted. Œuvres Chirurgicales de Deſault, par Bichat, tom. ii.

Hydrocele of the Spermatic Cord.—In this caſe the fluid is contained in the cellular ſubſtance which ſurrounds the ſpermatic veſſels, and forms what is ſometimes named the common ſheath of the cord. The water is not diffuſed in all the cellular membrane of the ſcrotum. Some writers think that the complaint might, with greater propriety, be called an œdema of the ſpermatic cord. However this may be, it is certain that this ſpecies of hydrocele is the leaſt frequent. In external appearance it is ſubject to conſiderable variety, according to the ſtage in which the diſeaſe preſents itſelf. In the early ſtate, the ſwelling merely ſurrounds the lower part of the ſpermatic cord, and has no connection with the abdominal ring, the upper portion of the cord remaining quite free. The ſhape of the tumour is generally pyramidical, having a kind of apex above, and a broad baſe below. The teſticle can be quite plainly felt juſt below the ſwelling. The tumour is unattended with pain, has a doughy feel, and allows its ſhape to be altered by preſſure. The ſcrotum retains its natural corrugated appearance, being only ſomewhat more full and diſtended on the affected ſide than the other. In a more advanced ſtate, the ſwelling undergoes two alterations; it aſcends up to the abdominal ring, ſo that the upper portion of the cord can no longer be felt; and it deſcends ſo far down by the ſide of the teſticle, that this gland is likewiſe completely concealed. In the extreme ſtage of the diſeaſe, not only the cellular ſubſtance which ſurrounds the ſpermatic cord in the ſcrotum is diſtended with water, but even that which forms the inveſtment of the ſpermatic veſſels in their courſe from the inner to the outer opening of the abdominal ring.

The firſt ſtage of the hydrocele of the ſpermatic cord may eaſily be diſtinguiſhed from all other tumours of the ſcrotum, for there are none which bear ſo much reſemblance to it as to be readily miſtaken. But in the very advanced period of the diſeaſe, the ſwelling has much of the appearance of an omental hernia. It has the ſame ſoft flabby feel; it paſſes up into the abdominal ring; and the latter opening is wide and dilated. When the patient has been long in a ſtanding poſture, the water deſcends from the cellular ſubſtance which ſurrounds the ſpermatic veſſels within the ring, and paſſes into the cellular membrane, with which they are inveſted below this aperture; conſequently, the external ſwelling undergoes an increaſe of ſize. On the other hand, when the patient lies down for a time, the tumour diminiſhes. It may alſo be leſſened by external preſſure, and even nearly puſhed within the ring. Likewiſe, when the patient coughs, or holds his breath, the tumour ſwells and becomes larger. Such ſymptoms correſpond with thoſe of an omental hernia. The two diſeaſes, however, may, with a little attention, be eaſily diſcriminated from one another. By adverting to the early ſtage of the diſeaſe, and recollecting that the ſwelling firſt made its appearance at the lower part of the ſpermatic cord, had then no connection with the ring, and afterwards gradually aſcended into this opening, the ſurgeon may know with certainty that the caſe cannot poſſibly be an omental rupture. A careful examination of the ſwelling will alſo diſcover the difference. An epiplocele communicates the feel of ſeveral lumps or maſſes, and is ſofter in ſome places than others. On the contrary, the hydrocele of the ſpermatic cord has every where a ſmooth uniform feel. Its ſhape alſo undergoes alterations according to poſture. When the patient obſerves an horizontal poſition, and the ſcrotum does not hang down, the hydrocele becomes oblong, equally thick, and cylindrical. But when the patient continues in a ſtanding poſture, and the ſcrotum is unſupported, the ſwelling becomes pyramidical, that is to ſay, broad below and thin above. Its ſhape may be altered by making preſſure on it for a little while. When the lower part is thus preſſed it becomes thin, while the upper portion increaſes in thickneſs; and *vice verſâ*. Although an omental hernia alters in ſize, it undergoes no change of ſhape, at leaſt none that is ſo plain and durable. When the horizontal poſture or external preſſure is long continued, the hydrocele of the ſpermatic cord, like the epiplocele, becomes ſmaller, or even appears to paſs entirely within the abdominal ring. Like this hernia, alſo, it ſeems to deſcend again, when the patient continues erect, or the preſſure is removed; but ſtill a difference is obſervable in the modes in which the two diſeaſes return. For on applying two fingers to the abdominal ring, at the period when the hydrocele is aſcending or deſcending, nothing can be felt to paſs up or down; but if the caſe be an epiplocele, the viſcera can be diſtinctly felt to paſs into, or out of, the abdominal ring. The deſcent and reduction of an omental rupture are moreover obſerved to happen more quickly than the aſcent and falling down of the fluid of the hydrocele. When the latter tumour is large, the patient ſuffers ſhooting pains in the loins, at the period of urging the fluid upwards by preſſure.

If the diſeaſe has made conſiderable progreſs, a fluctuation may be diſtinguiſhed in the ſwelling, upon laying one hand upon its upper part and the other below, and making preſſure with the firſt downwards, and with the ſecond upwards, in an alternate manner. The abdomen, in the vicinity of the ring, is alleged to appear ſometimes preternaturally prominent, on preſſing the fluid upwards.

Laſtly, it deſerves attention, that, in the hydrocele of the cord, no complaints of the ſtomach and bowels prevail, as they uſually do in caſes of epiplocele.

The hydrocele of the ſpermatic cord is generally a local diſeaſe, which proceeds from cauſes altogether local. Sometimes it ariſes from wearing an ill made truſs. Children are occaſionally born with it. (Delattre Journal de Medécine, t. 32.) In certain inſtances it appears to originate from coſtiveneſs. Frequently it is the conſequence of a general dropſical affection of the ſyſtem.

Should the diſeaſe depend upon internal cauſes, it is the buſineſs of the ſurgeon to endeavour to remove them. When it ariſes from local cauſes, a ſurgical operation is commonly neceſſary for its cure, diſcutients very ſeldom being found effectual. It is to be obſerved, however, that when this kind of hydrocele is ſmall, it is hardly an object of ſurgery; the pain or inconvenience which it produces being ſo little, that few people would chooſe to ſubmit to an operation to get rid of it; and (as Pott ſays) it is very ſeldom radically curable without one. But when the hydrocele is large, or affects the membrane within the abdominal ring as well as without, it becomes an apparent deformity, is very inconvenient both from ſize and weight, and the only method of cure which it admits is far from being void of hazard.

Authors deſcribe two operations for the relief of this diſeaſe, one is called palliative, and conſiſts in making a few punctures with a lancet in the tumour; the other is named radical, and is executed by making an extenſive inciſion into the ſwelling.

The generality of patients are content with the relief derived from the employment of a ſuſpenſory; and, except in bad caſes, an operation ſeems ſcarcely adviſable.

Encyſted Hydrocele of the Spermatic Cord.—The fluid is ſometimes obſerved to be contained in a preternatural cyſt formed in the cellular membrane, and reſembling ſuch as commonly compoſe the inveſtment of encyſted tumours. This ſpecies of hydrocele is moſtly met with in children and young ſubjects; and not often in adults and old perſons. The ſwelling is moſt frequently ſituated about the middle of the ſpermatic cord, and is more or leſs of an oval ſhape. In ſome caſes it lies cloſe to the cord; in others it is ſo diſtant from this part, that the finger may be put between them. Below the tumour is the inferior portion of the ſpermatic cord, together with the teſticle; while above, the upper part of the cord can be plainly felt to be quite free, ſo that the ſwelling manifeſtly has no connection with the abdominal ring. But there are examples in which the diſeaſe acquires ſuch magnitude, that it mounts upwards as far as the ring, and deſcends down to the bottom of the ſcrotum. In this circumſtance the caſe may ſomewhat reſemble the hydrocele of the tunica vaginalis. The teſticle, however, can always be diſtinctly felt on the outſide of the ſwelling, a fact which immediately makes an experienced ſurgeon acquainted with the nature of the diſeaſe. A miſtake would be attended, indeed, with no ſerious ill conſequences, the treatment of both tumours being ſimilar. It may be remarked, likewiſe, that the ſwelling is completely circumſcribed, has a very even ſurface, and is entirely free from pain. A diſtinct fluctuation cannot often be felt.

In young ſubjects, the tumour may frequently be diſperſed by external means; but in ordinary caſes a ſurgical operation is indiſpenſable for the cure of the diſeaſe, and is of two kinds; one palliative, the other radical. The firſt conſiſts in merely diſcharging the fluid with a lancet or trocar. Care muſt be taken to avoid injuring the ſpermatic cord. Here a lancet is moſtly preferred to a trocar. In children, tapping the tumour is often productive of a radical cure. The cyſt is frequently found filled with a fluid of ſo viſcid a quality, that it will not paſs through the cannula of a trocar.

The radical operation, formerly practiſed, was to lay open the ſwelling its whole length, and cut away as much of the cyſt as could be accompliſhed, without riſk of wounding the ſpermatic veſſels. The wound was afterwards dreſſed with digeſtive applications. Modern experience proves, however, that this caſe can be radically cured with the port wine injection, juſt like the hydrocele of the tunica vaginalis, and as the method is free from all ſeverity and danger, it certainly deſerves to be recommended. Sir James Earle aſſures us, that he has ſucceſsfully treated the diſeaſe in this way.

In certain examples, two or three ſeparate cyſts, filled with fluid, are met with in the cellular membrane of the ſpermatic cord or ſcrotum. While ſmall, they can eaſily be diſtinguiſhed from each other; but when they have acquired a conſiderable ſize they lie ſo cloſe together, that they ſeem like one ſingle uniform ſwelling. Furrows, however, may frequently be felt between them, and ſome information may be obtained from a recollection of the early ſtage of the diſeaſe. But in operating, the nature of the caſe cannot fail to ſhew itſelf, it being impoſſible to diſcharge all the fluid, unleſs an opening be made into each of the cyſts. Every operator ſhould uſe the utmoſt care not to injure the teſticle and ſpermatic cord, as theſe parts have no fixed ſituation with reſpect to the tumours. The place of the teſticle may, indeed, be often aſcertained beforehand, by the peculiar pain which is occaſioned by preſſing it.

Encyſted hydroceles have occaſionally been remarked in women. They are moſtly ſituated in the vicinity of the groin (Journal de Medécine, t. 82.) or elſe in one of the labia. Authors adviſe us to treat them juſt like other encyſted hydroceles. We ſee no reaſon why they ſhould not be extirpated in the manner of common encyſted tumours.

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When a hernia has been reduced, and the deſcent of the bowels again effectually hindered by the gradual cloſure of the neck of the ſac, a collection of fluid ſometimes takes place in the cavity of the latter part. We have already de-to defer the operation till the fluid of the hydrocele is accumulated again in ſufficient quantity.

No objection can be reaſonably urged againſt the method, on account of the preceding accident, which is eaſily avoidable, and is always imputable either to awkwardneſs or negligence.

After the operation, the puncture is to be covered with a piece of lint and ſoap-plaſter, and the ſcrotum is to be ſupported in a bag-truſs. As ſoon as the parts begin to inflame and become tenſe and painful, then an emollient poultice is to be applied to them, care being taken to employ the ſuſpenſory, keep the patient on an antiphlogiſtic regimen, and quiet in bed. If the inflammation ſhould appear to exceed the requiſite degree, leeches may be put on the ſcrotum, the patient gently purged, and even bled in the arm.

Congenital Hydrocele of the Tunica Vaginalis.—The diſeaſe is ſo named when the tunica vaginalis, beſides containing a preternatural quantity of fluid, is uncloſed above, ſo as to have an open communication with the cavity of the abdomen. In moſt caſes the fluid, in all probability, is ſecreted by the peritoneum, and then deſcends by its weight into the ſcrotum. This form of the hydrocele has eſcaped the notice of the generality of ſurgical writers. The French ſurgeon, Deſault, however, has given a deſcription of it, and we find that he was in the habit of effecting a radical cure by means of a vinous injection. The nature of the diſeaſe cannot be difficult of diſcrimination, when the ſurgeon adverts to the tranſparency and fluctuation of the tumour, the abſence of pain, and the diſappearance of the ſwelling in the recumbent poſture, or on preſſure being made.

Deſault uſed to cure the complaint in the following manner. After letting out the fluid with a trocar, he took care to reduce any viſcera which happened to be protruded, and directed a confidential aſſiſtant to cloſe the communication between the abdomen and tunica vaginalis by preſſure. The injection was then introduced through the cannula into the cavity of the hydrocele. In this way, Deſault not only cured a boy of a hydrocele, but alſo of a hernia, with which he was afflicted. Œuvres Chirurgicales de Deſault, par Bichat, tom. ii.

Hydrocele of the Spermatic Cord.—In this caſe the fluid is contained in the cellular ſubſtance which ſurrounds the ſpermatic veſſels, and forms what is ſometimes named the common ſheath of the cord. The water is not diffuſed in all the cellular membrane of the ſcrotum. Some writers think that the complaint might, with greater propriety, be called an œdema of the ſpermatic cord. However this may be, it is certain that this ſpecies of hydrocele is the leaſt frequent. In external appearance it is ſubject to conſiderable variety, according to the ſtage in which the diſeaſe preſents itſelf. In the early ſtate, the ſwelling merely ſurrounds the lower part of the ſpermatic cord, and has no connection with the abdominal ring, the upper portion of the cord remaining quite free. The ſhape of the tumour is generally pyramidical, having a kind of apex above, and a broad baſe below. The teſticle can be quite plainly felt juſt below the ſwelling. The tumour is unattended with pain, has a doughy feel, and allows its ſhape to be altered by preſſure. The ſcrotum retains its natural corrugated appearance, being only ſomewhat more full and diſtended on the affected ſide than the other. In a more advanced ſtate, the ſwelling undergoes two alterations; it aſcends up to the abdominal ring, ſo that the upper portion of the cord can no longer be felt; and it deſcends ſo far down by the ſide of the teſticle, that this gland is likewiſe completely concealed. In the extreme ſtage of the diſeaſe, not only the cellular ſubſtance which ſurrounds the ſpermatic cord in the ſcrotum is diſtended with water, but even that which forms the inveſtment of the ſpermatic veſſels in their courſe from the inner to the outer opening of the abdominal ring.

The firſt ſtage of the hydrocele of the ſpermatic cord may eaſily be diſtinguiſhed from all other tumours of the ſcrotum, for there are none which bear ſo much reſemblance to it as to be readily miſtaken. But in the very advanced period of the diſeaſe, the ſwelling has much of the appearance of an omental hernia. It has the ſame ſoft flabby feel; it paſſes up into the abdominal ring; and the latter opening is wide and dilated. When the patient has been long in a ſtanding poſture, the water deſcends from the cellular ſubſtance which ſurrounds the ſpermatic veſſels within the ring, and paſſes into the cellular membrane, with which they are inveſted below this aperture; conſequently, the external ſwelling undergoes an increaſe of ſize. On the other hand, when the patient lies down for a time, the tumour diminiſhes. It may alſo be leſſened by external preſſure, and even nearly puſhed within the ring. Likewiſe, when the patient coughs, or holds his breath, the tumour ſwells and becomes larger. Such ſymptoms correſpond with thoſe of an omental hernia. The two diſeaſes, however, may, with a little attention, be eaſily diſcriminated from one another. By adverting to the early ſtage of the diſeaſe, and recollecting that the ſwelling firſt made its appearance at the lower part of the ſpermatic cord, had then no connection with the ring, and afterwards gradually aſcended into this opening, the ſurgeon may know with certainty that the caſe cannot poſſibly be an omental rupture. A careful examination of the ſwelling will alſo diſcover the difference. An epiplocele communicates the feel of ſeveral lumps or maſſes, and is ſofter in ſome places than others. On the contrary, the hydrocele of the ſpermatic cord has every where a ſmooth uniform feel. Its ſhape alſo undergoes alterations according to poſture. When the patient obſerves an horizontal poſition, and the ſcrotum does not hang down, the hydrocele becomes oblong, equally thick, and cylindrical. But when the patient continues in a ſtanding poſture, and the ſcrotum is unſupported, the ſwelling becomes pyramidical, that is to ſay, broad below and thin above. Its ſhape may be altered by making preſſure on it for a little while. When the lower part is thus preſſed it becomes thin, while the upper portion increaſes in thickneſs; and *vice verſâ*. Although an omental hernia alters in ſize, it undergoes no change of ſhape, at leaſt none that is ſo plain and durable. When the horizontal poſture or external preſſure is long continued, the hydrocele of the ſpermatic cord, like the epiplocele, becomes ſmaller, or even appears to paſs entirely within the abdominal ring. Like this hernia, alſo, it ſeems to deſcend again, when the patient continues erect, or the preſſure is removed; but ſtill a difference is obſervable in the modes in which the two diſeaſes return. For on applying two fingers to the abdominal ring, at the period when the hydrocele is aſcending or deſcending, nothing can be felt to paſs up or down; but if the caſe be an epiplocele, the viſcera can be diſtinctly felt to paſs into, or out of, the abdominal ring. The deſcent and reduction of an omental rupture are moreover obſerved to happen more quickly than the aſcent and falling down of the fluid of the hydrocele. When the latter tumour is large, the patient ſuffers ſhooting pains in the loins, at the period of urging the fluid upwards by preſſure.

If the diſeaſe has made conſiderable progreſs, a fluctuation may be diſtinguiſhed in the ſwelling, upon laying one hand upon its upper part and the other below, and making preſſure with the firſt downwards, and with the ſecond upwards, in an alternate manner. The abdomen, in the vicinity of the ring, is alleged to appear ſometimes preternaturally prominent, on preſſing the fluid upwards.

Laſtly, it deſerves attention, that, in the hydrocele of the cord, no complaints of the ſtomach and bowels prevail, as they uſually do in caſes of epiplocele.

The hydrocele of the ſpermatic cord is generally a local diſeaſe, which proceeds from cauſes altogether local. Sometimes it ariſes from wearing an ill made truſs. Children are occaſionally born with it. (Delattre Journal de Medécine, t. 32.) In certain inſtances it appears to originate from coſtiveneſs. Frequently it is the conſequence of a general dropſical affection of the ſyſtem.

Should the diſeaſe depend upon internal cauſes, it is the buſineſs of the ſurgeon to endeavour to remove them. When it ariſes from local cauſes, a ſurgical operation is commonly neceſſary for its cure, diſcutients very ſeldom being found effectual. It is to be obſerved, however, that when this kind of hydrocele is ſmall, it is hardly an object of ſurgery; the pain or inconvenience which it produces being ſo little, that few people would chooſe to ſubmit to an operation to get rid of it; and (as Pott ſays) it is very ſeldom radically curable without one. But when the hydrocele is large, or affects the membrane within the abdominal ring as well as without, it becomes an apparent deformity, is very inconvenient both from ſize and weight, and the only method of cure which it admits is far from being void of hazard.

Authors deſcribe two operations for the relief of this diſeaſe, one is called palliative, and conſiſts in making a few punctures with a lancet in the tumour; the other is named radical, and is executed by making an extenſive inciſion into the ſwelling.

The generality of patients are content with the relief derived from the employment of a ſuſpenſory; and, except in bad caſes, an operation ſeems ſcarcely adviſable.

Encyſted Hydrocele of the Spermatic Cord.—The fluid is ſometimes obſerved to be contained in a preternatural cyſt formed in the cellular membrane, and reſembling ſuch as commonly compoſe the inveſtment of encyſted tumours. This ſpecies of hydrocele is moſtly met with in children and young ſubjects; and not often in adults and old perſons. The ſwelling is moſt frequently ſituated about the middle of the ſpermatic cord, and is more or leſs of an oval ſhape. In ſome caſes it lies cloſe to the cord; in others it is ſo diſtant from this part, that the finger may be put between them. Below the tumour is the inferior portion of the ſpermatic cord, together with the teſticle; while above, the upper part of the cord can be plainly felt to be quite free, ſo that the ſwelling manifeſtly has no connection with the abdominal ring. But there are examples in which the diſeaſe acquires ſuch magnitude, that it mounts upwards as far as the ring, and deſcends down to the bottom of the ſcrotum. In this circumſtance the caſe may ſomewhat reſemble the hydrocele of the tunica vaginalis. The teſticle, however, can always be diſtinctly felt on the outſide of the ſwelling, a fact which immediately makes an experienced ſurgeon acquainted with the nature of the diſeaſe. A miſtake would be attended, indeed, with no ſerious ill conſequences, the treatment of both tumours being ſimilar. It may be remarked, likewiſe, that the ſwelling is completely circumſcribed, has a very even ſurface, and is entirely free from pain. A diſtinct fluctuation cannot often be felt.

In young ſubjects, the tumour may frequently be diſperſed by external means; but in ordinary caſes a ſurgical operation is indiſpenſable for the cure of the diſeaſe, and is of two kinds; one palliative, the other radical. The firſt conſiſts in merely diſcharging the fluid with a lancet or trocar. Care muſt be taken to avoid injuring the ſpermatic cord. Here a lancet is moſtly preferred to a trocar. In children, tapping the tumour is often productive of a radical cure. The cyſt is frequently found filled with a fluid of ſo viſcid a quality, that it will not paſs through the cannula of a trocar.

The radical operation, formerly practiſed, was to lay open the ſwelling its whole length, and cut away as much of the cyſt as could be accompliſhed, without riſk of wounding the ſpermatic veſſels. The wound was afterwards dreſſed with digeſtive applications. Modern experience proves, however, that this caſe can be radically cured with the port wine injection, juſt like the hydrocele of the tunica vaginalis, and as the method is free from all ſeverity and danger, it certainly deſerves to be recommended. Sir James Earle aſſures us, that he has ſucceſsfully treated the diſeaſe in this way.

In certain examples, two or three ſeparate cyſts, filled with fluid, are met with in the cellular membrane of the ſpermatic cord or ſcrotum. While ſmall, they can eaſily be diſtinguiſhed from each other; but when they have acquired a conſiderable ſize they lie ſo cloſe together, that they ſeem like one ſingle uniform ſwelling. Furrows, however, may frequently be felt between them, and ſome information may be obtained from a recollection of the early ſtage of the diſeaſe. But in operating, the nature of the caſe cannot fail to ſhew itſelf, it being impoſſible to diſcharge all the fluid, unleſs an opening be made into each of the cyſts. Every operator ſhould uſe the utmoſt care not to injure the teſticle and ſpermatic cord, as theſe parts have no fixed ſituation with reſpect to the tumours. The place of the teſticle may, indeed, be often aſcertained beforehand, by the peculiar pain which is occaſioned by preſſing it.

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When a hernia has been reduced, and the deſcent of the bowels again effectually hindered by the gradual cloſure of the neck of the ſac, a collection of fluid ſometimes takes place in the cavity of the latter part. We have already deſcribed

ſcribed the congenital hydrocele, where water collects in the tunica vaginalis, and the ſac has an open communication with the abdomen. We have further recorded the ſucceſs with which Deſault freed a lad not only of ſuch a hydrocele, but alſo of a hernia, by the employment of an injection. Certainly, the hydrocele of a hernial ſac, when the neck of the latter part is cloſed, may be ſafely treated juſt like an ordinary hydrocele. But ſhould the ſac communicate with the abdomen, or contain any protruded parts, ſuch treatment would be raſh and almoſt certainly fatal.

HYDROCELODES Ischuria, in *Surgery*, a retention of urine, produced by a rupture of the urethra. The term is derived from ὕδωρ, *water*, and κηλώδης, attended with ſwelling.

HYDROCEPHALUS, in *Medicine*, from ὕδωρ, *water*, and κεφαλον, *cephalon*, the *head*, ſignifies ſtrictly *dropſy*, or *water, in the head.*

For the knowledge that we poſſeſs, relative to the nature and characteriſtic ſymptoms of effuſion of water within the cranium, we are indebted almoſt entirely to modern obſervation. Hippocrates, Aëtius, Celſus, and ſome other ancient phyſicians, ſpeak of the preſence of water between the cranium and the ſurface of the brain, and of an external hydrocephalus, or dropſy of the teguments of the head; but the writers of the 16th century firſt mention the occurrence of water in the ventricles of the brain itſelf. (See Mercurialis, Opuſcula Aurea, lib. de Morb. puerorum.) After this occurrence had been obſerved by a number of writers, and had even been mentioned by the celebrated Boerhaave, the ſymptoms, by which it might be diſtinguiſhed from other diſeaſes of the brain, remained ſtill unknown. The diſorder was briefly and inaccurately deſcribed in the Memoirs of the Academy of Sciences at Paris, for the year 1718, by M. Petit; but it was not until the publication of a poſthumous eſſay of Dr. Whytt, profeſſor of medicine at Edinburgh, in 1768, that a well-connected hiſtory of the ſymptoms accompanying the effuſion of water into the ventricles of the brain was clearly made out, or that hydrocephalus was known as a diſtinct diſeaſe. Immediately after this publication, Dr. Fothergill, whoſe ſagacity had already detected moſt of the peculiarities belonging to the diſeaſe, read a paper on the ſubject to a medical ſociety in London, which was publiſhed in 1772 (ſee Med. Obſerv. and Inquiries, vol. iv. art. 3.), ſince which period the diſeaſe has been well known to medical practitioners.

Before the appearance of Dr. Whytt's Eſſay, the term *hydrocephalus* had been almoſt entirely confined to a chronic affection, analogous in its cauſes and progreſs to other forms of dropſy in the human body. This diſorder, commencing ſoon after birth, before the ſutures of the ſkull are united, proceeds very ſlowly, continuing even for years, until the head becomes enormouſly large, without producing any very extraordinary ſymptoms. After death, which is uſually preceded by convulſions, the brain is found ſo exceedingly diſtended by water within the ventricles, as to be rendered extremely thin; or, on the other hand, ſo much oppreſſed by the water, collected between it and the ſkull, as to aſſume rather the appearance of a ſmall gland than that of a brain. This form of the diſeaſe, or the *chronic hydrocephalus*, we have deſcribed under the article, Dropsy *in the head*. The variety of the diſeaſe, to which our attention is at preſent directed, differs altogether from the one juſt mentioned; and, being accompanied by febrile ſymptoms, and generally of ſhort duration, has been diſtinguiſhed by the appellation of *acute* hydrocephalus, or

Hydrocephalus *acutus*. This name was firſt appropriated to the diſeaſe in queſtion by Dr. Charles William Quin, of Dublin, in his inaugural diſſertation, publiſhed at Edinburgh in the year 1779. He pointed out the febrile, or rather inflammatory nature of the affection of the brain, in the commencement of the complaint, of which the effuſion of water appeared to be a conſequence, and by which the diſeaſe was diſtinguiſhed from the ordinary dropſical effuſions. Dr. Cullen, being convinced of the accuracy of this ſtatement when he republiſhed his "Noſologia Methodica," in 1780, removed the *acute hydrocephalus*, from the dropſies to the apoplexies, with the new appellation of *apoplexia hydrocephalica*, and retained only the *chronic* form as one of the genera of dropſies, with the old name of hydrocephalus. Dr. Ruſh, of Philadelphia, having taken the ſame view of the diſeaſe with Dr. Quin, and deeming it inflammatory in the commencement, called it *phrenicula*, from its being a diminutive ſpecies or ſtate of *phrenitis*, or inflammation of the brain. See his Med. Inquiries and Obſervations, vol. ii. p. 215. Philad. 1793.

Phyſicians have acknowledged the extreme difficulty of detailing a diſtinct hiſtory of the ſymptoms of hydrocephalus, which ſhall be exemplified in every caſe; and they have, eſpecially, differed in deſcribing the appearance which the diſeaſe aſſumes in its commencement, and the length of time which it uſually occupies in its progreſs. The truth is, we believe, that each writer has ſeen what he has deſcribed; for that the malady actually puts on a conſiderable variety of character, both in reſpect to its phenomena and duration. The lateſt writer on the ſubject, Dr. Cheyne, now of Dublin, has deſcribed three different modes in which it has made its attack in different inſtances which have fallen under his obſervation (ſee his Eſſays on the Diſeaſes of Children, Eſſay III. Edinburgh, 1808.); and a ſimilar diviſion of the varieties of the diſeaſe has alſo been made by profeſſor Kuhn of Leipſic. (See Edinburgh Med. and Surg. Journal, vol. iii. p. 13.) Theſe are, 1ſt, when the ſymptoms come on ſlowly and gradually; 2d, when the attack is ſudden and the progreſs more rapid; and 3d, when the diſeaſe enſues upon ſome previous indiſpoſition. The firſt of theſe Dr. Kuhn terms the *nervous*, and the ſecond, *inflammatory* hydrocephalus; the third he mentions only as a ſequela of ſcarlet fever. Theſe varieties of the ſymptoms, however, only mark the attack of the diſeaſe; for in the latter ſtages there is little diverſity in the appearances.

In the firſt, or gradual mode of attack, before any characteriſtic ſigns of the diſeaſe appear, the child for ſome days, or even weeks, has complained of pains in his head or belly, while at the ſame time he has been ſlightly feveriſh, dull, ill-complexioned, without appetite, or perhaps with an increaſed appetite, and with ſome diſorder in the functions of the abdominal viſcera. Theſe complaints riſe gradually, but are ſeldom alarming; and the child's friends are not awakened to a ſenſe of his danger, until, advancing a ſtep farther, the diſorder begins to ſhew itſelf more diſtinctly. The dulneſs is accompanied with pains in the head, which is alſo connected, upon getting up in the morning perhaps, or after he has begun to ſtir about, with vomiting. Yet even this ſymptom is often diſregarded, until the ſecond or third day of its recurrence, and the diſeaſe has made conſiderable progreſs, before the illneſs of the patient is ſuſpected to ariſe from a diſordered condition of the brain. When the attention is more particularly excited by theſe ſymptoms, the head-ache, which is chiefly in the forehead, or ſometimes in the crown, will be found to return at ſhorter intervals. The child often affectingly complains of his head. He ſighs frequently, is dull, his head requires to be ſupported; he complains of wearineſs in his eyes; the pupils are ſometimes unuſually contracted, and he has an averſion to light ; his tongue is white, and his belly generally coſtive : the ſtools are firſt clayey ; as the diſeaſe advances they become of a gelatinous conſiſtence, of a dark green colour, ſometimes as dark as tar, and of a ſickly ſmell. The pulſe becomes quick ; and at particular times of the day theſe ſymptoms are attended with febrile heat and irritability, and the child complains not only of head-ache, but of pains in different parts of the body, ſometimes extremely acute. At one time he complains of pains in his limbs, at another of pains in his breaſt, or in the nape of the neck, very often in his bowels; and before the anxiety of his friends can make any preparations to relieve him, the pain is gone, or fled to ſome other part ; at another time he lies on his mother's knee, reſtleſs and whining, as from dull rheumatic pain. Theſe diſorders neceſſarily impair the child's ſtrength, and in the courſe of ten days or a fortnight his appearance is conſiderably altered ; he is peeviſh and feeble.

In the ſecond form of the attack, Dr. Cheyne obſerves, the diſeaſe runs a more rapid courſe. After the child has been drooping for a ſhort time, which, although it ſometimes eſcapes obſervation, is generally recollected, there is a ſudden change to a fever, attended even from the firſt with a great degree of heat and irritation, with frequent but ſhort and irregular remiſſions, fluſhing, ſevere head-ache, tenderneſs all over the abdomen, and increaſed ſenſibility, with ſometimes brilliancy of the eyes. It is ſaid to be often difficult immediately to diſtinguiſh hydrocephalus from fever, and this is the form of the complaint in which there is the greateſt reſemblance between the two diſeaſes ; but we are led to ſuſpect ſome deeply ſeated evil, from the frantic ſcreams, and complaints of the head and belly, alternating with ſtupor, or rather lowneſs ; and we are ſtruck with the irritability of the ſtomach, in a degree beyond what we find in fevers of this country, retching and vomiting being often brought on by a change of poſture, certainly by every attempt to ſit up in bed, and with the diſordered ſtate of the bowels which attends this irritability of the ſtomach ; and when at any time the child has a little reſpite from the violence of theſe ſymptoms, we find our ſuſpicions confirmed by his look ; for, in this diſeaſe, when the features do not expreſs pain or terror, there is not unfrequently an expreſſion, which it has in common with ſome other diſeaſes of the brain, of dejection, bordering upon inſenſibility, which is quite inſupportable to thoſe who are intereſted in the patient's recovery.

In the third mode of attack, when hydrocephalus ariſes after an imperfect ſtate of health, as where there had been a ſcrofulous action which has abated, or where the child has had ſome epidemic diſeaſe formerly (perhaps many months before), from which he has not perfectly recovered, or regained ſound health, the attack is ſometimes made with all the violence diſtinguiſhing the ſecond form juſt deſcribed. When again the attack comes on as the ſequel of an acute diſeaſe, as fever, hooping-cough, perhaps dentition, or during ſome actually exiſting ſcrofulous diſeaſe, the child almoſt imperceptibly ſlips into hydrocephalus ; there are ſcarcely any of the acute ſymptoms ; and the palſies or convulſions are the firſt indications of the new diſorder.

In whatever mode the diſorder commences, it is marked in what has been called, by Dr. Whytt, the *firſt ſtage* by a febrile condition, varying much in degree and regularity ; the ſleep becomes imperfect and apparently uneaſy, the little patient often grinding his teeth, picking his noſe, and ſtarting with a ſcream, as if he were terrified. There is great fluctuation in the feveriſhneſs : at one time the pulſe is quick and throbbing ; the heat of the body is increaſed ; the ſkin parched ; there is a deep bluſh on the face, more eſpecially on one cheek ; and the breathing is ſighing, laborious, and quick : at another time the blood circulates more equally ; the ſkin is of a natural warmth, or moiſt with temporary perſpiration ; the countenance is pale ; and the breathing ſo ſoft that it cannot be heard. There is alſo great fluctuation in the ſtate of the other functions. Sometimes the ſtate of the ſtomach appears to be nearly natural ; at other times the heavy ſmelling breath, that has been ſuppoſed by Dr. Whytt to be peculiar to this diſeaſe, the total abſence of appetite, and conſtant vomiting, even for days, ſhew the ſtomach to be in the greateſt diſorder. The bowels are never regular ; they are generally ſlow, requiring cathartic medicines, and now and then a conſtant and ſevere bilious purging attends the vomiting. The urine is ſometimes withheld for 24 or 36 hours ; occaſionally a frequent deſire to paſs it has been obſerved. And not only are the vital and natural functions irregular ; we find the ſame extremes in the animal functions ; to this, indeed, the diſeaſes of the brain owe much of their intereſting character. The ſenſes and judgment are often perfect and entire, ſometimes morbidly acute ; in general the retina is painfully ſenſible to light, and the child is ſometimes unpleaſantly affected by ſlight ſounds : on the contrary, ſometimes, even in the early days of the diſeaſe, the mind is ſubdued, and there is the greateſt dulneſs of apprehenſion.

It generally happens, but by no means with the certainty which the deſcription of Dr. Whytt would lead the ſtudent to expect, that after the firſt or febrile ſymptoms have continued an indefinite time, from a few days to a fortnight or more, a remarkable change takes place in the diſeaſe, eſpecially in the condition of the pulſe, by which the commencement of the *ſecond ſtage*, according to Dr. Whytt and others, is marked. The pulſations become ſlow, even ſlower than in health, and at the ſame time unequal and irregular, both as to ſtrength and the intervals between the ſtrokes ; but, as Dr. Cheyne remarks, they are eaſily doubled by the leaſt exertion. With the ſlowneſs of the pulſe, a greater degree of dulneſs and torpor comes on ; the pain of the head ſeems to abate, or at leaſt the patient becomes apparently leſs ſenſible of it ; and as this ſtage advances, he grows drowſy and lethargic, yet moans heavily, without being able to tell what diſtreſſes him; and often ſtarts and cries in a wild manner, as if from momentary attacks of acute pain. The pupils are obſerved to be dilated, and a want of conſent between the two eyes, attended with imperfect, and not unfrequently double viſion, takes place. As the diſeaſe proceeds, the ſquinting and dilatation of the pupil increaſe ; the patient lies with one or both eyes half cloſed, which, when minutely examined, are often found to be completely inſenſible to light ; and they now loſe their vivacity in conſequence of a filmy covering of the cornea. The ſickneſs ceaſes, and whatever food or medicine is offered, is uſually ſwallowed with apparent voracity ; the bowels generally remaining obſtinately coſtive.

Theſe ſymptoms are ſoon ſucceeded by others, which mark the *third ſtage*, and announce the approach of death within five or ſix days, or ſometimes within a much ſhorter period. The pulſe now becomes equal and regular, and riſes to a rapidity greater than ever ; which continues to increaſe while life remains. There is no diſeaſe, we believe, in which the pulſations become ſo frequent, and yet continue diſtinctly numerable, as in the cloſing ſcene of hydrocephalus. Dr. Whytt ſays, that no patient dies of this diſeaſe, while his pulſe remains under 130 beats in the minute ; in one caſe he counted it 210 in the minute on the day of death. We have diſtinctly enumerated 190 beats under the ſame circumſtances.

A comatoſe ſtate now comes on. The patient lies with a frequent hectic fluſh on his cheek, alternating with a deadly paleneſs; drawing a long ſigh at intervals; often grinding his teeth; incoherent, or in a ſtate of complete inſenſibility; perhaps picking about or ſawing the air with one hand, while the oppoſite ſide is palſied; with a burning fever on his ſkin, or ſweat forced from every pore; and all theſe ſymptoms alternating with, and at laſt finiſhed by, apoplectic breathing, and convulſions.

The whole concourſe of the ſymptoms, as well as the changes in the ſtate of the pulſe, which occur in each of the three ſtages, conſtitutes a very remarkable peculiarity in this diſeaſe, and gives a character to each ſtage. The *firſt* has been called the ſtage of increaſed ſenſibility, or inflammatory irritation: the *ſecond*, that of decreaſed ſenſibility, or torpor: and the *third*, the paralytic or convulſed ſtage. In the *firſt*, every ſtimulus produces an inordinate effect: there is great averſion to light and to ſounds; watching, ſickneſs, pain, and quickened pulſe. In the *ſecond* ſtage, the child is not eaſily rouſed, his pupil is dilated, and does not contract on the approach of light, his pulſe is ſlow, he is lethargic, with often an obſtinately coſtive belly. In the *third* ſtage, which may, perhaps, be conſidered as a continuation of the ſecond, there is ſquinting, rolling of the head, delirium, ſtupor, convulſions, with a rapid thready pulſe.

Phyſicians have repreſented the duration of the diſeaſe differently: Dr. Whytt ſuppoſed it to extend to four, five, or ſix weeks, from the date of the firſt ſymptom; while Dr. Fothergill commonly found it to terminate in three weeks. On the whole, experience ſeems to have corroborated the obſervation of Dr. Fothergill. But, like every other diſeaſe, of the brain, hydrocephalus is uncertain in its duration, eſpecially when the pulſe has become ſlow, or the ſtage of torpor has arrived. Sometimes, in the courſe of two or three days from this change, the child ſhall be carried off; while, in other caſes, even the laſt ſtage continues day after day, for upwards of a week, when, at every viſit, the obſerver would conceive that the patient had only a few hours to live. In caſes of the ſecond, or acute mode of attack, and alſo in the third, the whole diſeaſe ſometimes runs its courſe in a few days; while, in the firſt mode, from the great length of the firſt ſtage, it has been obſerved to laſt many weeks. Dr. Quin ſtates, apparently on conjecture, that the diſeaſe may be expected to be more rapid in its courſe, in adult perſons, than in young children. But our obſervation accords with that of Dr. Cheyne and others, in ſtating the contrary. In a boy of twelve years old, we once ſaw the diſeaſe run on, in a very gradual courſe, to the length of eight weeks, and then terminate fatally.

Nor is there leſs variety in the ſymptoms and progreſs of the diſeaſe, than in its duration; inſomuch that Dr. Quin has called it a "truly Proteiform diſtemper," and Dr. Ruſh accords in the juſtneſs of the appellation. Caſes have terminated fatally, in which ſome one or more of the characteriſtic ſymptoms have not appeared, and ſometimes when "no one ſymptom afforded any ſuſpicion of the real cauſe of death," which was aſcertained by diſſection. (See Dr. Quin's Eſſay, p. 43.) The ſame author mentions another caſe, which terminated fatally in ſeven days, and diſſection determined the nature of it; "yet the uſual variations of the pulſe in the ſeveral ſtages did not take place; the pupils were not dilated until the laſt day of the child's life; he never once vomited, never expreſſed a diſlike to light, and the head-ache, though conſtant, was not violent." Dr. Ruſh obſerves, "I have not found the dilated and inſenſible pupil, the puking, the delirium, or the ſtrabiſmus, to attend univerſally in this diſeaſe. I ſaw one caſe in which the appetite was unimpaired from the firſt to the laſt ſtage of the diſorder." (Med. Inq. and Obſ. vol. ii. p. 209.) On the contrary, we lately ſaw a caſe, in which the chief ſymptom of indiſpoſition, for the firſt four or five days, was a conſtant ſickneſs in the ſtomach, which rejected almoſt every thing as ſoon as ſwallowed while the head remained apparently free from uneaſineſs. Other caſes are mentioned by Dr. Ruſh, in which no head-ache occurred during the courſe of the diſorder; in which no preternatural ſlowneſs or intermiſſion was ever perceived in the pulſe; and in which no dilatation of the pupil, ſquinting, ſickneſs, or loſs of appetite had attended: and others, in which an uncommon acuteneſs of hearing, palſy of one ſide, and the ſymptom of hydrophobia, had reſpectively occurred. Dr. Whytt alſo mentions an irregularity in the ſtate of the pupil. "Three or four days before the death of a boy of five years old," he ſays, "I was ſurpriſed to find the pupils, which had been much dilated before, no larger than natural. At firſt I flattered myſelf that the diſeaſe had taken ſome favourable turn; but was ſoon undeceived: for, upon giving the child a ſpoonful of weak cinnamon water, with ſome drops of *ſpiritus volatilis oleoſus*, the pupils became as wide as they had been the day before. In leſs than half an hour after they contracted again; but immediately dilated upon holding ſome ſpirit of *ſal ammoniacus* to his noſe. I have ſince obſerved the ſame interchanges in the pupils of a boy of four years old, on the third day before he died. In this caſe the pupils not only were enlarged, by giving him a ſpoonful of wine, or holding volatile ſpirits to his noſe, but alſo by ſo ſmall a ſtimulus as my lifting up his eyelids, which had loſt all their motion, and had fallen ſo far down as to cover near the half of the eye." Obſervations on Dropſy in the Brain, Whytt's Works, p. 733.

Diſſection.—The circumſtance which was firſt noticed, on examining the head by diſſection, in patients who had died of this diſeaſe, was the conſtant occurrence of a limpid watery fluid, diſtending the ventricles of the brain, and amounting in different inſtances to the quantity of from two to ſix ounces. In ſome caſes, only one of the lateral ventricles has been found thus diſtended. A ſmall quantity of fluid is alſo commonly found between the membranes ſurrounding the brain, eſpecially under the *tunica arachnoides*, both above and at the baſe of the brain. The water, collected from the ventricles in hydrocephalus, does not coagulate by heat; in which reſpect it differs from the *ſerum* of the blood, from the water that is found in the *pericardium*, and from that which is taken from the abdomen, by tapping, in dropſy.

But in addition to this effuſion of water, later authors have obſerved, in many inſtances, the marks of congeſtion in the blood-veſſels of the brain, and of different degrees of inflammatory action. Dr. Cheyne remarks, "upon diſſection, we generally find within the cranium, the veins, particularly thoſe of the membranes on the ſurface of the brain, and lining of the ventricles, gorged with blood; ſometimes conſiderable adheſion between and thickening of the membranes, and minute and florid veſſels upon the *pia mater*." (Loc. cit. p. 31.) And Dr. Quin has related ſeveral caſes, "wherein the quantity of fluid found in the ventricles was very conſiderable; but at the ſame time, there were ſigns ſo viſible of an increaſed flow of blood to the brain, that in all of them the veſſels were remarkably turgid; in moſt of them a degree of inflammation had taken place, as appeared at the time of diſſection, either by preternatural adheſions of the membranes, or by a partial opacity and increaſed thickneſs of them, together with patches of inflammatory cruſt, very ſimilar to thoſe which are found on the abdominal viſcera of perſons whoſe death has been the conſequence of *enteritis*; or on the lungs and *pleura* of thoſe who have ſunk under pulmonic inflammation." P. 51.

In inveſtigating the ſeats of diſeaſes by diſſection, phyſicians are too apt to confine their examinations to that part of the body, in which the moſt prominent ſymptoms of derangement had occurred during life; by which practice a very imperfect knowledge of the morbid changes is often acquired. This error is too frequently committed in reſpect to hydrocephalus, when the contents of the *cranium* alone are examined: for it appears that the viſcera of the abdomen often ſuffer in this diſeaſe. "In the abdomen," ſays Dr. Cheyne, "I have found the inteſtines inflamed, and conſtricted from ſpaſm, and the ſurface of the liver of a bright red colour, abounding in minute veſſels; and ſometimes extenſively adhering to the peritoneum. In ſeveral diſſections, I have found the ſurface of the liver ſtudded with ſmall white tubercles, not larger than a grain of muſtard. The glands of the meſentery are often diſeaſed, &c." (P. 31.) And, in another place, the ſame writer remarks, "upon diſſection of hydrocephalic children, I have found in the liver the remains of great inflammatory action, and alſo proofs that undue irritation had exiſted in the alimentary canal." P. 46.

Cauſes of Hydrocephalus.—This ſubject remains in ſome degree of obſcurity, more eſpecially in what regards the exciting cauſes. A *prediſpoſition* to the diſeaſe is pretty obviouſly found in that peculiarity of conſtitution which is allied to ſcrofula, and which is characterized by a frame of body that is rather delicate and irritable, and often beautiful—and by acuteneſs of intellect and liveline ſs of diſpoſition—the ſkin being fair and well coloured, the eyes blue, and the hair light. This prediſpoſition is often *hereditary*, and attached to particular families. Dr. Cheyne attended two families, in one of which four children, in the other three, died of this diſeaſe; and he had "heard of an unfortunate family who loſt ſeven children of hydrocephalus." We are acquainted with one, in which ſeven children periſhed from this malady, when they arrived at a certain age, apparently of ſtrumous conſtitutions. Sauvages has a ſimilar obſervation. "Novi familiam," he ſays "cujus infantes circa ſextum ætatis annum omnes periere ex hoc morbo, ſcrofula huic effuſioni anſam præbente." (See his Noſol. Method. claſs. iv. gen. xii. 5. Convulſio ab Hydrocephalo:—alſo, gen. xviii, 14. Ecclampſia ab Hydrocephalo.) Dr. Percival ſtates, that of twenty-two caſes of which he kept notes, eleven were certainly ſtrumous children, and four were probably ſo. (Med. Facts and Obſ. vol. i. p. 129.) Hydrocephalus is more particularly a diſeaſe of *childhood*, occurring moſt frequently in the middle years, between weaning and puberty. Occaſionally, however, it is ſeen at every period of life, with the exception, perhaps, of old age. A ſtate of *imperfect convaleſcence* from ſcarlet fever, meaſles, ſmall-pox, whooping cough, and other acute diſeaſes, appears to generate a prediſpoſition to hydrocephalus. Many caſes of hydrocephalus occur, of which no *exciting cauſe* can be traced, ſometimes, indeed, little accidents, as falls and blows, are recollected, when the diſeaſe has made its appearance, which had occurred ſeveral weeks or months before, and had excited little attention at the time. Whether theſe accidents were actually the cauſes of the diſeaſe, which thus enſued, after a long interval of health, is certainly a matter of doubt. Dr. Cheyne obſerves, that, in upwards of a hundred caſes which he had attended, he had only met with one, in which external violence could be conſidered as the origin of the diſeaſe, and that in an indirect manner. This child had, at the ſame time, a ſevere and obſtinate catarrh; which he deemed more likely to impair the general health, and thus to prediſpoſe to hydrocephalus. He adds, that he has repeatedly ſeen ſymptoms of ſcrofula following a ſevere accident, which may thus intermediately induce hydrocephalus, by deranging the general health, and calling into action what, from a good and fortunate management, had hitherto been latent.

It would ſeem, however, that any circumſtance which can produce a ſtate of general debility, but eſpecially any cauſe exciting an active feveriſh ſtate, of the inflammatory kind, in children prediſpoſed to the diſeaſe, will call it into action. Hence the irritation of teething, and of worms in the alimentary canal, eſpecially if attended with convulſions; ſudden expoſure to cold; fevers; rheumatiſm; pulmonary conſumption; colic, and other diſeaſes, have been mentioned among the cauſes of hydrocephalus. (See Ruſh, Med. Inquiries, vol. ii. p. 211, et ſeq. and the references there given.) Some other cauſes have been alleged; ſuch as a ſuppreſſion, or ſpontaneous metaſtaſis, of eruptions, eſpecially of the ſcald head; the healing of old ulcers; the ceſſation of cuſtomary diſcharges; a ſerous colluvies of the blood; ruptured lymphatics, &c.; but theſe are apparently hypothetical ſuppoſitions, and their operation is not very obvious.

The *proximate cauſe*, as in many other diſeaſes, has been the ſubject of conſiderable difference of opinion. Dr. Whytt, Dr. Fothergill, and other authors, viewed the malady in the light of a mere dropſical effuſion into the cavities of the brain, partaking of the nature of ordinary dropſy in other parts of the body, and originating from the ſame cauſes. Dr. Quin, however, pointed out the error of this opinion, and the proper diſtinction between the chronic and the acute hydrocephalus, of which we now treat. There are many reaſons for adopting the opinion of Dr. Quin, and attributing the peculiar ſymptoms of the diſeaſe, not ſo much to an effuſion of water in the ventricles, as to a morbid circulation or accumulation of blood in the veſſels of the brain, which ſometimes proceeds to a degree of inflammation, which is generally followed by ſuch an effuſion. Dr. Cheyne adopts a notion very ſimilar to this. "I would venture to ſubmit the following," he ſays, "as a more conſiſtent view of the pathology of hydrocephalus. That in this diſeaſe there is produced a venous congeſtion, in addition to, and probably ariſing from, the increaſed arterial action: that the effuſion of ſerous fluid ariſes from this venous congeſtion: that this effuſion has a tendency to counteract the baleful effects of the increaſed action, and to retard the fatal termination of the diſeaſe: of courſe, that the effuſion into the ventricles is not the cauſe of the violent ſymptoms; and that the increaſed arterial action, though perhaps varied, does not ceaſe when the congeſtion and effuſion have taken place." P. 59.

There are many facts and obſervations which tend to corroborate this opinion. Dr. Quin mentions two caſes, in which the ſymptoms preceding death were, to all appearance, ſo unequivocal, that the phyſicians not only pronounced the diſeaſe to be water in the head, but likewiſe foretold the ſymptoms that were to be expected a few days before diſſolution: the looked for changes did accordingly take place, and the patients died. "In both caſes, to the aſtoniſhment of thoſe who were preſent, and prepared to find on diſſection a great redundancy of water within the cranium, *none could be diſcovered* in any part of the brain; but the *blood-veſſels were ſo unuſually diſtended*, that the whole of the cerebrum and cerebellum reſembled an anatomical preparation, in which the utmoſt force of injection had been employed." (P. 50.) Dr. Cheyne mentions two caſes of a ſimilar nature; in one of which the progreſs of the diſeaſe, although rapid, was regular, the three ſtages of Dr. Whytt being well marked. Scarcely a ſpoonful of water was found in the ventricles; " but the brain was ſo turgid, that when the bones were ſawed fairly round, the ſection was thruſt up half an inch by the ſudden and forcible protruſion of the cerebrum: not only the veins of the pia mater were loaded with blood in a very remarkable degree; the medullary ſubſtance of the brain was finely dotted with numerous red points, and the cortical ſubſtance ſtreaked with pencils of red parallel lines." In the other inſtance, " no effuſion was diſcovered in the ventricles" after death. It was an extreme caſe of the *acute* hydrocephalus, where the excitability was ſuddenly exhauſted by the violence of the attack. " When, as in this caſe, Dr. Cheyne adds, " the child dies early in the diſeaſe, with every ſymptom of accelerated arterial action, but before the ſubſequent congeſtion has exiſted for any length of time, the diſſection will never afford much effuſion. When, on the contrary, the patient long ſurvives the ſlow pulſe; and when, from the continuance of the diſeaſe, we have reaſon to think that the congeſtion has exiſted for a conſiderable time; then we find a large effuſion. In ſuch caſes I have diſcovered, within the head, little appearance of arterial action, as marked by the tiſſue of minute and florid veſſels: this ſtage of the diſeaſe was over; yet the effects of inflammation abundantly appeared in the thickened and greater adheſion of the membranes; in the great congeſtion; and indeed, from the pain, ſuffuſion of the eye, &c. we cannot doubt that it exiſts to the laſt." (Cheyne, p. 63.) Dr. Quin details ſeveral caſes, in which, together with conſiderable effuſion of water, the veſſels were found extremely turgid, and the previous exiſtence of a degree of inflammation was demonſtrated " by preternatural adheſions of the meninges, or by a partial opacity and increaſed thickneſs of them, with patches of inflammatory cruſt," &c.

On the other hand, numerous caſes are on record, in which quantities of effuſed fluid have been found, on diſſection, in the ventricles, when no complaint of pain in the head, or ſymptom denoting an oppreſſed brain, had exiſted before death. Maniacal patients, in whoſe ventricles many ounces of fluid have been found, have died without evincing any hydrocephalic ſymptoms. And, in fact, there is ſcarcely any organic diſeaſe of the brain which is not accompanied by effuſion.

Theſe facts being admitted, we think it were unneceſſary to argue the point taken up by Dr. Cheyne, againſt Dr. Quin and Dr. Ruſh, *viz.* whether " the morbid arterial action" in the brain amounts to ſuch a degree of inflammation as entitles it to be compared with *phrenitis*, or to be called *phrenicula*; or whether we muſt be content to ſay, with Dr. Cheyne, that it appears " to conſiſt of a diſeaſed action of a *peculiar* kind." P. 82.

This view of the diſeaſe, however, although doubtleſs correct as far as it goes, does not embrace the whole phenomena. It has often been obſerved that a train of ſymptoms, ſimilar to thoſe of hydrocephalus, has ariſen from the ſympathy which ſubſiſts between the brain and other organs, eſpecially the alimentary canal, the liver, and the urinary organs. (For inſtances of ſympathy with the laſt mentioned organs, ſee Sauvages, claſs vi. gen. xxix. 4. *Carus iſchurioſus*, and the references there given: alſo Med. Facts and Obſ. vol. i. art. 1.) It is chiefly, however, as Dr. Cheyne obſerves, from a morbid ſtate of the liver and alimentary canal, that we find the hydrocephalic ſymptoms by aſſociation to ariſe. Every practitioner of obſervation has probably been occaſionally ſurpriſed by the recovery of children under many of the ſymptoms of hydrocephalus, while purgative medicines, eſpecially of the mercurial claſs, were adminiſtered. Dr. Willan ſtates, that the hydrocephalus of Dr. Quin, marked by the preſence of inflammatory irritation in the head, as above deſcribed, " ſhould be diſtinguiſhed from the ſymptomatic hydrocephalus, which often takes place, with very ſimilar ſymptoms, after the criſis of malignant fevers; during the *hectica infantilis*; and in ſome other acute diſeaſes of children, particularly the febrile ſtate produced by dentition, worms, and diſorders of the bowels and meſentery. Caſes of this kind are uſually removed, within a week or two, by the uſe of calomel or other active purgatives, and bliſters." Reports on the Diſeaſes in London, p. 270.

Now we think this ſtatement much too general. It is certain that theſe irritations and morbid conditions of the bowels are common concomitants of the ordinary and fatal form of hydrocephalus. In his deſcription of the ſecond ſtage of the diſeaſe, Dr. Whytt mentions the diſcharge of worms, or of ſome ſubſtance like worms in a diſſolved ſtate, as a " frequent" occurrence (Works, p. 732.); and we have more than once ſeen a *lumbricus* voided under the ſame circumſtances. The condition of the ſtools, when hydrocephalus is eſtabliſhed, is ſo peculiarly morbid, that ſeveral practitioners ſpeak of " hydrocephalic ſtools," as ſufficiently intelligible to thoſe who have made any obſervation on the ſubject. The evacuations appear to conſiſt ſolely of a dark glazy bile, mixed with the mucus of the inteſtines. There are many other conſiderations, too, which tend to prove the connection of the proper hydrocephalus with this morbid condition of the abdominal viſcera, and to ſupport the opinion of Dr. Cheyne, Dr. James Curry, and others, that this diſeaſe " is often fairly and incurably eſtabliſhed by the ſympathy which the brain has with theſe organs." Cheyne, loc. cit. p. 38.

In the firſt place it would appear that hydrocephalic ſymptoms, ariſing from ſympathy with diſordered digeſtive organs, have ſometimes proved fatal, without producing any obvious change of ſtructure in the brain. Mr. Abernethy examined the body of a child, who had unequivocal ſymptoms of hydrocephalus, in which the brain was found perfectly healthy, the only diſeaſed appearance being in the bowels. (See his Surgical Obſervations, part ii. p. 193.) Again, Dr. Hamilton has obſerved, that " hydrocephalus often ſteals ſlowly on the devoted victim, with ſymptoms reſembling thoſe of maraſmus;" whence he thinks it not unreaſonable to ſuppoſe that the maraſmus, which is clearly the reſult of a morbid ſtate of the liver and bowels, may occaſionally give riſe to hydrocephalus. (See his Obſervations on Purgative Medicines.) Dr. Cheyne advances ſimilar obſervations. " In many caſes," he ſays, " previouſly to the hydrocephalic ſymptoms, the chylopoetic viſcera have been diſordered for many weeks. The appetite has been bad; the bowels coſtive, the ſtools betraying diſorder in the hepatic ſyſtem; there has been all that want of alacrity, both of body and mind, ſo invariably the conſequence of the derangement of the biliary ſecretion; and in ſeveral children, previous to the exiſtence of any morbid ſenſation, the firſt ſymptom of ill health was the loſs of the healthy colour of the ſkin. In children prediſpoſed to the diſeaſe, I have, while removing, by a courſe of purgative medicines, a vitiated biliary ſecretion and diſordered ſtate of the bowels, removed alſo the very ſymptoms which had preſented themſelves in other children of the ſame family, when the attacks of a hydrocephalus, which actually proved fatal, were ſuppoſed to have been eſtabliſhed. In children, where I did not know of any family prediſpoſition, I have, by the ſame means, in many inſtances, removed the ſymptoms which are always found in the beginning of hydrocephalus." — " The increaſed arterial action on the ſurface of the liver, the remains of which I have obſerved in my diſſections, to every appearance had been of ſome ſtanding, and in two or three inſtances, from the extent of the adheſions, it evidently had been of great intenſity. While the diſeaſe is forming, there is generally a defect in the function of the liver: it ſeems to admit of only a ſcanty and imperfect formation of the bile, inſufficient to ſtimulate the inteſtinal canal, which becomes torpid, and is ſometimes loaded with fœtid clay-coloured excrement." Pp. 45.—47.

We omit many other circumſtances, occurring in other diſeaſes, which might illuſtrate the influence of a morbid condition of the chylopoetic viſcera in producing coma, lethargy, apoplectic ſymptoms, affections of viſion, &c., as well as ſeveral ſtriking caſes mentioned by Dr. Cheyne. It appears, from what has been ſtated, in the higheſt degree probable, that hydrocephalus, when it makes its attack eſpecially in the firſt mode above related, frequently originates from the ſympathy of the brain with ſuch a morbid condition in the viſcera of the abdomen: and that the inſtances which Dr. Willan would ſeparate, as diſtinct from the moſt acute form, differ principally in the degree of mildneſs, or in being treated properly before the diſeaſe was too firmly eſtabliſhed. It may not be eaſy, indeed, to frame rules, to uſe the words of Dr. Cheyne, "by which we may decide, when the ſymptoms ariſe from the morbid ſympathy between the brain and a deranged ſtate of the liver or the inteſtines, or when they originate from the diſordered ſtate of the brain, unconnected with any diſtant organ. This inveſtigation is important, but not eaſily proſecuted: perhaps future obſervation may prove that we ſhall not be wrong to trace the diſeaſe to the organ *which firſt has its functions ſenſibly impaired;* in a great many caſes it has appeared to me that a ſeries of diſeaſed actions has commenced with the diſordered ſtate of the abdominal viſcera." Loc. cit. p. 50.

An *explanation of the ſymptoms*, then, may be thus given. The firſt ſtage of the diſeaſe is principally referable to increaſed arterial action in the brain, not yet, however, ſo great as to have produced any material change in its condition, which could be detected by diſſection, until near the approach of the ſecond ſtage. The patient is then feveriſh, averſe to light, ſick, diſturbed in his ſleep, fretful, and complaining of head-ache. When the pulſe is becoming irregularly ſlow, the inflammatory congeſtion is conſiderably increaſed, and the effuſion of water into the ventricles is probably beginning: and as the preſſure augments, the effects of it upon the root of the optic nerves, (or the *thalami nervorum opticorum*,) become obvious in the ſquinting and dilatation of the pupil, which laſt ariſes from the beginning inſenſibility of the retina, and the ſquint from the irregular influence of the nerves connected with the muſcles of the eye-balls. At the ſame time the lethargic diſpoſition, the cruel pains darting through the head, exciting ſcreams and ſtarting from ſleep, the ſlowneſs and irregularity of the pulſations of the heart and arteries, all denote the impeded functions of the brain from the increaſing congeſtion and preſſure within it. Then ſucceed complete blindneſs, often accompanied by convulſions or paralytic ſymptoms, as the diſeaſe approaches to its termination; after which we diſcover all the remains of great arterial action, adheſions of the membranes, great congeſtion, effuſion, and even obvious change of ſtructure; more particularly when the laſt-mentioned ſymptoms have been ſevere and of ſome duration. It is not very eaſy, as Dr. Whytt admits, to explain the origin of the extraordinary rapidity of pulſe which enſues towards the cloſe of the diſeaſe, ſince the third ſtage appears to be but a continuation and increaſe of the ſecond. Whether the ſickneſs, in the beginning, ariſes from the ſympathy of the ſtomach with the diſordered ſtate of the brain, or from the ſtate of the bilious ſecretion and of the bowels, is not clear, and probably it originates from one or the other in different circumſtances; but the vomiting in the more advanced ſtages of the diſorder is more naturally explained (according to Dr. Whytt) by the ſympathy of the ſtomach with the oppreſſed brain. The great torpor of the bowels, which ariſes in the firſt inſtance, probably from the ſcanty and imperfect formation of the bile, may be afterwards augmented by the diſordered condition of the brain and nerves.

The Diagnoſis.—Having ſtated the phenomena of hydrocephalus at conſiderable length, it will be unneceſſary to dwell minutely upon the peculiar diagnoſtic ſymptoms. It is of the utmoſt importance, however, that the nature of the diſeaſe ſhould be detected as early as poſſible; and it is not too much to ſay, with Dr. Cheyne, that the phyſician ſhould be ever on the watch for it, in attending to the diſorders of children, and ſhould never hear a little patient complain of head-ache, without inveſtigating the hiſtory of his health preceding this complaint, and comparing it with every ambiguous ſymptom. Loc. cit. p. 89. See alſo Dr. Quin's Treatiſe, p. 44.

The principal difficulty is to diſtinguiſh incipient hydrocephalus from the fevers, occaſioned by the irritation of dentition, or of worms in the inteſtines; or "the infantile remittent fever" of Dr. Butter Theſe fevers have ſeveral ſymptoms in common with hydrocephalus: but the commencement of hydrocephalus is generally more gradual; the diſorder of the ſtomach is more conſtant, eſpecially the frequent recurrence of vomiting; there is an averſion to light; the ſtools are dark, of a dirty green colour, and glairy; the pain of the head, when fixed, is oftener dull than acute, but ſo overpowering that it does not admit of the head being raiſed from the pillow; ſometimes it is a very acute pain; at intervals, and theſe ſometimes regular, it darts through the centre of the brain, and the child is rouſed with an expreſſion of helpleſs anguiſh from the dozing which precedes this acute pain, and into which he inſtantly relapſes when it is gone: the intermiſſions of the diſeaſe are very irregular. In children of ſome growth, a peculiar expreſſion occurs in hydrocephalus; the countenance has a ſort of ſtare of vacancy, with much appearance of anxiety, and great caution evinced in moving the head. In the remittent fever the affection of the head is commonly much leſs obvious; the remiſſions are generally regular and complete, there being one in the morning or early in the forenoon, followed by an exacerbation in the afternoon, which continues through the night; the ſtools are uſually dark-brown, or mud-like; a glairy dark-green diſcharge, however, has been ſometimes obſerved in this fever. All organic diſeaſes of the brain have a general reſemblance to hydrocephalus, and to each other, ſuch as ſcrofulous tumours, abſceſſes, caries of the bones, &c.; but the diſorder, in theſe caſes, is much more tedious than hydrocephalus. Cheyne.

The Prognoſis in hydrocephalus is always doubtful, and, on the whole, unfavourable, even in the firſt ſtage of the diſeaſe; in the ſecond ſtage it is extremely unfavourable; and in the third it is almoſt uniformly hopeleſs. Dr. Whytt conſidered it, indeed, as hopeleſs under all circumſtances, and acknowledged that he never ſaw a patient recover. But ſubſequent experience has taught us, that it ought not to be held an incurable diſeaſe: ſeveral inſtances of recovery are on record. Dr. Percival of Mancheſter, and Dr. Dobſon of Bath, both effected a cure in their own family, by timely attention to the diſeaſe; ſeveral examples are related in the periodical publications, (Lond. Med Journ. vol. iv. p. 82. vi. 113. i. 424.—See alſo Med. Obſ. and Inq. vol. iv. and vi. Edin. Med. Com. vol. vi. p. 220 and 224. viii. 325 and 332. ix. p. 240. x. 299, &c. and other journals,) and in the appendix to Dr. Cheyne's treatiſe. Dr. Willan mentions three caſes out of eight which terminated favourably, " two recovered about the eighteenth day of the diſorder, the third, an infant, at the end of the fifth week, after having been long abandoned to its fate." (Reports on the Diſ. in London, p. 269.) The chance of cure in general, however, is nearly in the inverſe proportion to the duration of the ſymptoms.

It has been obſerved by Dr. Cheyne, that a great increaſe of urine has often occurred when the diſeaſe has terminated in recovery; and that when the urine flows freely after giving mercury, it may be deemed a favourable prognoſtic. Occaſionally a copious diaphoreſis, eſpecially from the head, has alſo preceded recovery. In one caſe, after a child had been condemned as in a hopeleſs ſtate, and the phyſicians had diſcontinued their viſits, " a profuſe ſweat broke out on the head and neck, and flowed ſo copiouſly that the pillows had to be ſhifted one after another. From that moment the child is ſaid ſenſibly to have recovered, and yet lives. Seven years have elapſed ſince his recovery." P. 87, *note*. See alſo a caſe in the Edin. Med. Comment. vol. x. p. 299, and Dr. Quin's Treatiſe, p. 73.

Of the Cure.—In a diſeaſe which, from its very commencement, is of a moſt dangerous tendency, and when completely eſtabliſhed is commonly fatal, it is obvious that, in order to have any tolerable chance of ſucceſs, the treatment ſhould be entered upon early, in a deciſive manner, and purſued with ſteadineſs and vigour. The principal indications of cure appear to be, 1ſt, to diminiſh the inflammatory activity of the circulation in the brain; and, 2dly, to remove all irritations, eſpecially in the alimentary canal, and to correct the hepatic ſecretion or congeſtion, which, by morbid ſympathy, may have given riſe to, or may have aſſiſted in prolonging the diſeaſed action in the brain.

In the very early periods of the diſeaſe, indeed, our firſt attention ſhould be directed to the ſtate of the alimentary canal, and an active cathartic ſhould be given, and repeated according to circumſtances. Should we aſcertain that the canal is torpid, and imperfectly performing its functions, admitting an accumulation of feculent matter; or that the ſecretions flowing into it are vitiated or diminiſhed in quantity, (which we diſcover by the peculiarity in the appearance, or the pungent fœtor of the ſtools,) we muſt endeavour, by ſteadily purſuing the purgative plan, to effect a change: for while this is produced in the appearance of the ſtools, by the ſtimulating quality of the medicines, a moſt important change is effected in the hepatic ſyſtem, inteſtinal canal, and all the parts including every organ eſſential to life, which is by ſympathy connected with them. The purgative plan may be purſued without inducing debility; on the contrary, with evident acceſſion of ſtrength, ſo long as there is foulneſs of the bowels, either while the ſtools are fœtid and clay-coloured, or while they are dark and ſlimy. In the advanced ſtages, however, when the oily-looking, or glazed dark-green ſtools, almoſt peculiar to this diſeaſe, are evacuated, we cannot hope to effect a cure by purgatives. But in the earlier periods, ſhould little diſorder in the alimentary canal and biliary ſecretion be obſerved, if the ſtrength of the patient be unimpaired, and his conſtitution originally ſound, the exhibition of purgative medicines, perhaps every ſecond or third day, may be advantageous.

For theſe purpoſes preparations of mercury, and eſpecially calomel, appear to be the moſt ſuitable, as the firſt doſes of them ſeldom fail to ſtimulate the bowels. When this does not happen, and the purgative effect is not produced, ſome other medicine, as jalap, aloes, ſcammony, muſt be given in addition. Dr. Cheyne ſays, " purges have generally been given in this diſeaſe; but, when called early, what I recommend is, the exhibition of the largeſt doſe, which can with ſafety be preſcribed, of ſome powerfully cathartic medicine, two, three, or four times a day, and this continued for ſeveral days, or until natural ſtools are procured. The advantage of keeping the inteſtinal canal under the continued influence of a ſtimulus, I have, in various inſtances, found to be ſo great, that I am induced to repeat the declaration of my belief, that the happieſt reſult may be expected from this meaſure." P. 95.

It may be added, that ſhould the ſymptoms indicative of commencing hydrocephalus, prove to be in fact the ſymptoms of remitting fever, or to ariſe from worms in the inteſtines, this practice fortunately proves the moſt efficacious means of removing theſe diſeaſes. On the whole, therefore, the free adminiſtration of cathartics may be recommended, under all circumſtances, in the commencement of the diſeaſe.

In regard to the means of fulfilling the indication of reducing inflammatory action within the head, eſpecially by *blood-letting*, there has been ſome difference of opinion. Dr. Ruſh recommends general bleeding indiſcriminately, in the firſt ſtage of the phrenicula (as he denominates the diſeaſe), even to an extent greater than is requiſite in the more acute phrenitis, except in very young children. It has not appeared, however, that this practice is entitled to more credit, even in his hands, than other modes of treatment. Where the conſtitution is robuſt, and the attack is of the moſt acute form, general blood-letting may, doubtleſs, be reſorted to with great benefit, and is eſpecially ſerviceable, as Dr. Ruſh intimates, in preparing the way for the operation of mercury. In leſs active forms of the diſeaſe, however, and in delicate habits, and more particularly when it ariſes after the conſtitution has been exhauſted by preceding diſorders, local evacuations of blood by means of leeches, or cupping, ſhould be preferred; and the operation may be repeated, according to the urgency of the ſymptoms, the ſtate of the pulſe, and the general ſtrength of the patient. We agree with Dr. Cheyne in looking upon the inflammatory action in the brain as going on during the whole progreſs of the diſeaſe, and not ceaſing with the firſt ſtage of increaſed ſenſibility, or before the ſtage of torpor has begun; and, therefore, in conſidering local bleeding, as a proper expedient, when otherwiſe indicated, even to a late period of the diſeaſe. At the ſame time, the proſpect of deriving benefit from the practice is trifling, when much organic change has already occurred. Dr. Whytt mentions, as the only benefit he had ever obſerved from medicine, a temporary relief, in the *ſecond* ſtage of the diſeaſe, from the uſe of local evacuations; and probably almoſt every practitioner has witneſſed the ſame effect of them, even in this ſtage.

Bliſters applied over the whole ſcalp, or to the forehead, occiput, and ſides of the head, in ſucceſſion, may be conſidered as important *juvantia* in relieving the internal inflammatory action of the brain; eſpecially ſome evacuation of blood has been procured. They often afford obvious relief to the pain, and therefore ſhould not be omitted at any ſtage of the diſorder. Several inſtances of recovery from hydrocephalus are on record, in which the agency of bliſters appears to have conſtituted a very important part in the cure. (See Dr. Quin, loc. cit.) This intelligent phyſician generally applied a large bliſter over the whole head, and dreſſed it with an ointment of cantharides: Dr. Cheyne uſes the ſtrong mercurial ointment for that purpoſe.

With a view to leſſen the activity of the circulation, the uſe of *digitalis* has likewiſe been reſorted to, as well as for the purpoſe of increaſing the urinary diſcharge, and exciting abſorption of the effuſed fluids. Its qualities of diminiſhing the irritability, retarding the pulſe, and quickening the action of the abſorbents, ſeem to render it a medicine of great promiſe in fulfilling the indication now under conſideration, without endangering the conſtitution of a delicate child, in the ſame degree as blood-letting. In a few caſes it has been employed with apparent advantage. It is a medicine, however, of extreme uncertainty in its operation, and has not anſwered the expectations at firſt entertained of it in the cure of ſome other diſeaſes; it can only be uſed, with any probability of ſucceſs, when adminiſtered with activity, and it can only be given with ſafety in adequate doſes, when its operation is cautiouſly and unremittingly watched. Dr. Cheyne, who has well deſcribed the peculiarities of its operation, adds, "The method which I have for ſome time followed in uſing digitalis is the moſt obvious: it accords with the view which I have given of its powers, and does not appear ill adapted to the attainment of a ſafe and quick effect. I begin with a moderate doſe, eight or ten drops of the ſaturated tincture; and to every ſucceeding doſe, which is generally given at an interval of ſix hours, I add two or three drops; ſo that, in a day or two, generally ſome part of the ſyſtem is affected. I proceed with great caution, aſcertaining, while augmenting it, the effect of the medicine after each increaſed doſe." P. 103.

In aid of the means of diminiſhing inflammatory action in the brain, already mentioned, the *application of cold*, or, more correctly ſpeaking, the abſtraction of heat from the head, particularly in the more acute forms of hydrocephalus, may be reſorted to with advantage. Frequent waſhing of the face and neck with cold water, the application of linen cloths to the forehead wetted with cold vinegar or water, or with æther (which produces cold by its rapid evaporation), contribute much to relieve the pain in the head. In a caſe mentioned by Dr. Ruſh, a ſolution of ice in vinegar appeared to afford the moſt obvious relief of this diſtreſſing ſymptom. Med. Inq. vol. ii. p. 227.

Of thoſe individuals who have been known to recover from hydrocephalus, the greater number have taken mercury in one form or other; ſeveral of them to a very great extent, ſometimes with the effect of inducing ſalivation, often without that reſult. Drs. Dobſon and Percival firſt recommended and ſucceſsfully employed that practice, (ſee Edinburgh Med. Comment. vol. vi. pp. 220 and 224.) and it has been ſince employed by other practitioners, with a happy effect, in a number of inſtances. (See many of the references to cures above given.) It has, indeed, frequently diſappointed the hopes of the practitioner, even after ſalivation was induced; although, from the general difficulty of producing this diſcharge in patients labouring under hydrocephalus, it was at one time thought that the failure of mercury to accompliſh a cure, aroſe from its failure to excite ſalivation. The ſuperior ſucceſs of the practice has been ſuch, however, on the whole, that it will be admitted, with Dr. Cheyne, that "when the exiſtence of the diſeaſe becomes probable, there ought to be no other delay than that occaſioned by our endeavours to ſubdue the diſorder in the bowels, in commencing a *mercurial courſe*, which, it muſt be allowed, has cured hydrocephalus, even when far advanced." That intelligent phyſician adds, that "it ſhould give us more confidence in this remedy, that I have ſeveral times obſerved, when the mercurial ſtimulus was fully eſtabliſhed, that the ſymptoms were interrupted, and the termination of the diſeaſe, although fatal, unlike what we find in caſes where mercury has not been uſed. The convulſions were ſuſpended; the ſenſes, both external and internal, reſtored; the diſeaſe appeared to be checked; but the debility was ſuch, that the vital functions languiſhed; and the conſtitution had ſuſtained ſo great a ſhock, that every effort to invigorate them was unavailing." Cheyne, loc. cit. p. 99.

The plan purſued by Dr. Percival, and ſubſequently followed by others, conſiſted in giving repeated doſes of calomel internally, (ſuch as the quantity of two grains at intervals of a few hours,) and at the ſame time uſing the ſtrong mercurial ointment by friction upon the ſkin. It was ſuggeſted, that the ſalutary influence of the mercury was chiefly the operation of the calomel upon the alimentary canal and hepatic ſyſtem; but Dr. Percival and other practitioners conceived that the effects of the remedy were decidedly more obvious and ſalutary, when it was thus adminiſtered in a two-fold manner. We have been occaſionally ſurprized, indeed, by the prodigious quantity of calomel which has been taken by children, in this diſeaſe, within a ſhort ſpace of time, without producing any obvious effect whatever, either on the bowels, the ſalivary glands, or the ſyſtem at large. It is not eaſy to induce ſalivation in children under ordinary circumſtances; but in this diſeaſe there is a peculiar degree of torpor in the advanced ſtages, which renders the conſtitution much leſs ſuſceptible of the influence of medicine in the common doſes.

Much has been written reſpecting the beſt method of reſtoring the ſtrength of the patient after the decline of the diſeaſe. But in this, as in other inſtances of acute diſeaſe, when the great cauſe of irritation is removed, if there be any ſtrength left, the ſyſtem never fails to act with vigour, and requires little aſſiſtance from art. With the exception of a moderately nouriſhing diet, ſcarcely any thing is required to further the progreſs of convaleſcence.

In regard to the *prevention* of hydrocephalus, perhaps the moſt important precept relates to a conſtant attention to the ſtate of the bowels. "The mother muſt be taught," to adopt again the words of Dr. Cheyne, "to attend to and to underſtand every irregularity in the ſtate of her child's bowels. It is not merely coſtiveneſs which is to indicate the propriety of a purgative courſe: coſtiveneſs is not to be neglected; but conſtitutional coſtiveneſs may perhaps exiſt without danger. Attention muſt be paid to every deviation (not abſolutely temporary) from a natural appearance of the inteſtinal evacuation;" p. 108. (See DEJECTION.) The propriety of inſtituting a drain, by means of an iſſue or ſeton, in the neck, in the ſurviving children of families where the diſeaſe has already occurred, and in whom the marks of prediſpoſition are viſible, has been ſuggeſted and carried into execution, in ſome caſes, with apparent ſucceſs. In the family to which we formerly alluded, the laſt ſurviving child was ſuppoſed to be preſerved from the diſeaſe by the uſe of a ſeton in the neck: it may be remarked, however, that he has now, after attaining the adult age, become the ſubject of inſanity.

All the general means of ſupporting the general health in children prediſpoſed by conſtitution to hydrocephalus, ſuch as regular moderate exerciſe, the occaſional uſe of the cold bath, regularity in diet, &c. muſt be combined with the attention to the ſtate of the inteſtinal canal.

HYDROCERATOPHYLLON, in *Botany*. See CERATOPHYLLUM.

HYDROCHARIDES, a natural order of plants named from HYDROCHARIS, which is one of the genera; ſee the next article. This order is the 22d in Juſſieu's ſyſtem, or the 4th of his 4th claſs, *monocotyledones, ſtaminibus epigynis*. The character he gives is,

"Calyx of one leaf, ſuperior, undivided, or divided, the ſegments diſpoſed either in a ſimple or double row, the inner ones often petal-like. Stamens either definite or indefinite, ſituated upon the piſtil. Germen ſimple, inferior;

ſtyle either ſimple, or definitely manifold, or none; ſtigma ſimple or divided. Fruit inferior, of one or many cells. The plants are herbaceous aquatics."

As Juſſieu included the *Cyamus*, or *Nelumbo*, in this order, he was obliged to make an exception, on account of its ſuperior germen, but there having been ſcarcely any other reaſon for ſuch an arrangement than its being a water plant, the cotyledons being two, and the other characters as different from the *Hydrocharides* as can well be, this difficulty is removed, and *Cyamus* goes to the *Papaveraceæ*, with *Nymphæa*, and *Nuphar* of Smith in Prodr. Fl. Græc. Sibth. —The other genera in Juſſieu are *Valiſneria*, *Stratiotes*, *Hydrocharis*, *Trapa*, *Proſerpinaca*, and *Piſtia*, the three laſt very dubious at beſt as to their claim to a place here.

Mr. R. Brown, in his Prodromus Nov. Holl. v. 1. 345, reckons *Najas*, *Lemna*, and *Chara*, as akin to the natural order in queſtion.

HYDROCHÆRIS, in the Linnæan ſyſtem of *Zoology*, a ſpecies of hog found at Surinam. See CAVIA *Capybara*.

HYDROCHARIS, in *Botany*, from ὕδωρ, *water*, and χαίρειν, *to rejoice*, becauſe this genus, from its beauty, may be conſidered as the glory or pride of the water.—Linn. Gen. 527. Schreb. 695. Mart. Mill. Dict. v. 2. Sm. Fl. Brit. v. 3. 1084. Ait. Hort. Kew. v. 3. 409. Juſſ. 67. Lamarck Illuſtr. t. 820. (Stratiotes; Dill. Gen. 9.)—Claſs and order, *Diœcia Enneandria*. Nat. Ord. *Palmæ*, Linn. *Hydrocharides*, Juſſ.

Gen. Ch. Male, *Cal.* Spathe three-flowered, of two leaves, oblong; perianth of three ovate-oblong, concave leaves, membranaceous at the margin. *Cor.* Petals three, roundiſh, flat, large. *Stam.* Filaments nine, awl-ſhaped, erect, arranged in three rows, of which the middle row puts forth an awl-ſhaped ſtem, from its inner baſe, like a ſtyle, which is placed in the centre; the two other rows are ſo connected at the baſe, that each inner filament coheres with the outer; anthers ſimple. *Piſt.* none, except the above rudiment of a germen. Female, *Cal.* Spathe none; flowers ſolitary; perianth as in the male, ſuperior. *Cor.* as in the male flowers. *Piſt.* Germen roundiſh, inferior; ſtyles ſix, as long as the calyx, compreſſed, bifid, channelled; ſtigmas bifid, pointed. *Peric.* Capſule leathery, roundiſh, ſix-celled. *Seeds* numerous, very ſmall, roundiſh.

Eſſ. Ch. Male, Calyx three-cleft. Petals three. The three interior filaments beaked. Female, Calyx three-cleft. Petals three. Styles ſix. Capſule inferior, with ſix cells, and many ſeeds.

Obſ. This genus is very nearly allied to *Stratiotes*.

1. H. *Morſus Ranæ*. Common Frog-bit.—Linn. Sp. Pl. 1466. Engl. Bot. t. 808. Curt. Lond. faſc. 3. t 64. (Morſus Ranæ; Ger. Em. 818.)—Found on the ſurface of ditches and ſlow ſtreams, plentifully in the neighbourhood of London, flowering in July and Auguſt. This perennial aquatic, every part of which is ſmooth, floats on the ſurface, throwing out from its joints cluſters of leaves and flowers. *Roots* ſtraight and ſimple, deſcending into the mud. *Leaves* on footſtalks, kidney-ſhaped, entire, generally purple beneath. The female ſtalks are quite ſimple, ſingle-flowered, having a ſpathe at the baſe; males umbellated, three or four-flowered, with a pair of bracteas at the baſe of the partial flower-ſtalks. *Flowers* white, elegant, and ſhowy, with large, roundiſh, corrugate petals, yellow at the baſe.—"Ray mentions a variety with fragrant double flowers, which Mr. Relham informs us is not now to be found in the place he indicates. Flowers with ſix petals now and then occur. Engl. Bot.

HYDROCHOOS, in *Aſtronomy*, derived from ὕδωρ, *water*, and χέω, *I pour*. See AQUARIUS.

HYDROCORAX, in *Ornithology*. See HORN-*bill*.

HYDROCOTYLE, in *Botany*, from ὕδωρ, *water*, and κοτυλη, *a cavity* which forms a ſort of cup, becauſe the leaves of the original ſpecies are round and concave, and it grows in watery places. This name was beſtowed by Tournefort. Its Engliſh appellation is Pennywort, or White-Rot.—Linn. Gen. 127. Schreb. 178. Willd. Sp. Pl. 1360. Mart. Mill. Dict. v. 2. Sm. Fl. Brit. v. 1. 290. Ait. Hort. v. 1. 327. Juſſ. 226. Tournef. t. 173. Lamarck Dict. v. 3. 151. Illuſtr. t. 188. Gærtn. t. 22.—Claſs and order, *Pentandria Digynia*. Nat. Ord. *Umbellatæ*, Linn. *Umbelliferæ*, Juſſ.

Gen. Ch. *Cal.* Umbel generally ſimple; involucrum moſt commonly of four leaves, ſmall; perianth ſcarcely any. *Cor. Univerſal*, uniform in figure, not in ſituation; all the flowers fertile; *partial*, of five ovate, acute, ſpreading, entire petals. *Stam.* Filaments five, awl-ſhaped, ſhorter than the corolla; anthers very minute. *Piſt.* Germen erect, compreſſed, circular, inferior, peltate; ſtyles two, awl-ſhaped, very ſhort; ſtigmas ſimple. *Peric.* none; fruit orbiculate, compreſſed, tranſverſely diviſible into two parts. *Seeds* two, ſemi-circular, compreſſed.

Eſſ. Ch. Umbel ſimple. Involucrum of about four leaves. Petals undivided. Fruit orbiculate, compreſſed.

Linnæus originally reckoned only five ſpecies of *Hydrocotyle*; profeſſor Martyn enumerates fifteen, and Willdenow eighteen, from the Supplementum and other books. The author of Engliſh Botany obſerves that "the name of White-rot was given to *H. vulgaris*, from a ſuppoſition that this plant cauſed the diſeaſe in ſheep called the rot; but it is doubtful if they will ever taſte it, and moſt people now attribute that diſeaſe to the animals inhabiting wet paſtures, where indeed the *Hydrocotyle* grows, but which are in ſome other way noxious to their conſtitution."

1. *H. vulgaris*. Marſh Pennywort. White-rot. Linn. Sp. Pl. 338. Engl. Bot. t. 751. Curt. Lond. faſc. 6. t. 19.—"Leaves peltate. Umbels of five flowers."—Found on marſhes, and in moiſt places that are ſubject to be inundated, flowering throughout the months of May and June. —*Root* perennial. *Stems* creeping, thread-ſhaped. *Leaves* oppoſite, on foot-ſtalks, peltate, horizontal, roundiſh, crenate, pale green, ſmooth, clear. *Flower-ſtalks* axillary, ſolitary, or twin, having a pair of bracteas at their baſe. *Umbel* ſmall, denſe, generally five-flowered, often producing another umbel from its centre. *Flowers* white or bluſh-coloured, with acute petals.

The leaf of this plant is uſually referred to as a perfect ſpecimen of what Linnæus intended for a *peltate* leaf. The common Naſturtium of our gardens, *Tropæolum majus*, is however a more familiar and an equally correct inſtance.

2. *H. inundatum*. Floating White-rot. Sm. Fl. Brit. v. 1. 290. (Siſon inundatum; Linn. Sp. Pl. 363. Engl. Bot. t. 227.)—"Leaves pinnate, jagged; thoſe which are immerſed, in capillary ſegments. Umbels in pairs, each conſiſting of five flowers."—Not very unfrequent in ditches and pools among other aquatics, flowering in May.—*Root* moſt probably biennial. *Stems* creeping, floating, round. *Leaves* alternate, on dilated ſtalks which embrace the ſtem, unequally pinnate; leaflets oblong, trifid, often pinnatifid. *Flower-ſtalks* oppoſite to the leaves, bifid, divaricated. *Umbels* ſolitary, five-flowered. *Flowers* white, having acute, equal petals. *Fruit* elliptical, ſtriated.

This ſpecies of *Hydrocotyle* is referred hither from *Siſon* ſolely on the authority of the *Flora Britannica*. This and the preceding are the only ſpecies indigenous to Great Britain.

3. *H. umbellata*. Linn. Sp. Pl. 338. Swartz Obſ. 111. —

—Leaves peltate, umbels many-flowered.—Native of damp places in America, and particularly in Jamaica.—This ſpecies is very nearly allied to *H. vulgaris*, but differs in having the flower-ſtalk twice as long as the leaves, and inſtead of five flowers, more than twenty crowded together ſo as to form a ſimple umbel.

4. *H. bonarienſis.* Willd. n. 3. Lamarck Dict. v. 3. 153.—" Leaves ſomewhat peltate, kidney-ſhaped or roundiſh, crenate. Umbel compound; rays branched, flowering at the top and ſides."—Found by Commerſon on the ſea-ſhore of Buenos Ayres near Monte Video.—The *whole plant* is ſmooth. *Branches* trailing on the ground, a foot or more in length. *Leaves* on foot-ſtalks, crenulated, or obſcurely lobed, having a ſort of arch-work from the baſe to the centre. *Foot-ſtalk* inſerted cloſe to the ſummit of this arch, ſo as to make the leaves umbilical or imperfectly peltate. *Flowers* yellowiſh.

5. *H. americana.* Linn. Sp. Pl. 338. Lœfl. it. 281.—" Leaves kidney-ſhaped, ſomewhat lobed, crenate."—A native both of North and South America.—Similar in appearance and magnitude to *H. vulgaris,* but it differs in having its *leaves* ſeparated half way down by a narrow ſinus, their margin divided into nine obſolete lobes, each of which is marked by three ſmaller crenulations. *Umbel* five-flowered.—A variety of this, much ſmaller in all its parts, appears in the Linnæan herbarium communicated by M. Cuſſon.

6. *H. hirſuta.* Willd. n. 5. Swartz. Ind. Occ. v. 1. 560. Hairy.—Leaves kidney-ſhaped, lobed, crenate. Whorls four-flowered.—Native of St. Domingo, flowering in June and July.—*Stem* herbaceous, creeping. *Leaves* on foot-ſtalks, obtuſely five or ſeven-lobed, nervoſe, veined. *Stipulas* ſmall, at the baſe of the footſtalks. *Flowers* whorled, greeniſh, each one furniſhed with a linear, obtuſe, hairy leaflet not longer than the germen. The whole plant is thickly covered with whitiſh hairs.

7. *H. moſchata.* Willd. n. 6. Forſt. Prod. n. 135.—Leaves kidney-ſhaped, ſeven-lobed, ſerrated, villoſe. Umbels many-flowered.—This is a native of New Zealand. We know nothing of it but from the authorities above quoted.

8. *H. aſiatica.* Linn. Sp. Pl. 338. (Ranunculo affinis; Pluk. Alm. 314. t. 106. f. 5.)—" Leaves kidney-ſhaped, equally toothed or crenate."—Native of the Eaſt Indies and Cape of Good Hope, flowering in July. It was introduced into this country by Mr. F. Maſſon in 1774.—This ſpecies is nearly allied to *H. americana,* but differs in having the denticulations of its leaves equal or regular; the *leaves* are twice as thick, and almoſt hoary, with many footſtalks from the joints of the ſtem, whilſt in *H. americana* the leaves are ſolitary.

9. *H. chinenſis.* Linn. Sp. Pl. 339.—" Leaves linear, umbels many-flowered."—Native of North America, not of China.—*Stem* creeping. *Leaves* linear, ſmooth, obtuſe, flat, often in pairs at the joints of the ſtem. *Scapus* the length of the leaf. *Umbel* many-flowered.—We are not acquainted with any figure of this ſpecies.

10. *H. erecta.* Willd. n. 8. Linn. Suppl. 177.—" Leaves heart-ſhaped, crenate. Stalk with few flowers, the length of the leaf-ſtalks.—Native of Jamaica.—*Leaves* obtuſe, acutely dentated, an inch long; footſtalks radical, a ſpan long, hairy at the top. *Scapi* radical, with a few flowers at their ſummit, erect, as is the whole plant, not creeping.

11. *H. villoſa.* Willd. Sp. Pl. n. 9. Linn. Suppl. 175.—" Leaves heart-ſhaped, entire, downy or villoſe."—A native of the Cape of Good Hope.—*Root* fibrous. *Stems* proſtrate, bearing leaves and flowers at their ſummits. *Leaves* on foot-ſtalks, undivided, reſembling *Viola odorata.* *Flower-ſtalks* many, from the top of the ſtems, filiform, ſhorter than the leaves, ſingle-flowered. *Flowers* ſmall.

12. *H. glabrata.* Willd. Sp. Pl. n. 10. Linn. Suppl. 176.—Leaves obovate or lanceolate, acute, three-nerved, very ſmooth."—Found at the Cape of Good Hope.—*Whole plant* extremely ſmooth. *Stem* angulated, rigid, geniculated; *leaves* growing at the joints, and both leaves and flowers towards the ſummit of the ſtem.

13. *H. Spananthe.* Willd. Sp. Pl. n. 11. (Spananthe paniculata; Jacq. Ic. Rar. v. 2. t. 350.)—Stem erect. Leaves triangular, pointed, ſerrated, bearded at their baſe.—Native of South America.—Referred to this genus by Willdenow, of which we doubt the propriety. It has a tall branching *ſtem*, and proliferous *umbels*.

14. *H. ranunculoides.* Willd. n. 12. Linn. Suppl. 177. Leaves cut into five deep ſegments. Umbels ſimple.—Sent by Mutis from Mexico.—*Stem* creeping, jointed, fibrous. *Leaves* ſolitary, or in pairs, very ſimilar to thoſe of a *ranunculus*; the ſegments three-lobed, obtuſe; foot-ſtalks about three inches long. *Flower-ſtalk* an inch in length. *Umbel* ſimple. *Petals* white.

15. *H. ſaniculæfolia.* Willd. n. 13. Lamarck Dict. v. 3. 154. Illuſtr. t. 188. f. 1.—Leaves three or five-lobed, toothed. Umbel compound.—Gathered by Commerſon at Buenos Ayres, and on his authority referred by Willdenow to this genus.

16. *H. ſolandra.* Willd. n. 14. Linn. Suppl. 176. Lamarck Illuſtr. t. 188. f. 5. (Solandra capenſis; excluſis ſynonymis; Linn. Sp. Pl. 1407.)—Leaves wedge-ſhaped, ovate, retuſe.—Sent from the Cape of Good Hope.—*Root* branching on the ſurface of the ground. *Whole plant* covered with whitiſh downyneſs. *Leaves* alternate, wedge-ſhaped or obovate, ſeven-toothed. *Flower-ſtalks* amongſt the lower leaves, lateral. *Receptacle* of the flowers dark purple. *Petals* white.

17. *H. tridentata.* Willd. n. 15. Linn. Suppl. 176.—Leaves linear-wedge-ſhaped, three-toothed at the top.—Found by Sparrmann at the Cape of Good Hope.—Very ſimilar in habit to the preceding ſpecies, but differs in having the *ſtems* ſhorter, woolly, and not proſtrate. *Leaves* with three equal teeth at their top. *Flower-ſtalks* much ſhorter than the leaf.

18. *H. linifolia.* Willd. n. 17. Linn. Suppl. 176.—Leaves linear-lanceolate, hirſute, entire.—A native alſo of the Cape of Good Hope, and very nearly akin to the following ſpecies.

19. *H. virgata.* Willd. n. 18. Linn. Suppl. 176. Thunb. Prod. 49. Lamarck Illuſtr. t. 188. f. 3.—Leaves linear, ſmooth.—Communicated to Linnæus by Thunberg, from the Cape of Good Hope.—*Stem* upright, jointed, nearly ſmooth. *Leaves* channelled withinſide, dilated at their baſe. *Umbels* lateral, ſimple.

HYDRODES Febris, in *Medicine*, a fever in which the patient is, from the beginning, afflicted with very copious and weakening ſweats, and great weakneſs.

HYDRODYNAMICS, of ὕδωρ, *water*, and δυναμις, *force*, is uſed for the ſcience of the laws of the motion of fluids, and denotes much the ſame with hydraulics. See Fluid and Hydraulics.

HYDROENTEROCE'LE See Hydrénterocéle.

HYDROGEN, Hydrogenous Gas, or *Inflammable Air*, is an elaſtic fluid of extreme ſubtilty and levity. It is aſcertained to be nearly $\frac{1}{12}$th of the weight of an equal bulk of common air, or only $\frac{1}{10000}$dth of the weight of an equal bulk of water, being by much the lighteſt ponderable ſubſtance with which we are acquainted. It is, on this account, that balloons are filled with it. The weight of a cubic foot of hydrogen gas, at the common temperature and preſſure, is not more than $2\frac{1}{2}$ grains; whereas the ſame volume of common air weighs 31 grains. It is not only in the elaſtic ſtate that hydrogenous gas exhibits extreme levity, but alſo the ultimate particle of it, according to the inveſtigations of Mr. Dalton, is lighter than that of any other body, on which account he makes it the unit or ſtandard of compariſon in weight. See GAS.

Hydrogenous gas may be procured by various proceſſes; the moſt ſimple and eaſy one is to take ſome turnings or filings of zinc or iron, and put them into a gas bottle, to which add their weight of water, and about $\frac{1}{5}$th of its volume of concentrated ſulphuric acid. A violent efferveſcence enſues, and the gas is generated in great abundance, and may be received over water in the uſual way. The rationale of the proceſs ſeems this; the metals have a ſtrong affinity for oxygen, but not equally ſo for hydrogen; they are not of themſelves ſufficiently powerful to effect an union with the oxygen and a detachment of the hydrogen, but by the aid of the acid they can accompliſh it, and the acid afterwards unites with the new compound or oxyd, forming a ſalt, called a *ſulphate*. Hence the hydrogen is derived from the water. Another method of obtaining hydrogen is to ſend ſteam over red-hot iron ſhavings in a gun-barrel; in this caſe, the iron unites with the oxygen, and the hydrogen is liberated in the gaſeous form.

The properties of hydrogen gas are, 1ſt. *It is the lighteſt of all gaſes*, as has been obſerved, and may be proved, by actually weighing it in an air-bottle fitted up for ſuch purpoſes, which has previouſly been exhauſted and weighed. But there are ſeveral ſimple experiments by which it may be ſhewn to be much lighter than common air; namely, if a jar be filled with hydrogen, and then uncovered for a moment, the hydrogen will eſcape, but not if the jar be placed with its mouth downwards, as will be proved by putting a lighted taper into the jar, which will not be affected in the former caſe, but extinguiſhed with a ſlight exploſion in the latter. If, inſtead of a jar, a tube of 12 inches long and $\frac{1}{4}$ inch diameter be filled with hydrogen, it will be five minutes in loſing one-half of its gas, and that the ſame whether held up or down. (See Nicholſon's Journal, vol. viii. p. 148.) This ſerves to ſhew that the effect of a difference in ſpecific gravity is not perceived unleſs a ſufficiently large volume or body of air can move together. If bubbles of ſoap and water be raiſed with hydrogen they aſcend in the air like balloons. If a volume of hydrogen be gently placed *over* a volume of common air, they do not mix immediately, but in due time they are found mixed completely, whatever caution may be uſed to prevent agitation, and they remain mixed ever afterwards. (See Mancheſter Mem. vol. i. ſecond Series, p. 262, and Memoires d'Arcueil, tom. ii. p. 466. This curious fact, which is of a general nature, and by no means peculiar to hydrogen and common air, was firſt obſerved by Prieſtley, and is aſcribed by Dalton to the mechaniſm of elaſtic fluids; but moſt others have thought it an effect of chemical affinity. 2d. *Hydrogen gas is fatal to animals*, as is proved by confining a mouſe or other ſmall animal in it for a few moments. 3d. *It is inflammable.* This quality is ſhewn by applying a taper to a phial of the gas with its mouth downwards; a ſlight exploſion will be obſerved ſucceeded by a lambent flame. If a bladder be filled with the gas, and then the gas be gently driven out through a ſmall tube, ſuch as a tobacco-pipe, it will take fire with a candle and burn with a reddiſh flame. A mixture of one part hydrogen and two common air, or two hydrogen and one oxygen, in a ſmall phial, explodes violently by being preſented to a flame. The ſame effect may be produced by an electric ſpark in a glaſs veſſel, called an inflammable air-piſtol; or a ſtrong braſs tube, called Volta's eudiometer, may be partly filled with a mixture of hydrogen and oxygen, and the mixture exploded over water or mercury by electricity. In this way the quantity of hydrogen or oxygen in mixtures of gaſes may be aſcertained. (See EUDIOMETRY.) If a bladder, filled with hydrogen and common air, or oxygen, in the proportions above-mentioned, have its contents infuſed into bubbles of ſoap and water, they will explode with a loud report by a taper, and the bladder itſelf will burſt with a tremendous report if the flame be applied to it or to the bubbles before they quit the pipe of the bladder. 4th. *Hydrogen gas, though inflammable itſelf, yet extinguiſhes flame.* If a jar of hydrogen be put over the flame of a candle, ſo as to ſurround it, the flame is inſtantly extinguiſhed. 5th. A mixture of oxygen and hydrogen has been made to explode by mechanical condenſation, by M. Biot. 6th. In the ſlow combuſtion of hydrogen, when the flame is confined in a long tube, under certain circumſtances, a muſical ſound is produced. 7th. Hydrogen, when united to oxygen, produces water; when it is united to azote the product is ammonia; when united to carbon it forms olefiant gas, carburetted hydrogen, oil, &c. 8th. It contains half as many atoms in the ſame volume as oxygen gas.

HYDROGEN, *Sulphuretted*, in *Chemiſtry*, a compound of ſulphur and hydrogen, which uſually owes its origin to the decompoſition of water in the proceſſes by which it is formed, and is generated in various proceſſes, in which its elements are preſented to each other in a naſcent or condenſed ſtate. It was firſt procured from ſolutions in water of the compounds of ſulphur with the fixed alkalies. When ſulphur is combined with potaſh, ſoda, or lime, on diſſolving the compound in water, a partial decompoſition takes place; one part of the ſulphur combines with part of the oxygen of the water, forming ſulphuric acid, which unites with the potaſh; another part of the ſulphur unites with the hydrogen of the water, forming ſulphuretted hydrogen. This gas is produced likewiſe by expoſing to a ſtrong heat mixtures of ſulphur with vegetable matter, as ſugar, oil, or powdered charcoal; the hydrogen exiſting in vegetable ſubſtances combining with the ſulphur; in theſe proceſſes the gas is, very rarely, quite pure, or of an uniform compoſition. The ſpecific gravity of ſulphuretted hydrogen is to that of atmoſpheric air, as about 1.14 to 1.00, a hundred cubical inches weighing 33 grains. Its ſmell is extremely fœtid; the effluvia diſengaged in putrefaction conſiſt chiefly of this gas. Its properties are, that it extinguiſhes combuſtion, and is wholly incapable of ſupporting animal life. It is abſorbed by water, the water taking up more than its volume, or 100 cubical inches of water will abſorb 108 inches of this gas. It has a peculiar action on the metals, and tarniſhes them very quickly, communicating ſhades of yellow, brown, or purple, with a diminution of metallic luſtre. This curious gas is poſſeſſed of the properties of an acid, enters into combination with the alkalies, and forms compounds, ſome of which are cryſtallizable. It is capable of changing vegetable colours to a red. It decompoſes ſoap, combines with the metallic oxyds, and precipitates ſulphur from its combinations. The compounds of ſulphuretted hydrogen with the fixed alkalies, are readily formed by paſſing a current of it in its elaſtic ſtate through the alkaline ſolution. Theſe compounds are called HYDROSULPHURETS, which ſee. Sulphuretted hydrogen is capable of combining with an additional proportion of ſulphur, and in this ſtate the compound is denominated ſuper-ſulphuretted hydrogen. "The knowledge," ſays Mr. Murray, "which we have acquired of ſulphuretted hydrogen, and of its combinations, has thrown light on the compoſition of mineral ſulphureous waters, and of the changes which they ſuffer. As ſulphur is itſelf inſoluble in water, and as frequently no traces of an alkali, by which it might be rendered ſoluble, could be diſcovered in theſe waters, chemiſts found it difficult to conjecture by what means its ſolution was effected. The diſcovery of ſulphuretted hydrogen, and of its ſolubility in water, ſolved this difficulty, and the mutual action exerted between it and oxygen, elucidates the changes theſe waters ſuffer from expoſure to the air." Murray's Chemiſtry, vol. 2. See MINERAL *waters*.

HYDROGEN, *Super-ſulphuretted.* See HYDRO-SULPHURETS.

HYDROGEN *Gas*, in *Agriculture*, the modern name of an elaſtic fluid, formerly denominated inflammable air. Its effects on vegetation have not yet been aſcertained.

HYDROGETON, in *Botany*, from ὕδωρ, *water*, and γείτων, *a neighbour*, from the circumſtance of its being an aquatic plant. Such is the name given by Loureiro, which is of a rather extenſive application, but juſtifiable by the analogy of *Potamogeton*, which it evidently imitates.—Loureir. Cochinch. v. 1. 244.—Claſs and order, *Octandria Tetragynia*. Nat. Ord. *Inundatæ*, Linn. *Naiades*, Juſſ.

Gen. Ch. *Cal.* Perianth none. *Cor.* inferior, petals four, roundiſh, inflexed, furniſhed with a ſlender, ſhort, incurved claw. *Stam.* Filaments none; anthers eight, ovate, affixed to the receptacle. *Piſt.* Germens four, ovate, ſtyle none; ſtigmas four, oblong, erect. *Peric.* Capſules four, ovate, ſingle-ſeeded. *Seeds* of a ſimilar ſhape.

Eſſ. Ch. Calyx none. Corolla of four roundiſh petals, each furniſhed with a claw. Capſules four. Seeds ſolitary.

1. *H. heterophyllum.* Loureir. Cochinch.—"Lower leaves awl-ſhaped, or linear, upper ones ovate, pointed."—Native of rivers and marſhes in Cochinchina. *Stem* procumbent, long, branching, immerſed in the water. *Leaves* entire, ſmooth. *Flowers* green, ſmall, in oblong, arched, terminal, naked ſpikes.

Loureiro obſerves that he ſeparated the preſent genus from *Potamogeton* chiefly on account of the number of its ſtamens. Whether this diſtinction be ſufficient to eſtabliſh his genus, we greatly doubt, or rather, we think it quite inadequate. The Cochinchineſe name of the plant is *Raong hai thú lá*.

HYDROGRAPHICAL MAPS, more uſually called *ſea charts*, are projections of ſome part of the ſea, in plano, for the uſe of navigation.

In theſe are laid down all the rhumbs, or points, of the compaſs, the meridians, parallels, &c. with the coaſts, capes, iſlands, rocks, ſhoals, ſhallows, &c. in their proper places, proportions, &c.

Chriſtopher Columbus, the firſt great diſcoverer of America, was a man that earned his living by making and ſelling hydrographical maps. He happened to be heir to the memoirs or journals of a noted pilot, one Alonzo Sanchez de Huelva, captain of a ſhip, who, by chance, had been driven by a ſtorm to the iſland of St. Domingo, and died at Columbus's houſe ſoon after his return. This gave Columbus the firſt hint to attempt a diſcovery of the Weſt Indies, in which he ſucceeded.

For the conſtruction of the ſeveral kinds of hydrographical maps, ſee CHART.

For their uſes, ſee SAILING.

HYDROGRAPHY, compounded of ὕδωρ, *aqua*, *water*, and γράφω, *I deſcribe*, that part of geography which conſiders the ſea; principally, as it is navigable.

Hydrography teaches how to deſcribe and meaſure the ſea; it gives an account of its tides, counter tides, currents, ſoundings, bays, gulfs, &c. as alſo of its rocks, ſhelves, ſands, ſhallows, promontories, harbours, diſtances, &c. from port to port; with all that is remarkable, either out at ſea, or on the coaſt.

Some of the beſt authors uſe the term in a more extenſive ſenſe; ſo as to denote the ſame with *navigation*.

In this ſenſe hydrography includes the doctrine of ſailing; the art of making ſea charts, with the uſes thereof; and every thing neceſſary to be known, in order to the ſafeſt and moſt expeditious performance of a voyage. See SAILING.

Hydrography is the moſt perfect of all the mathematical ſciences; there being ſcarcely any thing wanting to its perfection, but the accurate diſcovery of the longitude.

The Jeſuits Ricciolus, Fournier, and De Chales, have written on the ſubject of hydrography.

In France they have profeſſors of hydrography eſtabliſhed in all their ſea-ports, who are to inſtruct the youth intended for the ſea in all the parts of navigation, ſailing, ſteering, &c. with the ſeveral branches of mathematics neceſſary thereto; as arithmetic, and the doctrine of the ſphere, and trigonometry.

They are royal profeſſors, and teach gratis; having ſalaries allowed them. They are alſo charged with the examination of pilots, &c.

HYDROLEA, in *Botany*, was ſo named by Lœfling, though we are unable to trace its derivation.—Lœfl. It. 310. Linn. Gen. 124. Schreb. 173. Willd. Sp. Pl. v. 1. 1327. Mart. Mill. Dict. v. 2. Juſſ. 134. Lamarck. Illuſtr. t. 184. Gærtn. t. 55.—(Coutarde; Lamarck. Dict. v. 2. 161.)—Claſs and order, *Pentandria Digynia*. Nat. Ord. *Convolvuli*, Juſſ.

Gen. Ch. *Cal.* Perianth of five, awl-ſhaped, erect, unequal, permanent leaves. *Cor.* of one petal, wheel-ſhaped or campanulate; tube ſhorter than the calyx; limb ſpreading, divided into five, ovate, incumbent, obtuſe ſegments. *Stam.* Filaments five, awl-ſhaped, incurved, heart-ſhaped at the baſe; anthers oblong, curved, incumbent. *Piſt.* Germen ſuperior, ovate: ſtyles two or three, thread-ſhaped, ſpreading; ſtigmas truncated. *Peric.* Capſule ovate, two-valved, two-celled, with a parallel partition. *Seeds* numerous, very ſmall, imbricated; receptacle ovate, large.

Eſſ. Ch. Calyx of five leaves. Corolla wheel-ſhaped. Filaments heart-ſhaped at the baſe. Capſule of two cells and two valves.

Obſ. Aublet has remarked that in ſome flowers the calyx and corolla are ſix-cleft, with ſix ſtamens.

1. *H. ſpinoſa.* Linn. Sp. Pl. 328. Aubl. Guian. 281. t. 110.—Leaves lanceolate, hairy. Flowers cluſtered, terminal.—Native of South America, particularly in moiſt ſituations at Guiana and Cayenne, flowering at various times of the year.—The whole *ſhrub* is extremely bitter, having a fibrous *root*, from which ariſe one or more *ſtems* about three feet high, ſtraight, branched, woody, overſpread with a viſcous downyneſs. *Leaves* alternate, nearly ſeſſile, lanceolate, entire, downy, clammy. *Spines* axillary, awl-ſhaped, ſtraight, ſpreading. *Flowers* corymboſe, of a blue colour, each one furniſhed with a ſort of leafy ſcale at the baſe.

2. *H. inermis.* Loureir. Cochinch. 172. Mart. Mill. Dict. v. 2.—Stem ſpineleſs. Flowers ſolitary, lateral.—Found in moiſt places about Canton. *Stem* herbaceous, annual. *Leaves* lanceolate-linear, ſmooth, ſeſſile, ſcattered. *Flowers* blue. Loureiro obſerves that he could not diſtinguiſh whether or not the filaments were cordate at their baſe.

3. *H. trigyna.* Willd. n. 2. Swartz. Ind. Occ. v. 1. 558.—

Leaves oblong, hairy. Flowers with three ſtyles, axillary. Found by Dr. Houſton near Vera Cruz. *Shrub* armed with ſpines, hairy. *Leaves* alternate, ſometimes approaching to nearly oppoſite, oblong, rather acute, entire. *Spines* ſolitary, half an inch long, ſpreading. *Flowers* blue, axillary, generally ſolitary, on ſtalks.

4. *H. zeylanica.* Willd. n. 3. Vahl. Symb. p. 2. 46. (Nama; Linn. Fl. Zeylan. 117. t. 2. N. zeylanica; Sp. Pl. 327. Steris javana; Mant. 54.)—Leaves lanceolate, ſmooth. Flowers with two ſtyles, ſomewhat cluſtered.—Native of the Eaſt Indies.—*Stem* herbaceous, about ſix inches high, erect, branched. *Leaves* alternate, on footſtalks, ſmooth, entire, ſpreading. *Cluſters* ſimple, erect, the length of the leaves. *Flowers* alternate, as long as the partial ſtalks.

HYDROLOGY, compounded of ὑδωρ, *water*, and λογος, *ſcience*, denotes that part of natural hiſtory which examines and explains the nature and properties of water in general. See Water.

HYDROMANCY, Ὑδρομαντεια, compoſed of ὑδωρ, *water*, and μαντεια, *divination*, the act, or art, of divining, or foretelling future events, by means of water.

Hydromancy is one of the four general kinds of divination (ſee Divination): the other three reſpecting the other elements, *viz.* fire, air, and earth, are denominated pyromancy, aeromancy, and geomancy.

Varro mentions the Perſians as the firſt inventors of hydromancy, adding, that Numa Pompilius, and Pythagoras, made uſe of it.

This ſpecies of divination was performed in various ways: ſometimes they uſed invocations and magic ceremonies, in conſequence of which they diſcovered the names of certain perſons, or events, which they wiſhed to know upon the water: ſometimes they ſuſpended a ring by a thread over a veſſel full of water, and ſtruck the ſides of the veſſel with it a certain number of times; they alſo formed preſages by caſting ſmall ſtones into ſtill water, and obſerving the circles hereby formed on the ſurface of the water; by examining the various agitations of the waves of the ſea; by obſerving the colour of the water, and the figures repreſented in it, &c. &c. See an account in Delrio Diſquiſ. Magic. lib. iv. queſt. 6. ſect. 3.

The writers in optics furniſh us with divers hydromantic machines, veſſels, &c.

To conſtruct an hydromantic machine, by means whereof an image, or object, ſhall be removed out of the ſight of the ſpectator, and reſtored again, at pleaſure, without altering the poſition, either of the one or the other. Provide two veſſels, A B F, C G L K (*Plate* VIII. *Hydraulics*, *fig.* 4.); the uppermoſt filled with water, and ſuſtained by three little pillars, one whereof, B C, is hollow, and furniſhed with a cock B. Let the lower veſſel C L be divided by a partition H I into two parts; the lower of which may be opened, or cloſed, by means of a cock at P.

Upon the partition place an image, which the ſpectator in O cannot ſee, by a direct ray G L.

If now the cock B be opened, the water deſcending into the cavity C I, the ray G L will be refracted from the perpendicular G R to O; ſo that the ſpectator will now ſee the object by the refracted ray O G. And again ſhutting the cock B, and opening the other P, the water will deſcend into the lower cavity H L; whence the refraction ceaſing, no rays will now come from the object to the eye: but ſhutting the cock P again, and opening the other B, the water will fill the cavity again, and bring the object in ſight of O afreſh.

To make an hydromantic veſſel, which ſhall exhibit the images of external objects, as if ſwimming in water. Provide a cylindrical veſſel A B C D (*Plate* VIII. *Hydraulics*, *fig.* 5.) divided into two cavities by a glaſs E F, not perfectly poliſhed: in G apply a lens convex on both ſides; and in H incline a plain mirror, of an elliptic figure, under an angle of 45°; and let I H and H G be ſomething leſs than the diſtance of the focus of the lens G: ſo that the place of the images of an object radiating through the ſame may fall within the cavity of the upper veſſel: let the inner cavity be blackened, and the upper filled with clear water.

If, now, the veſſel be diſpoſed in a dark place, ſo that the lens be turned towards an object illuminated by the ſun, its image will be ſeen as ſwimming in the water.

HYDROMEL, Ὑδρομελι, compoſed of ὑδωρ, *water*, and μελι, *honey*, a drink made of water and honey, nearly in equal quantities; called alſo by the Greeks, μελιηπαρον.

When this liquor has not fermented, it is called *ſimple* hydromel; and *compound* when other ingredients are added to the water and honey, in order to improve and exalt the flavour and virtues.

When it has undergone the ſpirituous fermentation, it is called the *vinous* hydromel, or mead and metheglin. To induce this fermentation, nothing is neceſſary but to dilute the honey ſufficiently in water, and to expoſe the liquor to a convenient degree of heat.

Hydromel is the common drink of the Poles and Ruſſians. Diodorus Siculus, lib. v. and Ariſtotle, relate, that the Celtiberi, and Taulantii, ancient people of Illyria, drank hydromel inſtead of wine.

HYDROMELON, a name given by the ancients to a liquor prepared with one part of honey, impregnated with the juice of quinces, and two parts of boiled water, ſet in the ſun during the dog-days.

HYDROMETER, compound of ὑδωρ, *water*, and μετρον, *meaſure*, an inſtrument wherewith to meaſure the gravity, denſity, velocity, force, or other properties of water.

The extenſive uſe of the knowledge of the ſpecific gravities of bodies has produced a variety of contrivances, under the name of *Eſſay Inſtrument*, *Hydrometer*, *Areometer*, *Gravimeter*, *Peſe-liqueur* or *Water-poiſe*, for the purpoſe of aſcertaining the ſpecific gravities of different bodies, both ſolid and fluid, in an expeditious manner.

From Lowthorp's abridgment of the Philoſophical Tranſactions, vol. i. p. 516, &c. or Boyle's Works, 4to. London ed. 1772. vol. iv. p. 204, &c., it appears, that the hydrometer was firſt invented by Boyle, and deſcribed under the name of a New Eſſay Inſtrument. It conſiſted of a ball, ſomewhat leſs than an hen's egg, with a graduated ſtem, four or five inches in length, ſoldered to the upper part, and by means of a ſtirrup or ſlit piece of braſs underneath, it was applied, as perfectly as a graduated inſtrument could be, to aſcertain the ſpecific gravities of ſolids as well as fluids. To extend the uſe of the inſtrument, Boyle propoſes that the ball ſhould be made large, and provided with an appendage for occaſionally changing the quantity of ballaſt applied beneath the ball. (See Aræometer.) Boyle's inſtrument was intended to be uſed in water, and, conſequently, the graduations of its ſtem denoted certain invariable weights. But when the hydrometer is to be uſed in various fluids, it diminiſhes the accuracy of the reſults, if thoſe ſpaces be taken for abſolute weights; or, at all events, it brings forward a rather intricate conſideration of the relation which the bulks of the ſpaces, or parts of the ſtem, have to the whole immerſed part. Hence Fahrenheit firſt applied a diſh, or ſcale, for weights at the top, in order to aſcertain the ſpecific gravities of fluids truly, and his inſtrument had only a ſingle mark, that, in all caſes, was to be brought to the ſurface of the fluid, by means of weights added in the above-mentioned ſcale; as may be ſeen in Reid and Grey's abridgment of the Phil. Tranſ. vol. vi. pt. 1. p. 294.

The general principle on which the conſtruction and uſe of the hydrometer depends, has been illuſtrated under the article *ſpecific* Gravity: for it has there been ſhewn, that a body ſpecifically lighter than ſeveral fluids will ſerve to find out their ſpecific gravities; becauſe it will ſink deepeſt in the fluid whoſe ſpecific gravity is the leaſt, or, that a greater addition of weight is required to keep the ſame part of the floating body below the ſurface of a heavier than of a lighter fluid.

Thus, let A B, (*Plate* IX. *Hydraulics*, *fig.* 1.) be a ſmall even glaſs tube, hermetically ſealed, having a ſcale of equal diviſions marked upon it, with a hollow ball of about an inch in diameter at bottom, and a ſmaller ball C under it, communicating with the firſt. Into the little ball put mercury or ſmall ſhot, before the tube be ſealed, ſo that it may ſink in water below the ball, and ſtand upright, the diviſions on the ſtem ſhewing how far it ſinks. If this inſtrument be dipped in common water and ſink to D, it will ſink only to E in ſalt water; but in port wine it will ſink to F, and in brandy under proof, it will perhaps ſink to B. It is evident that an hydrometer of this kind will only ſhew that one liquid is ſpecifically heavier than another; but the true ſpecific weight of any liquid cannot be determined without a calculation for this particular inſtrument, the tube of which ſhould be truly cylindric, and not tapering as they commonly are. Beſides, theſe inſtruments will not ſerve for fluids, whoſe denſities are conſiderably different. With a view of remedying theſe and ſome other inconveniences, Mr. Clark, in the year 1730, ſeemingly unapprized of what had been done before by Boyle and Fahrenheit, conſtructed a new hydrometer, for the uſe of dealers in brandy and ſpirits, that they might be able to determine, by inſpection, whether any ſpirituous liquor be proof, above proof, or under proof, and exactly in what degrees. This inſtrument is made of copper, becauſe ivory imbibes ſpirituous liquors, and glaſs is apt to break. It conſiſts of a braſs wire about one-fourth of an inch thick, paſſing through and ſoldered into the copper ball B *b*, (ſee *fig.* 2.) The upper part of the wire is filed flat on one ſide of the ſtem of the hydrometer, and marked at *m*, to which diviſion it exactly ſinks in proof-ſpirits. There are two other marks A and B; the one ſhewing that the liquor is one-tenth above proof, when this inſtrument ſinks to A, and the other indicating one-tenth under proof when it emerges to B; a braſs weight, as C, having been previouſly ſcrewed on to the bottom at *c*. There is a great variety of weights of different ſizes, as K, &c. adapted to liquors that differ more than one-tenth from proof, and for determining the ſpecific gravities of all ſuch liquors as occur in trade, as well as for ſhewing the ſpecific gravities of all fluids quite to common water. The round part of the wire above the ball may be marked acroſs, as in *fig.* 3, ſo that with the weight as C, which fits the inſtrument for the trial of river water, in which it ſinks to R W, it may ſerve for wines or other waters: thus in ſpring water it will ſink to S P; in mineral water to M I; in ſea-water to S E; and in the water of ſalt ſprings to S A: and the marks *br*, *ra*, *po*, *me*, denote the diviſions to which the inſtrument deſcends in Briſtol water, rain water, Port wine, and Mountain wine, reſpectively. Phil. Tranſ. abr. vol. vi. p. 326, &c.

This hydrometer, ſays Mr. W. Nicholſon, (ubi infra), is inferior to Fahrenheit's in two reſpects. In the firſt place, either a bubble of air, or a portion of the fluid, will be hid in that part of the cavity of the ballaſt weight, which is not filled by the ſcrew; and it is of very different conſequence, which of the two is there. And ſecondly, the weights acting on the inſtrument, by their reſidual gravity, will not be conſtant; or, in other words, an additional weight will be accompanied by an addition to the bulk of the immerſed part of the inſtrument; and in the caſe where the ſpecific gravity of the liquid is not given, but required, it will not be eaſy to determine how much the operation of the one is counteracted by that of the other. However, though this laſt conſideration evinces that the inſtrument is not fit for general uſe, yet it is accurate for the trial of ardent ſpirit, or any other particular liquid, when the weights are adjuſted by experiment to the intended uſe.

Dr. Deſaguliers contrived an hydrometer, for determining the ſpecific gravities of different waters to ſuch a degree of nicety, that it would ſhew when one kind of water was but one forty thouſandth part heavier than another. This inſtrument (ſee *fig.* 4.) conſiſts of C B *b*, a hollow glaſs ball of about three inches in diameter, with a ſmall ball under it of about an inch in diameter. To a ſhort neck at C there is fixed a braſs head, with a fine ſcrew, into which the piece C *c* is to be ſcrewed; and this piece is joined to a wire C A, about one-fortieth part of an inch in diameter, and ten inches long, which is divided into inches, and tenths of inches. Having put a certain quantity of ſmall ſhot into the ball *b*, ſo that when the head C *c* with its wire C A is ſcrewed on, it ſhall ſink as far as D, *e. g.* five inches, in river or ſoft ſpring water, we may know by obſerving how far this hydrometer ſinks lower in one kind of water than another, their different ſpecific gravity to a forty thouſandth part, which correſponds with one-tenth of an inch marked on the ſtem A C. For let the hydrometer float in water in the jar I K L M, and the ſurface of the water cut the ſtem at D, a grain weight laid on the ſtem at A will cauſe the inſtrument to ſink, till the mark D of the ſtem ſettles one inch under the ſurface; and, therefore, a grain depreſſes it an inch. The hydrometer weighs four thouſand grains, and every inch of the graduated wire weighs ten grains; and, therefore, the part of it D C B *b c* D muſt weigh three thouſand nine hundred and fifty grains. But it is known, from the principles of ſpecific gravity, that a bulk of water equal to D C B *b c* D the immerſed part, weighs juſt as much as the whole hydrometer, or four thouſand grains: and, therefore, this inſtrument ſerves to compare together the different bulks of four thouſand grains of water, according to their different ſpecific gravities: and ſince the whole inſtrument is ſunk an inch by the weight of one grain, and the inſtrument will ſtand at one-tenth of an inch, the difference indicated by it in waters in which it floats, it is evident that it will diſtinguiſh the tenth of a grain in four thouſand, or the forty thouſandth part of the whole bulk of water. By altering the quantity of ſhot in the ball *b*, the inſtrument may be prepared for the compariſon of any other two liquors that are nearly of the ſame ſpecific gravity. Deſaguliers, &c. vol. ii. p. 234.

This inſtrument is capable of ſtill greater exactneſs, by making the ſtem of a flat thin ſlip of braſs or of ſteel, by which means we increaſe the ſurface without diminiſhing the ſolidity: on one ſide of this ſtem may be ſeveral marks denoting the depths to which the inſtrument would ſink in various ſorts of water, as rain water, river water, &c. and on the other ſide may be the diviſions to which it would ſink in lighter fluids, as hot Bath water, Briſtol water, Port wine, &c. but in determining the ſtrength of ſpirituous liquors, a cylindric ſtem is beſt.

Dr. G. Fordyce conſtructed an inſtrument, which is the moſt perfect we poſſeſs, its weights being adjuſted to the different ſpecific gravities of ſpirits by experiments made at numerous varieties of ſtrength and temperature.

Mr. Quin's hydrometer has been recommended by many diſtillers, &c. on account of its accuracy, which requires only eighteen weights uſed on the top of the inſtrument, to ſhew all the under and over proofs to the certainty of one pint in a hundred gallons, from proof to ſeventy gallons to one hundred over proof, and to fifty gallons in a hundred under proof, which would require nine hundred and ſixty-eight weights, beſides forty-five air weights, according to the old conſtruction of Clark's hydrometers. The weights are numbered 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 30, 40, 50, 100, 200, 300, 600, grains. He has alſo formed a table ſhewing the degrees of the thermometer, and the number of grains correſponding with each degree; the number of grains required for each ſtrength; the over proofs, or the quantity of water neceſſary to reduce one hundred gallons of ſpirit to proof, with the former manner of expreſſing the ſeveral preparations, as one to two, one to three, &c. and likewiſe the under proofs.

There is one circumſtance, which deſerves particular attention in the conſtruction and graduation of hydrometers for determining the preciſe ſtrength of different brandies, and other ſpirituous liquors. M. Reaumur, in making his ſpirit thermometers, diſcovered, that when rectified ſpirit and water, or phlegm, the other conſtituent part of brandy, are mixed together, there appears to be a mutual penetration of the two liquors, and not merely juxtapoſition of parts; ſo that a part of the one fluid ſeems to be received into the pores of the other; thus, *e g.* if a pint of rectified ſpirit be added to a pint of water, the mixture will be ſenſibly leſs than a quart. The variations hereby produced in the bulk of the mixed fluid render the hydrometer, when graduated in the uſual way, by equal diviſions, an erroneous meaſure of its ſtrength; becauſe the ſpecific gravity of the compound is found not to correſpond to the mean gravity of the two ingredients. M. Montigny conſtructed a ſcale for this inſtrument in the manner before ſuggeſted by Dr. Lewis, on actual obſervation of the ſinking or riſing of the hydrometer in various mixtures of alcohol and water, made in certain known proportions. Hiſt. de l'Acad. Roy. Sciences, &c. Paris, for 1768. Memoire iv. Neumann's Chem. by Lewis, p. 450, note *r.* See *Specific* GRAVITY.

M. De Luc has publiſhed a ſcheme of the conſtruction of a comparable hydrometer, ſo that a workman, after having conſtructed one after his principles, may make all others ſimilar to each other, and capable of indicating the ſame degree on the ſcale, when immerſed in the ſame liquor of the ſame temperature.

For this purpoſe he propoſes to uſe an hydrometer of the common conſtruction, ſuch as is repreſented in *fig.* 5. made of flint glaſs; becauſe glaſs is a ſubſtance which undergoes the leaſt change of bulk by heat, and its changes are the moſt regular. The ball *a* ſhould be one and a half inch in diameter, with which ſhould communicate a ſmall hollow cylinder *b*, containing ſuch a quantity of quickſilver for a ballaſt, that the inſtrument may ſink nearly to the top in the moſt ſpirituous liquor, made as hot as poſſible. To the ball *a* is cemented a thin braſs tube ſilvered over, or a ſilver tube *c c*, made perfectly cylindrical, by drawing it through a hole. This tube, or *branch*, as he calls it, ſhould be long enough to admit the immerſion of a ſmall part of it in the leſs ſpirituous liquors, *e. g.* wine reduced to congelation. In order to determine a ſtandard for the conſtruction of the ſcale of this inſtrument, he forms a weak ſpirit of wine, by mixing one part of water with ſix parts of ſuch ſpirits of wine as fire gun-powder, or linen ſteeped in them. He alſo finds the ſpecific gravity of the mixture, at the temperature of fifty-four and a half of Fahrenheit's thermometer, by a nice hydroſtatical balance. Having dipped the hydrometer into this ſpirit of wine, at the fixed temperature, he marks upon its branch or ſtem with a thread, the point to which it ſinks; then preparing a ſort of brandy ſtronger than the common, by mixing three parts of water with ſeven parts of this ſame ſpirit of wine, he determines the point on the ſtem to which the inſtrument would ſink in it at the ſame temperature, and marks it with a thread. Theſe points, *viz.* 45 and 15 in the figure, are the fixed points of the hydrometer. The interval between them may be divided into thirty equal parts, each of which will repreſent one-thirtieth part of the total effect of the ſuperadded water, on the ſpecific gravity of the liquor. This fundamental interval in inſtruments for common uſe may be divided into fifteen parts, which will then be double degrees. In order to find a convenient place for the 0 of this ſcale, M. De Luc propoſes to reduce one of the wines of which brandy is commonly made, to the temperature of water in ice, and dipping the hydrometer in it, to obſerve how much higher it will ſtand than the inferior fixed point. This exceſs of emerſion, compared with the fundamental ſcale, and reduced to the neareſt number of degrees, which will be an aliquot part of it, will be a proportional quantity invariably fixed, to be added to the ſcale below the inferior fixed point, for determining the place of 0; *e. g.* let this exceſs of emerſion be about 15°, or half the fundamental ſcale; then one ſhould conſtantly add half the fundamental diſtance below the inferior fixed point, and thence begin to count the degrees: ſo that 0 would be at the bottom of the whole ſcale, the inferior fixed point would be at 15°, the ſuperior at 45°, and the ſcale could be prolonged at the top as much as may be neceſſary for the eſſays of the moſt ſpirituous liquors. Another ſcale may be applied on the oppoſite ſide of the ſtem, for trying merely the ſpecific gravity of the liquids in which the hydrometer may be dipped. The particular fixed points of this ſcale, *e. g. d, d,* may be taken in any two liquids, whoſe ſpecific gravities, tried by the hydroſtatic balance, ſhall have a convenient relation, and the ſpace between thoſe two points will be divided into a convenient number of equal parts. For the correction on account of the differences of heat, M. De Luc would take a liquor of mean ſpirituoſity, *e. g.* a mixture of one part of water, and ſeven parts of the ſpirits of wine determined by the hydroſtatic balance; reduce this liquor to the temperature of 45 of Fahrenheit; plunge into it the hydrometer already graduated, and obſerve the point to which it ſinks; he propoſes afterwards to heat the liquor to 69°, and then to obſerve the ſinking of the inſtrument. From this obſervation a table might eaſily be formed, in which we might expreſs in degrees of the hydrometer, the effects of the differences of heat correſponding to each degree of the thermometer, beginning from a fixed point: or, a particular ſcale might be prepared for experiments of this nature, by changing the number of degrees contained between the fixed points, in order to eſtabliſh an eaſy proportion between them and the degrees of the aerometer; and thus the correction might be made without tables. If an hydrometer of this kind were brought into general uſe, the police of the places in which the trade of ſpirituous liquors is carried on might take cognizance of it; and keep the public ſtandard of the hydrometer or aerometer, as they keep the ſtandard of weights and meaſures. Phil. Tranſ. vol. lxviii. part 1. art. 20. p. 500, &c. M. Le Roi has alſo publiſhed a propoſal for conſtructing comparable hydrometers. Hiſt. de l'Acad. des Scien. Paris, for 1770. Mem. 7.

Mr. William Nicholſon ſome years ago made an attempt to combine Boyle's and Fahrenheit's inſtruments, and thus to adapt the hydrometer to the general purpoſe of finding the ſpecific gravity, both of ſolids and fluids. A (*fig.* 6.) is a hollow ball of copper; B is a diſh affixed to the ball by a ſhort ſlender ſtem D; C is another diſh affixed to the oppoſite ſide of the ball by a kind of ſtirrup. In the inſtrument actually made by the inventor, the ſtem D is of hardened ſteel, $\frac{1}{40}$th of an inch in diameter, and the diſh C is ſo heavy as in all caſes to keep the ſtem vertical, when the inſtrument is made to float in any liquid. The parts are ſo adjuſted, that the addition of 1000 grains in the upper diſh B, will juſt ſink it in diſtilled water, at the temperature of 60° of Fahrenheit's thermometer, ſo that the ſurface ſhall interſect the middle of the ſtem D. Let it be required to find the ſpecific gravity of any fluid. Immerſe the inſtrument in it, and by placing weights in the diſh B cauſe it to float, ſo that the middle of its ſtem D ſhall be cut by the ſurface of the fluid. Then, as the known weight of the inſtrument, added to 1000 grains, is to the ſame known weight added to the weights uſed in producing the laſt equilibrium, ſo is the weight of a quantity of diſtilled water diſplaced by the floating inſtrument to the weight of an equal bulk of the fluid under conſideration. And theſe weights give the ratio of the ſpecific gravities. (See *Specific* GRAVITY.) Again, let it be required to find the ſpecific gravity of a ſolid body leſs than 1000 grains. Place the inſtrument in diſtilled water, and put the body in the diſh B. Make the adjuſtment of ſinking the inſtrument to the middle of the ſtem, by adding weights in the ſame diſh. Take thoſe weights from 1000 grains, and the remainder will be the weight of the body. Place now the body in the lower diſh C, and add more weight in the upper diſh B, till the adjuſtment is again obtained. The weight laſt added will be the loſs the ſolid ſuſtains by immerſion, and is the weight of an equal bulk of water. Conſequently the ſpecific gravity of the ſolid compared with water is as its weight to the loſs it ſuſtains by immerſion. (See *Specific* GRAVITY.) When the inſtrument has been once adjuſted in diſtilled water, common water may be afterwards uſed. Now the ratio of the ſpecific gravity of the water made uſe of to that of diſtilled water being known $(= \frac{b}{a})$, and the ratio of the ſpecific gravity of the ſolid to the water made uſe of being alſo known, $(= \frac{c}{b})$, the ratio of the ſpecific gravity of the ſolid to that of diſtilled water will be compounded of both, (that is, $\frac{cb}{ab}$.) This inſtrument has been found to be ſufficiently accurate to give weights true to leſs than one-twentieth of a grain. Mancheſter Memoirs, vol. ii. p. 386, &c. Nicholſon's Introd. to Nat. Phil. vol. ii.

The hydrometer of Mr. Nicholſon is highly commended by citizen Guyton in the deſcription which he has given of a gravimeter, or inſtrument for meaſuring the ſpecific gravity of ſolids and fluids, read to the National Inſtitute at Paris, and inſerted in the 21ſt volume of the Annales de Chemie. At preſent, he ſays, it is very much uſed; and gives, with conſiderable accuracy, the ratio of the ſpecific gravity to the fifth decimal, water being taken as unity. It is ſuſceptible of correction for the variations of temperature, and the impurity of the water which it is ſometimes more convenient to uſe. It does not appear that any better inſtrument need be wiſhed for in this reſpect. But this inſtrument, having hitherto been conſtructed in metal only, could not be applied either to ſalts or acids. M. Guyton, in order to remedy this and ſome other inconveniences to which hydrometers are ſubject, has propoſed, by following the principles of Fahrenheit, and executing the inſtrument of Nicholſon in glaſs, with a ſlight addition, to render it more generally uſeful and commodious, without diminiſhing its accuracy in any reſpect. To his inſtrument he has applied the name of gravimeter. It is made of glaſs, of a cylindric form, as being that which requires the ſmalleſt quantity of the fluid. Like the inſtrument of Nicholſon it carries two baſons; the one ſuperior, at the extremity of a thin ſtem, towards the middle of which the fixed point of immerſion is marked. The other lower baſon terminates in a point; it contains the ballaſt, and is attached to the cylinder by two branches. The moveable ſuſpenſion, by means of a hook, has the inconvenience of ſhortening the lever which is to ſecure the vertical poſition. The cylinder is 22 millimeters (0.71 inches) in diameter, and 21 centimeters (6.85) inches in length. It carries in the upper baſon an additional conſtant weight of five grammes. Guyton has added a piece which he calls the diver (plongeur), becauſe it is in fact placed in the lower baſon when uſed, and conſequently is entirely immerſed in the fluid. This is a bulb of glaſs, loaded with a ſufficient quantity of mercury, in order that its total weight may be equal to the conſtant additional weight, added to the weight of the volume of water diſplaced by this piece. The weight, being determined at the ſame temperature at which the inſtrument was originally adjuſted, will ſink to the ſame mark on the ſtem, whether it be loaded with a conſtant additional weight in the upper baſon, or whether the effect of this weight be produced by the additional piece (plongeur) in the lower diſh. In uſing this inſtrument for ſolids, it differs in no reſpect from the hydrometer of Nicholſon. The only condition being, like that in his, that the abſolute weight of the body to be examined ſhould be rather leſs than the conſtant additional weight, which in this inſtrument is five grammes (115 grains.) For liquids of leſs ſpecific gravity than water, the inſtrument, without the above additional weight, weighs about two decagrammes (459 grains) in the dimenſions before laid down. We have therefore the range of one-fifth of buoyancy, and conſequently the means of aſcertaining all the intermediate denſities from water to the moſt highly rectified ſpirit of wine, which is known to bear in this reſpect the ratio of eight to ten with regard to water. When liquids of greater ſpecific gravity than water are to be tried, the conſtant weight being applied below, by means of the additional piece (plongeur), which weighs about ſix grammes (138 grains), the inſtrument can receive in the upper baſon more than four times the uſual additional weight, without loſing the equilibrium of its vertical poſition. In this ſtate it is capable of ſhewing the ſpecific gravity of the moſt concentrated acids. It poſſeſſes another property in common with the inſtrument of Nicholſon, *viz.* that it may be uſed as a balance to determine the abſolute weight of ſuch bodies as do not exceed its additional load. And, laſtly, the purity of the water being know, it will indicate the degrees of rarefaction and condenſation in proportion to its own bulk. This inſtrument is rendered portable by means of a caſe, in which all the delicate parts are ſecured from preſſure, and the heavier parts ſo ſupported as to reſiſt the exceſs of motion which they are capable of acquiring in conſequence of their maſs. For a further account of this inſtrument, illuſtrated by figures, the manner of uſing it, and its application to the reſults of tables of ſpecific gravity, we refer to Nicholſon's Journal, vol. i.

HYDROMETRA, in *Medicine*, from ὕδωρ, *water*, and μήτρα, *metra*, *the womb*, ſignifies a dropſy of the womb.

If ſuch a diſeaſe as dropſy of the womb, or a collection of water in its cavity, independent of pregnancy, ever occurs, it is at leaſt a very rare diſeaſe, and its ſymptoms are not eaſily detected. Dr. Cullen, however, has given ſuch a diſeaſe a place in his ſyſtem of noſology, although he has made no mention of it in his Firſt Lines. (Noſol. Method. Gen. lxxx.) Boerhaave mentions it in his 1224th aphoriſm; but the commentary of Van Swieten ſeems to relate principally to larger collections than uſual of the fluids in the gravid uterus. Sauvages ſpeaks of a ſimple dropſy of the cavity of the uterus on the authority of Aſtruc (Hydrometra aſcitica, ſp. 1.), and includes the ovarial dropſy under the ſame genus, as well as the formation of hydatids in the uterus (H. hydatica), which, however, is altogether diſtinct from the true dropſy. (Noſol. Method. Claſs x. Gen 13.) See Dropsy and Hydatid.

HYDROMETRIA, Hydrometry, the menſuration of water, and other fluid bodies, their gravity, force, velocity, quantity, &c.

Hydrometria includes both hydroſtatics and hydraulics.

The term is modern, but very little in uſe. The firſt inſtance where we meet with it, is in the year 1694, when a new chair, or profeſſorſhip of hydrometry was founded in the univerſity of Bologna, in favour of S. Guglielmini, who had carried the doctrine of running waters, with reſpect to rivers, canals, dykes, bridges, &c. to an unuſual length.

HYDROMPHALON, in *Surgery*, a dropſical ſwelling of the navel. The word is compounded of ὕδωρ, *water*, and ὀμφαλος, *the navel.* See Dropsy.

HYDROMYSTES, or Hydromista, compounded of ὕδωρ, *water*, and μυστης, *a perſon ſet apart for the offices of religion*, a name anciently given to certain officers in the Greek church, whoſe buſineſs was to make the holy water, and ſprinkle it on the people.

HYDROPARASTATÆ, or Hydroparastæ, formed of ὕδωρ, *water*, and παριστημι, *I preſent*, in *Eccleſiaſtical Hiſtory*, a ſect of heretics, the followers of Tatian; called alſo Encratitæ, Apotactitæ, Saccophori, Severiani, and Aquarians.

The hydroparaſtatæ were a branch of Manichees, whoſe diſtinguiſhing tenet was, that water ſhould be uſed in the euchariſt inſtead of wine.

HYDROPELTIS, in *Botany*, from ὕδωρ, *water*, and πελτη, *a ſhield*, as being an aquatic plant with peltate leaves. Michaux. Boreal.-Amer. v. 1. 323. Sims in Curt. Mag. 1147.—Claſs and order, *Polyandria Polygynia.* Nat. Ord. *Multiſiliquæ*, Linn. *Ranunculaceæ*, Juſſ.

Gen. Ch. *Cal.* none. *Cor.* Petals ſix, oblong, permanent, ſomewhat ſpreading; the three outermoſt ſhorteſt, and externally reſembling a calyx. *Stam.* Filaments numerous, about 36, inſerted into the receptacle, thread-ſhaped, much ſhorter than the corolla; anthers vertical, erect, oblong, obtuſe. *Piſt.* Germens ſeveral, about 12 or 16, ſuperior, erect, oblong, acute, each ſeſſile on a mammillary point of the receptacle; ſtyles ſhort, thread-ſhaped, incurved; ſtigmas obtuſe. *Peric.* Capſules ſeveral, incloſed in the permanent corolla which exceeds them in length, erect, oblong-ovate, pointed, ſomewhat fleſhy, of one cell, not burſting. *Seeds* one or two, ſomewhat globoſe, inſerted at the ſuture on the inner edge of the capſule.

Eſſ. Ch. Calyx none. Petals ſix, permanent; three of them external and ſhorteſt. Nectaries none. Capſules ſeveral, ſuperior, with one cell and two ſeeds.

Obſ. The ſeed is deſcribed by Mr. Konig as monocotyledonous, if ſo it cannot belong to the *Ranunculaceæ.* Aquatic plants in general require reconſideration in this reſpect, ſome of them, as we have obſerved, having been judged monocotyledonous by analogy only, and few properly inveſtigated. The late Dr. Solander had made a genus of this plant which he referred to the Linnæan natural order of *Multiſiliquæ*, and called *Ixodia*, from ιξωδης, *viſcid*, very aptly alluding to the extremely viſcid coating of the young ſhoots and buds, which is inſoluble in water; but the name given by Michaux being printed, and liable to no exception, is properly retained by Dr. Sims.

The only known ſpecies is

1. H. *purpurea.* Michaux. Boreal.-Amer. v. 1. 324. t. 29. Curt. Mag. t. 1147.—Native of lakes and ſtill pools in North America, from Upper Canada to South Carolina. It was communicated to Dr. Sims from the late collection of E. J. Woodford, eſq. at Springwell, Herts. The *ſtems* are long, floating, round, and leafy. *Leaves* alternate, ſtalked, floating, orbicular, entire, peltate, with many veins radiating from their centre, and branched towards the margin. *Flower-ſtalks* from the ſide of the leaf-ſtalks, ſimple, ſingle-flowered. *Flowers* dull purple, cloſing and lying down on the ſurface of the water at night, and expanding again in the morning, like thoſe of *Nymphæa alba*, as obſerved by Mr. S. Edwards while making his drawing for the Botanical Magazine.

HYDROPHACE. See Lemna.

HYDROPHANES, in *Mineralogy*, ſome varieties of opal which appear to have loſt the water which they naturally contain, from expoſure to the air, and in conſequence of this have become opaque, recover their tranſparency when immerſed in water; theſe have been named hydrophanes. See Opal.

HYDROPHILUS, in *Entomology*, a genus of the aquatic kind of coleoptera, nearly allied in appearance and manners of life to the dytiſci; its generical diſtinction conſiſts in having the antennæ clavated, and the club perfoliated; the feelers four and filiform; and the poſterior legs formed for ſwimming, with the inner edge in general ciliated and armed with ſmall claws.

Linnæus has not very accurately diſcriminated the difference between the dytiſci and the hydrophili, both which he confounds under the comprehenſive term dytiſcus, excepting only that he divides this genus into two ſections, one having clavated and perfoliated antennæ (as in hydrophilus) and the other antennæ of a ſetaceous ſtructure. His generic character is conſequently adapted to include both thoſe ſections, and is for this reaſon rather curiouſly, and ſomewhat too looſely defined; the antennæ of the dytiſcus, ſays Linnæus, are either ſetaceous, or increaſe in ſize towards the end, and have a perfoliated capitulum or head; the hind feet hairy, formed for ſwimming, and armed with ſmall claws. (Ord. et Gen.) And again in Syſt. Nat. "Antennæ ſetaceæ *aut* clavato-perfoliatæ; pedes poſtici villoſi, natatorii ſubmutici." In the tenth edition of Syſt. Nat. Linnæus however divides the dytiſci into three ſections inſtead of two, as **Antennis perfoliatis*, ***Antennis ſetaceis*, and ****Antennis clavatis.* Ray had long before his time called this tribe of water beetles by the ſignificant term of hydrocantharus.

The dytiſcus genus, as eſtabliſhed by Linnæus, is ſeparated by Geoffroy into two genera, dytiſcus and hydrophilus, the latter of which, according to this author, contains thoſe with perfoliated antennæ (which he obſerves are ſhorter than the feelers); the reſt, having the antennæ filiform, (and longer than the head,) he retains under the name aſſigned to them by Linnæus. Schæffer admits the two laſt-mentioned genera with ſome amendment; the tarſi of the dytiſcus, he remarks, have five joints, the body oblong, and the head obtuſe. The mouth of the hydrophilus, according to this author, is armed with jaws, and has four palpi or feelers, two of which are longer and two ſhorter than the antennæ.

In the Gmelinian edition of "Syſtema Naturæ," the two genera hydrophilus and dytiſcus are adopted nearly in the manner of the writers laſt-mentioned, except that, according to Fabricius, he adds that the hydrophili have only four feelers, the dytiſci ſix. Lamarck again obſerves of the "hydrophile" (hydrophilus), that the antennæ are ſhort, with a perfoliated club; feelers four and unequal, the anterior ones longer than the antennæ. The "dytique," (dytiſcus,) he adds, has filiform-ſetaceous antennæ of the ſame length as the corſelet (thorax); ſix unequal feelers; and ſimple jaws ciliated within. The body in both, he ſays, is elliptic; in hydrophilus the ſternum is ſpinous; and the four poſterior legs formed for ſwimming, in dytiſcus only the two behind. Mr. Marſham notices the trifid ſtructure of the antennæ in the hydrophili, the inſerted poſition of the head, the oval convex form of the body, and the ciliations obſervable on the poſterior legs in moſt ſpecies, "Antennæ clava perfoliata, trifida, palpis breviores; caput inſertum; thorax tranſverſus; corpus ovale, convexum; pedes poſtici in pleriſque ciliati." Ent. Brit. And theſe he divides into two families, the one having the thorax ſmooth, the other longitudinally rugoſe.

The hydrophili either as a genus (hydrophile), or a family (hydrophiliens), containing ſeveral diſtinct genera, appear to have been long ſince admitted among the French writers. Walcknær, in his "Faune Pariſienne," has the genera ſpercheus (from Fabricius) and alſo hydrachna, in addition to hydrophilus and dytiſcus, all which belong, according to moſt other writers, to one of the two genera laſt-mentioned. In deſcribing the hydrophilus, he notices the cleft on the jaw, and the texture as well as form of the lip, in addition to the characters aſſigned to it by others. "Palpes, quatre alongés filiformes. Machiore bifide. Lèvre cornée, légèrement échancrée. Languette légèrement échancrée. Antenne en maſſue perfoliée." The family hydrophiliens, as a ſub-diviſion of the "Sphéridiotes," is deſcribed at ſome length by Olivier; from which they have been laſtly removed by Latreille, and now conſtitute the fourteenth family of the "Pentameres."

Latreille divides the hydrophiliens into two ſections, one of which has the jaws entire at their extremity, the maxillary feelers rather ſhorter than the antennæ, the body oblong and nearly plain above, and the breadth of the thorax never much exceeding its length. This ſection contains the two genera elophorus and hydræna (the hydræna of Illiger.) The inſects of the ſecond ſection are known by having the jaws bidentated at their extremity; the maxillary feelers alſo as long, or longer than the antennæ; the body hemiſpherical, or ovoid and convex; and the thorax tranſverſe. This laſt contains likewiſe two genera, as ſpercheus and hydrophilus. The genus elophorus is diſtinguiſhed by clavated antennæ, the club of which commences at the ſixth joint; and the feelers terminate in a large oval joint. The club of the antennæ in hydræna begins at the third articulation; and the feelers end in a joint much ſmaller or thinner than that of the preceding. In ſpercheus the antennæ conſiſt of ſix joints, and the limbs are deſtitute of conſpicuous ſpines, or ſpurs. And laſtly, that genus, to which the name of hydrophilus is retained, includes thoſe only which have nine joints in the antennæ, and the limbs terminated in a kind of ſpurs or ſpines. The greater number, if not the whole, of thoſe, appear to be hydrophili of continental writers in other parts of Europe.

Like the dytiſci the hydrophili inhabit ponds of ſtagnant waters, reſiding in the aquatic element during the day-time, and venturing abroad on the wing in the night ſeaſon, at which period they become the prey of the owl, the goatſucker, and other nocturnal birds. The males are diſtinguiſhed from the females by having a horny flap or ſhield of a concave form on the anterior legs. The poſterior legs are adapted in an admirable and peculiar manner to its mode of life, being long, curved, and flattiſh, and furniſhed on the inner ſide with a ſeries of cloſe-ſet filaments, reſembling a fin, by means of which it is enabled to ſwim, and perform its various evolutions in the water with the utmoſt eaſe and velocity. The larvæ, as in the dytiſci, are hexapodal creatures which live in the waters and prey upon inſects, the fry of fiſhes, and other inhabitants of its aquatic regions. It is ſuppoſed to live between two and three years in the ſtate of larva before it aſſumes the pupa form, previous to which latter change it buries itſelf in ſome bank of earth or ſand contiguous to the boundaries of its uſual haunts, and remains, while in the ſtate of pupa, incloſed within a covering of its own formation, the ſhape of which is uſually oval or ſpherical. The opinion of Degeer that the hydrophili, in the laſt or winged ſtate, are carnivorous, ſeems to be in ſome degree refuted by the more recent obſervations of naturaliſts, the reſult of which appears to be that they ſubſiſt chiefly, if not entirely, on vegetable food; and we may further add that their internal conformation pretty clearly proves the truth of this intereſting diſcovery.

Species.

Piceus. Black and ſmooth; ſternum furrowed, with a long ſpine pointing backwards. Fabr. Donov. Brit. Inſ. &c. *Hydrophilus ruficornis*, Degeer. *Le grand hydrophile*, Geoff. *Dytiſcus piceus*, Linn.

Native of Europe.

Olivaceus. Olive, ſternum grooved with a long recurved ſpine; wing-caſes emarginate. Fabr.

Inhabits Coromandel, and leſs than the former.

Caraboides. Black and poliſhed, the wing-caſes ſomewhat ſtriated. Fabr. Donov. Brit. Inſ. *Hydrophilus nigricornis*, Degeer. *Hydrocantharus niger ſubrotundus*, Ray.

An European ſpecies.

Lateralis. Black and gloſſy; margin of the thorax and wing-caſes yellow. Fabr.

Half the ſize of the former, the ſternum projecting backwards into a ſharp point, with a yellow dot in the middle, and the legs ferruginous. Inhabits South America.

Rufipes. Shining black; legs rufous; ſternum with a recurved ſpine. Fabr.

Size of the laſt, and inhabits China. The antennæ are ferruginous, with the club brown; the body glabrous, and without ſpots.

Emarginatus. Duſky-brown; ſhield emarginate. Fabr. &c.

Found on aquatic plants in Europe. Body gibbous and opaque.

Fuscipes. Black; wing-caſes ſtriated with dots; margin livid; legs fuſcous. Marſh. Ent. Brit. *Dytiſcus fuſcipes*, Linn. Fn. Suec. *Dytiſcus gyrinoides*, Schrank. *L'Hydrophile noir ſtrié*, Geoff.

An European ſpecies.

Scarabæoides. Oval, convex, black, and very ſmooth; wing-caſes ſtriated: legs pitchy. *Dytiſcus ſcarabæoides*, Linn. Syſt. Nat. X. Roeſel. &c.

Native of waters in Europe.

Picipes. Black; legs pitchy; wing-caſes ſmooth. Fabr.

Inhabits Germany.

Orbicularis. Subrotund; body glabrous and black; Fabr. *L'Hydrophile liſſe à points*, Geoff.

Same country as the preceding ; and is likewiſe found in France and other parts of Europe.

SUBROTUNDUS. Roundiſh, glabrous and black ; wing-caſes ſtriated. Fabr.

Smaller than the laſt, and inhabits America.

BICOLOR. Ovate ; above yellowiſh, beneath black. Fabr. &c.

Native of Denmark.

COLLARIS. Black ; mouth, thorax at the ſides, and a few abbreviated lines on the wing-caſes ferruginous. Fabr.

Inhabits South America.

UNDATUS. Ovate, black ; thorax pale ; wing-caſes ſtriated grey. Fabr.

The head of this ſpecies is gloſſy black ; antennæ and feelers yellow ; thorax with a double black dorſal line ; wing-caſes obſcurely undulated with black ; body black, and legs yellow. This inſect inhabits South America.

OBSCURUS. Gloſſy black ; wing-caſes ſtriated and ferruginous at the baſe and tip. Fabr.

Native of Germany ; the head and thorax ſmooth and without ſpots ; legs ſomewhat ferruginous. Obſ. This muſt not be confounded with hydrophilus obſcurus of Müller (Zool. Dan.), which is deſcribed of a livid colour, with the abdomen black, and the wing-caſes gloſſy with crowded ſpots. This laſt mentioned inſect is perhaps a variety of the following ſpecies.

LURIDUS. Thorax and ſtriated wing-caſes brown-cinereous ; body black. Gmel. Degeer, &c.

Inhabits Europe.

ERYTHROCEPHALA. Ovate, black ; head, thorax, and border of the wing-caſes rufous. Fabr.

Country unknown. The legs rufous, thighs black.

HÆMORRHOIDALIS. Black ; wing-caſes ſtriated, the tip with the ſhanks ferruginous. Fabr. &c.

Inhabits Germany.

MARGINELLUS. Gloſſy black ; thorax and wing-caſes edged with rufous. Fabr.

Size of the laſt, and inhabits the ſame country ; the wing-caſes ſmooth ; legs black ; tarſi ferruginous.

SORDIDUS. Black, and ſomewhat gloſſy ; margin of the thorax livid ; wing-caſes livid, with black ſpots. Marſh.

Inhabits Britain in ſtagnant waters.

VERRUCOSUS. Dull black, ferruginous ; abdomen beneath verrucoſe. Marſh.

Legs and abdomen black ; tubercles beneath reſembling thoſe on ſome ſpecies of the Lichen genus. Native of Britain.

LIVIDUS. Ovate, livid, and very ſmooth. Oliv. *Dytiſcus lividus*, Forſter. *Hydrophilus lividus*, Marſh.

Antennæ teſtaceous at the baſe ; legs black, the ſhanks and tarſi teſtaceous ferruginous. Found in maritime marſhes in Europe.

DERMESTOIDES. Hemiſpherical-ovate, and lurid ; head black ; thorax at the ſides dull ferruginous. Marſh. *Dytiſcus dermeſtoides*, Forſter.

Inhabits ſtagnant waters ; the head black and gloſſy ; thorax black except the margins ; legs ferruginous.

TORQUATUS. Ovate teſtaceous ; head behind black. Marſh.

The head is yellow ; abdomen black ; legs pitchy black. A Britiſh ſpecies.

MINUTUS. Ovate and black ; wing-caſes and legs grey. Fabr. &c.

Head pitchy, black and gloſſy ; thorax at the ſides pale ; abdomen beneath pitchy black. Native of Europe.

GRISEUS. Above cinereous, beneath fuſcous. Fabr.

Size of the laſt, and inhabits Europe.

BIPUNCTATUS. Thorax black, edged with grey ; wing-caſes brown with a whitiſh margin and dot behind. Fabr. *Hydrophilus coccinelloides*, Hellw. *Dytiſcus coccinelloides*, Schrank.

A ſmall ſpecies found in Europe.

LUTOSUS. Fuſcous ; wing-caſes ſtriated with impreſſed dots. Marſh.

A ſmall ſpecies ; the thorax is rugoſe, with tranſverſe flexuous raiſed lines. Native of Britain.

NITIDUS. Black and poliſhed ; margin of the thorax with the legs rufous. Marſh.

Inhabits Britain.

MOLLIS. Black and gloſſy ; thorax and wing-caſes brown, teſtaceous. Marſh.

Head and abdomen black. A ſmall ſpecies found in Britain.

PICINUS. Ovate, pitchy, and gloſſy ; legs rufous. Marſh.

Size of the laſt, and inhabits Britain.

LONGIPALPIS. Black ; feelers antenniform ; antennæ and feet red. Marſh.

Length rather more than one line ; the feelers advanced and three-jointed, the firſt articulation long as in the antennæ of ſome curculiones ; head black ; thorax black and attenuated behind, line in front tranſverſe and impreſſed ; wing-caſes black and ſtriated with dots. A Britiſh ſpecies.

IMPRESSUS. Black ; thorax with a large impreſſed dot on each ſide ; legs teſtaceous. Marſh.

Body entirely black ; wing-caſes ſtriated. Inhabits Britain.

FULVUS. Fulvous ; wing-caſes lineated with dull black ; abdomen black. Marſh. *L'Hydrophile fauve*, Geoff.

Antennæ fuſcous ; feelers teſtaceous, with the tip black ; head fulvous and dotted ; eyes black ; thorax fulvous and dotted, the front black ; wing-caſes fulvous with longitudinal obſolete lines of black ; abdomen beneath black, covered with fine hairs ; legs teſtaceous and downy. Native of Europe.

MARGIPALLENS. Pitchy and entirely gloſſy ; margin of the thorax pale. Marſh.

A Britiſh ſpecies.

OCHROPTERUS. Black ; ſides of the thorax and wing-caſes, with a ſpot before each eye, lurid. Marſh.

Length two lines ; the head black, except the two lurid ſpots before the eyes ; thorax and wing-caſes very finely dotted ; tarſi ferruginous. Native of Britain.

AFFINIS. Cinereous ; wing-caſes each with two black dots, and ſtriated with punctures ; thorax emarginate, braſſy-green. Marſh. *Hydrophilus griſeus ?* Herbſt.

Inhabits ſtagnant waters in Europe.

DORSALIS. Fuſcous ; thorax green ; wing-caſes ſtriated, teſtaceous with a common black ſpot, incloſing two teſtaceous ones. Marſh.

Native of Britain.

CINCINDELOIDES. Black braſſy ; eyes prominent ; wing-caſes with ridged ſtriæ. Marſh.

Body entirely black and braſſy ; head advanced ; thorax with three hollows ; wing-caſes with two lines of impreſſed dots between the ridges.

A Britiſh ſpecies.

PYGMÆUS. Grey ; head black behind ; thorax yellowiſh. Fabr.

A minute kind found in South America ; the wing-caſes without ſpots.

TRICOLOR. Black ; wing-caſes pitchy edged with black, and ochraceous at the tip ; legs tawny. Herbſt.

Inhabits Pruſſia.

CORDIGER. Black ; wing-caſes and margin of the thorax ferruginous, the firſt with a common heart-ſhaped ſpot. Herbſt.

Inhabits ſame country as the former.

Pusillus. Black; wing-caſes very ſmooth; antennæ and tarſi brown. Müll.

Native of Denmark.

Pilula. Black; above poliſhed with crowded dots. Müll. *Hydrophilus punctatus*, Geoffr.

An European ſpecies; as are alſo the two following.

Niger. Gloſſy black; wing-caſes finely ſtriated with diſtant dots; antennæ and tips of the legs ferruginous. Linn.

Ater. Black and glabrous; antennæ and ſhanks reddiſh. Linn.

HYDROPHOBIA, in *Medicine*, from ὕδωρ, *water*, and φοβέω, *I fear*, ſignifying, literally, a *dread of water*, is the term employed by medical writers to denote the diſeaſe occaſioned by the bite of a rabid animal; an averſion to liquids being one of the characteriſtic ſymptoms of that diſeaſe. Some have uſed the more general term *hygrophobia*, from ὕγρον, *liquid*.

Of the impropriety of theſe appellations, deduced from one ſymptom only, and that neither excluſively belonging to the diſeaſe, nor invariably preſent in it, we ſhall have occaſion to ſpeak preſently. In the mean time, we may obſerve, that the older writers, as we are informed by Cælius Aurelianus (Acutor. Morb. lib. iii. cap. 9. and 12.) uſed the terms *aërophobia*, or a *dread of air*, and *pantophobia*, or a fear of *all things*, as appropriate names for the diſeaſe, ſince the impreſſion of cold air ſometimes excited terror, and the diſorder is marked by a ſingular degree of general timidity and diſtruſt. Others called it *phobodipſon* (δίψος, ſignifying *thirſt*), becauſe the patient is *thirſty*, yet *fears* to drink. Several modern authors, however, objecting to an appellation expreſſive only of one ſymptom, have more correctly denominated the diſeaſe *rabies*, and *rabies canina*, or canine madneſs. The French call it *la rage*.

It is uncertain at what period this diſeaſe became known. Its ſymptoms are never mentioned by Hippocrates, which affords a ſtrong preſumption that it did not exiſt in his time; for it is a diſeaſe ſo ſingular and ſtriking in its appearances, that it could never be ſeen by any one without leaving the deepeſt impreſſion upon the mind. Ariſtotle is the firſt writer who expreſsly mentions it. He ſays that all animals, except man, are infected by the bite of a mad dog, and deſtroyed by it. This imperfect ſtate of his knowledge reſpecting the malady, is a proof that it was a matter of recent obſervation; for although ſeveral perſons might be bitten without ſuffering the diſeaſe, and, from the length of time which commonly elapſes between the infliction of the bite and the appearance of the ſymptoms, ſeveral caſes might occur before it was referred to its true ſource; yet no very long time would be requiſite to clear up theſe doubtful points. Accordingly, we find ſubſequent writers treating of the diſeaſe in a familiar manner. Plutarch affirms that the hydrophobia was firſt ſeen at Rome in the days of Aſclepiades. See Ariſtot. Hiſt. Anim. lib. viii. cap. 22. Plutarch, Sympoſiacon, lib. viii. probl. 9. Le Clerc. Hiſt. de la Medécine, p. ii.

The origin of the poiſon, by which hydrophobia is generally communicated, is likewiſe a ſubject of much uncertainty. It is known that animals of the dog-kind, including the wolf and the fox, are moſt frequently the ſubjects of *rabies*; and ſome writers have maintained that, although it may be received and propagated by other animals, yet it always originates with ſome of the canine race. (See Hillary on Diſ. of Barbadoes, p. 246.) But it is ſtill a matter of doubt, whether it occaſionally ariſes ſpontaneouſly in theſe animals; or whether, like the ſmall-pox in the human ſpecies, it is propagated only by contagion. There are ſome facts, which, though they do not prove the negative, in reſpect to the ſpontaneous origin, yet afford ſufficient evidence that the diſorder, even among dogs, is moſt commonly the reſult of infection. Great heat has been ſaid to excite *rabies* in the dog-tribe. But if that were the caſe, it ought to be, as it were, endemic in tropical countries. Dogs are more numerous, Dr. J. Hunter has affirmed, in the iſland of Jamaica than perhaps in any other part of the world. It is the ambition of every negro to be maſter of a dog; "yet notwithſtanding their great numbers, particularly in the towns, *forty years* have elapſed without a dog being known to go mad. The inſular ſituation of the country ſecures to it in ſome degree the advantages of a quarantine; and the rare occurrence of the diſeaſe proves that it ſeldom, if at any time, originates of itſelf." (See Tranſ. of a Society for the Improvement of Med. and Chirurg. Knowledge, v. i. art. 17.) It is alſo ſtated, that the moſt eminent ſportſman in this country, Mr. Meynell, to whom the preſervation of his kennel from madneſs was an object of great importance, preſerved his dogs from the diſeaſe, during a long ſeries of years, by making every new hound perform a quarantine before he was allowed to join the pack. Ibid.

There is reaſon to believe, however, that the *rabies*, in the animal race, occurs at times ſpontaneouſly; but whether from the cauſes which have been ſtated by authors it were not eaſy to decide. Among theſe cauſes, Boerhaave enumerated "a very hot climate, or one expoſed to the extremes of heat and cold; a very hot and dry ſeaſon; feeding upon putrid, ſtinking, and maggotty fleſh; want of water; worms bred in the kidnies, inteſtines, brain, or cavities of the noſe (Aphoriſm 1134.); but the influence of theſe circumſtances in producing the diſeaſe is not eſtabliſhed by a ſufficient number of obſervations.

All domeſtic animals, birds as well as beaſts, are ſuſceptible of the poiſon of the rabid dog. Indeed our experience has not yet taught us that there is any race of animals exempted from its effects. But whether every animal labouring under the diſeaſe is capable of infecting others, or whether this power is confined to a few only, we are yet to learn. Boerhaave affirms that the diſeaſe has been communicated by infection to others by dogs, cats, wolves, foxes, horſes, aſſes, mules, ſwine, apes, cocks of the poultry breed, and men, when affected with rabies (Aph. 1132.); and the cow has alſo been ſaid to propagate it. Van Swieten has ſtated ſome inſtances, from old authors, of hydrophobia occaſioned by the beak of an enraged cock wounding the hand and arm. But there is little doubt that, in ſuch caſes, the ſpaſmodic and fatal diſeaſe, which enſued, was *tetanus*, and not hydrophobia. (See Tetanus.) This notion is confirmed by the early occurrence of the ſymptoms after the bite, namely, within the firſt or ſecond day, which is not unuſual in *tetanic* affections, but never perhaps occurs in hydrophobia. (See Van Swieten's Comment. on Aph. 1132. Alſo, Hamilton on Hydrophobia, vol. i. p. 107. 2d edit.) It is certain, however, that not only animals of the canine ſpecies, but cats, have produced hydrophobia in the human ſpecies by their bite. Were we to judge from analogy, from ſeeing two animals, ſo different from each other as the dog and the cat, capable of infecting others, we might be led to infer, that every animal ſuſceptible of the diſeaſe had the power of communicating it, provided their natural habits led them to bite and tear with their teeth ſuch animals as came in their way, while in an enraged ſtate. With reſpect to men, under the influence of hydrophobia, although

though the popular notion of their general diſpoſition to bite thoſe around them is erroneous, yet there are inſtances on record in which hydrophobic patients did bite ſome of their attendants, but no ill conſequences have been known to follow. From this, however, as Dr. John Hunter juſtly remarks, we can draw no poſitive inference; for it is but a ſmall proportion of ſuch perſons as are bit by dogs undoubtedly mad, who are infected with the poiſon. Tranſ. of a Society, &c. p. 300.

With regard to the activity of the poiſon of the rabid dog, the facts which have been collected have been as vaguely ſtated, and the inferences, therefore, are as inconcluſive as thoſe relative to the topics juſt mentioned. Among the older writers, indeed, there was much credulity, and they have tranſmitted to us many fabulous hiſtories in regard to the operation of the rabid virus. "Scarce any poiſon known," ſays Hillary, (relying upon the truth of thoſe tales,) "is ſo infectious, or ſo eaſily and readily communicated by ſo many and various ways as this of a mad dog is; for the ſlighteſt bite, only tearing the ſkin, without drawing blood; or the ſmalleſt quantity of the ſlaver of the mad animal, either freſh or dried for ſome time, taken upon the tongue or lips; or rending a perſon's clothes and leaving the ſlaver on them to dry, has produced this diſeaſe; as a woman had her coat torn by a mad dog, which ſhe a conſiderable time after ſewed up, and bit off the thread with her teeth, and ſome time after died rabid from biting off that thread. (Hildanus Obſ. Chir.) Alſo a man only kiſſing his children to take his leave of them when he had the rabies upon him, they all ſoon after died rabid. (Palmarius de Morb. Contag.) Kiſſing a favourite dog that was mad had the ſame effect, &c. has produced this moſt fatal diſeaſe." (On Diſeaſes of Barbadoes, p. 249. See ſeveral ſimilar caſes quoted by Dr. Hamilton, vol. i. p. 98—104.) Hillary admits, however, that the poiſon does not appear to infect a perſon through the unbroken ſkin: and there is certainly a defect of accurate detail, in the caſes quoted by Dr. Hamilton, where the infection was ſaid to have been communicated when no bite was inflicted. Some excoriation or rupture of the cuticle may have exiſted, although unnoticed, in the hands of thoſe who examined the mouths of dogs in this malady. (See Hamilton, caſe iii. p. 100, caſe ix. p. 103.) Where the diſeaſe was produced by a rabid dog, licking a ſore until it bled, we underſtand how the infection would be occaſioned by abſorption. See Dr. Hunter, in Tranſ. before quoted, p. 301.

As the bite only ſerves the purpoſe of *inoculation*, the danger ariſing from it will be various, as it happens to be inflicted in a part more or leſs vaſcular; or as the teeth are more or leſs loaded with the poiſon. There is the greateſt danger from bites in the face, and the ſymptoms come on ſooneſt; bites in the hands alſo, which are generally bare, are full of danger. In other parts of the body, the clothing, by wiping the teeth of the animal, greatly leſſens the danger of infection. It is fortunate that the human ſpecies is much leſs ſuſceptible of the infection than the dog. Four men and twelve dogs were bit by the ſame rabid dog, and every one of the dogs died rabid, while all the four men eſcaped, though they uſed no other means of prevention but ſuch as we ſee every day to fail. There is alſo an inſtance of twenty perſons being bit by the ſame mad dog, of whom only one had the diſeaſe. (See Dr. Hunter's paper, p. 302.) Some writers have calculated, indeed, that, on an average, only *one* perſon in *twenty-five*, who are bitten by rabid dogs, ſuffer hydrophobia. Dr. Hamilton, however, on collating a great number of inſtances of bites received, found that the average did not amount ſo high: he thinks that not more than *one* in *ſixteen* of the human ſpecies, who are bitten, take the diſeaſe. Loc. cit. vol. i. p. 31.

Some experiments, made by Mr. Cline, reſpecting the communication of rabies by inoculation with the ſaliva of a hydrophobic man, in the laſt ſtage of the diſeaſe, would throw great doubt on the infectious qualities of that ſecretion in the human ſubject. He took particular pains in inſerting the ſaliva, while perfectly freſh, into a dog, three rabbits, and ſeveral fowls: "but in none of theſe inſtances was there the leaſt appearance of the diſorder at the expiration of three months."—Mr. Aſtley Cooper, on the other hand, inoculated a dog, a pig, a fowl, and a rabbit, with the ſaliva of a dog, which had recently died of rabies, by inſerting, from the point of a lancet, between two and three drops under the ſkin of the inner part of the thigh of each." The dog and fowl were kept confined for nine weeks, and the pig ſeven, but without any appearances of hydrophobia. The dog afterwards became the property of a gentleman, who kept him nearly twelve months, and he had never any marks of the diſeaſe. The rabbit was accidentally killed on the fourth day from the experiment." See two caſes of Rabies Canina, by Dr. Babington, &c in the Medical Records and Reſearches, Lond. 1798, p. 136—8.

On the whole, therefore, the evidence is of an unſatisfactory and even contradictory nature, in reſpect to the qualities and operation of the *virus* of rabies; and much remains to be aſcertained by future experiment and inveſtigation. We know, however, too well, that the fatal conſequences of the poiſon have appeared, in ſome inſtances, in which every practice had been adopted, after the infliction of the bite, to remove the bitten part, as well as every portion of the poiſon that could be ſuppoſed to lodge in the wound.

We ſhould now have proceeded to deſcribe the ſymptoms of the diſeaſe, as it affects the dog, in order that it might be ſpeedily recogniſed, and diſtinguiſhed from other diſeaſes, to which that animal is ſubject: but this has been already ſo fully and diſtinctly done, by a writer poſſeſſed of an extraordinary degree of experience upon the ſubject, that we muſt refer our readers to his deſcription (ſee the article Dog); and proceed to give an account of the ſymptoms of the diſeaſe, as it occurs in the human ſubject. We may juſt remark, by the way, that the influence of *names*, in reſpect alſo to the diſeaſe in the dog, has led to ſome dangerous popular miſtakes, which are pointed out in the article juſt referred to. The term *hydrophobia*, being erroneouſly applied to the rabies of the dog, has induced a ſuppoſition that no dog is rabid, while he continues to drink; whereas he is conſtantly endeavouring to quench his thirſt in that diſeaſe. And again, the appellation of *madneſs* has led to a belief that violence and fury are characteriſtic of rabies in the dog; but, though he is irritable and peeviſh, there is nothing of wildneſs in his diſpoſition. In conſequence of this miſtake, dogs have been allowed to go about, fondled, and even ſlept with (ſee Mem. of Swediſh Acad. 1777) in a rabid ſtate.

Hiſtory of Symptoms.—The wound inflicted by the bite of a rabid animal has nothing peculiar in its appearance, and heals as readily as the bite of an animal that is not rabid. From the time of the bite until the period when the ſymptoms appear, there is no derangement of health, nor any perceptible change in the conſtitution, provided the perſon bitten be not under the influence of fear. The interval between the infection and the commencement of the diſeaſe varies conſiderably in different inſtances: the moſt common period, as it was long ago ſtated by Cœlius Aurelianus, appears to be about forty days or ſix weeks. Dr. Mead ſtates the ordinary interval at between thirty and forty days: (Mead on Poiſons, p. 130.) and Dr. Babington from three to five weeks; ſome inſtances occurring much earlier, and others not for many months, ſo that he conſiders the average from four to twelve weeks. (Med. Records and Reſearches, before quoted.) In the caſes laid before the Society for the Improvement of Medical and Chirurgical Knowledge, the interval varied from thirty-one days to ſeventeen months. Dr. Hamilton draws the following concluſions, as to the interval between the bite and the occurrence of the diſeaſe, from a table of 131 caſes. Only three took the diſeaſe before the 18th day, none before the 11th—from the 18th to the 30th, *ſeventeen* were ſeized:—*ſixty-three* began to be ill from 30 to 59 days after the bite;—*twenty-three* were attacked from two to three months incluſive;—*nine* from three to four months;—*two* at five months;—*one* at five months and eleven days;—*one* at ſix months;—*one* at ſeven months;—*two* at eight months;—*one* between eight and nine months;—*two* at nine months;—*one* at eleven months;—*one* at fourteen months;—*two* at eighteen months;—and *one* at nineteen months. (Vol. i. p. 113.) The laſt-mentioned interval is, he thinks, the longeſt to which any credit can be given. On the other hand, a caſe is related by Dr. Bardſley of Mancheſter, which proved fatal, as is uſual; and every inquiry reſpecting which corroborated the patient's repeated aſſertion, "that he had never ſuffered the leaſt injury from any animal, except the bite, inflicted *twelve years ſince*, by an apparent mad dog." (See Memoirs of the Liter. and Philoſ. Society of Mancheſter, vol. iv. part ii. p. 431.) In this inſtance, the nature of the diſeaſe was perfectly clear, and the evidence as to the bite not leſs ſatisfactory: ſo that we muſt either admit the latent ſtate of the poiſon for this long interval, or the *ſpontaneous* origin of hydrophobia in man. Dr. Bardſley's paper, which contains a reference to numerous caſes, in which the latent period of the poiſon was long, is worthy of peruſal. But to proceed.

At an uncertain time after the infliction of the bite, the patient feels ſome degree of pain or uneaſy ſenſation in the bitten part, which is ſometimes compared to a ſcorching by heat, is ſometimes attended with itching, and ſometimes ſuppoſed to be rheumatic. This pain, when the bite, as is moſt frequent, is in the hand, ſpreads up the outſide of the arm to the ſhoulder, (not affecting the axilla,) and the neck. In ſome caſes the cicatrix left by the bite is ſaid to become inflamed, and even to diſcharge. Theſe pains are ſoon ſucceeded by a general depreſſion of ſpirits, and eſpecially a ſenſe of undeſcribable liſtleſſneſs and anxiety. Sometimes a general rigor or chill occurs, as in the commencement of a fever. The night is paſſed in the ſame reſtleſs ſtate, without ſleep. The appetite begins to fail, and ſome thirſt is preſent. And now the peculiar ſymptom which gives the diſeaſe its name, the *dread of liquids*, is diſcovered, often accidentally, on attempting to take drink; as the liquid approaches the lips, a ſudden convulſive ſob, or catch in the breath, with a momentary ſenſation of choking, takes place, which is renewed at every attempt. As the diſeaſe advances, this attempt is not thought of without horror, and the very idea excites theſe ſpaſmodic fits of choking in the throat, and catching of the breath. This may be beſt illuſtrated by examples. "On our propoſing to him to drink," ſays Dr. Marcet, ſpeaking of a hydrophobic patient, "he ſtarted up, and recovered his breath by a deep convulſive inſpiration; yet he expreſſed much regret that he could not drink, as he conceived it would give him great relief, his mouth being extremely parched and clammy. On being urged to try, however, he took up a cup of water in one hand and a tea-ſpoon in the other. The thought of drinking out of the cup appeared to him intolerable; but he ſeemed determined to drink with the ſpoon. With an expreſſion of terror, yet with great reſolution, he filled the ſpoon, and proceeded to carry it to his lips: but before it reached his mouth, his courage forſook him, and he was forced to deſiſt. He repeatedly renewed the attempt, but with no more ſucceſs. His arm became rigid and immoveable, whenever he tried to raiſe it towards his mouth, and he ſtruggled in vain againſt this ſpaſmodic reſiſtance. At laſt ſhutting his eyes, and with a kind of convulſive effort, he ſuddenly threw into his mouth a few drops of the fluid, which he actually ſwallowed. But at the ſame inſtant he jumped up from his chair, and flew to the end of the room, panting for breath, and in a ſtate of indeſcribable terror." (See Medico-chirurgical Tranſactions, vol. i. p. 138. Lond. 1809.) A patient of Dr. Bardſley's, having eaten ſome bread and butter, with great difficulty, was requeſted to waſh down this ſolid food with ſome liquid; and he expreſſed a readineſs to make the trial. "On receiving a baſin of butter-milk, he haſtily applied it, with a determined countenance, to his lips;—when he was inſtantly ſeized with ſo ſevere a ſpaſm and rigidity of the muſcles of the neck, that he was compelled, in an agony, to deſiſt from drinking. Shortly after, he raiſed himſelf upon his knees in bed, took the bowl again into his hands, and by forcibly ſtretching his neck forward, at the moment he received the liquid into his mouth, and then violently throwing his head backwards, he ſucceeded in ſwallowing a ſmall portion. He appeared highly gratified by the ſucceſs of this effort, and the fortitude he had exhibited; and exultingly demanded another draught of the butter-milk, as he now thought he could conquer the difficulty he had hitherto experienced. But a violent return of the ſpaſms in the throat and neck checked this attempt. Theſe convulſions were terminated by the ſtomach diſcharging the liquid previouſly ſwallowed, highly tinged with bile." (Memoirs of Mancheſter Society, vol. iv. p. 439.) In a word, it is obvious to the byſtander, that every attempt to paſs liquid over the root of the tongue excites convulſions in the larynx and pharynx, and even in the muſcles of the cheſt and abdomen; and therefore this ſymptom, the *hydrophobia*, as Dr. Mead and others have remarked, is not a delirious dread, or hallucination of the mind, but a matter of experience, which at firſt excites the ſurpriſe of the patient. Mead affirms that it ſhould have been called, not *hydrophobia*, but δυσκαταποσις, *dyſcatapoſis*, or difficulty in ſwallowing. (See his Mechanical Account of Poiſons, p. 146, 3d edit.)

But the dread of ſwallowing liquids, although the moſt ſingular ſymptom of the diſeaſe, and the origin of its name, conſtitutes but a ſmall part of this diſtreſſing malady. It is only one among many other effects of the poiſon upon the nervous ſyſtem at large. The ſtate of diſeaſe into which the nervous ſyſtem is thrown, is evinced by the extreme irritability of the whole frame, mind and body, and the exceſſive ſuſceptibility to all impreſſions; hence the conſtant watching and inquietude; and the ſudden fits of anger and impatience, ariſing from the moſt trifling cauſes, as the patient himſelf readily allows, and even wonders at, and apologizes for, in the ſucceeding moments of compoſure. Hence alſo the diſtreſs, and even the recurrence of his ſpaſms, occaſioned often by the ſlighteſt motion of the air, as from opening the door, from the approach of any perſon, or even of a perſon's hand, in front of him; from hearing water poured from one veſſel to another; or even by the buzzing of a fly. This morbid excitability of the nervous ſyſtem, is farther manifeſted in the extreme timidity and ſuſpicion of the patient, in the imaginary objects of terror and uneaſineſs which the ſenſes frequently repreſent to him, and in the occaſional delirium and incoherence of ideas, from which, however, he eaſily collects himſelf. The circumſtances may be illuſtrated by referring to almoſt every caſe on record. Dr. Bardſley, ſpeaking of the patient before mentioned, ſays, "He was now alarmed to a degree of diſtraction at being left alone; he examined every object with a timid and ſuſpicious eye; and, upon the leaſt noiſe of a footſtep in the gallery, he begged, in the moſt piteous accents, to be protected from harm."—"I obſerved he frequently fixed his eyes, with horror and affright, on ſome ideal object; and then, with a ſudden and violent motion, buried his head underneath the bed-clothes. The laſt time I ſaw him repeat this action, I was induced to inquire into the cauſe of his terror. He eagerly aſked if I had not heard howlings and ſcratchings? On being anſwered in the negative, he ſuddenly threw himſelf upon his knees, extending his arms in a defenſive poſture, and forcibly throwing back his body and head. The muſcles of the face were agitated by various ſpaſmodic contortions;—his eye-balls glared, and ſeemed ready to ſtart from their ſockets; and at that moment, when crying out in an agonizing tone—'Do you not ſee that black dog?'—his countenance and attitude exhibited the moſt dreadful picture of complicated horror, diſtreſs, and rage, that words can deſcribe, or imagination paint."—"His mental faculties at this period (a ſhort time before death) ſuffered very little derangement; for although, when not attending to external objects, he would utter ſome incoherent ſentences; yet, the moment he was ſpoken to, he was perfectly collected, and returned rational anſwers." (Bardſley, loc. cit.) Dr. Marcet obſerves, in regard to his patient, on the fifth day of the diſeaſe—"He appeared ſtill coherent and diſtinct in his ideas; but ſome of his conceptions were conſiderably diſturbed. His ſight was not materially impaired, for he could tell what hour it was by looking at the clock: but he often fancied he beheld objects which were not before him. He thought, for inſtance, that he ſaw various inſects and reptiles crawl about him. 'My ſight is queer,' ſaid he, 'I think I ſee ſtrange animals,' &c. Once or twice he exclaimed with an accent of terror, 'Who is pouring cold water down my head?'—yet no one was near him. He was conſcious of his extreme irritability, and often prayed to be kept tranquil. This unfortunate man, in the height of his diſtreſs, ſtill apologized for his acts of violence, and declared that he could not conceive what occaſioned this extraordinary agitation." Medico-chirurgical Tranſac. vol. i. p. 147.

Theſe ſtatements may convey to the reader ſome notion of the miſerable condition of the ſufferer, afflicted by this malady, and of its peculiar and characteriſtic ſymptoms; the impreſſion of which cannot be eaſily effaced from the recollection of thoſe who have witneſſed them. There are ſome other circumſtances belonging to the diſeaſe, of leſs note, which remain to be mentioned. One of theſe is a conſtant collection of a thick, ropy, and tenacious ſaliva in the fauces, which is often productive of extreme diſtreſs; for as the miſerable ſufferer is unable to make the ſmalleſt attempt to ſwallow it, without exciting the convulſive choking, he ſpits it out inceſſantly, and with great vehemence and difficulty, often cautioning the byſtanders to keep out of the way. "Oh! do ſomething for me;" exclaimed Dr. Marcet's patient, "I would ſuffer myſelf to be cut to pieces! I cannot raiſe the phlegm; it ſticks to me like bird-lime." Dr. Wavell's patient, at times, drew the viſcid phlegm from his mouth with his fingers, and with inconceivable rapidity and eagerneſs, threw it againſt the wall. The pulſe in the beginning is not quick, nor is the ſkin hot; and there is none of the muſcular debility ſo remarkable in fever: but as the diſeaſe proceeds, there is ſome feveriſh heat, and the pulſe becomes quick, varying, however, exceedingly as ſlight cauſes of irritation influence the patient: as death approaches, it uſually becomes very quick and tremulous. Sickneſs and vomiting often occur, when a little phlegm, tinged with brown or yellow bile, is brought up. There is often a ſenſe of great oppreſſion and ſtricture about the breaſt, or what has been called anxiety about the præcordia, and which is probably an affection of the heart; for it is accompanied with ſighing and deep irregular inſpirations, and the patients find ſome relief from motion, as running and walking, which ſhew the lungs not to be the ſeat of the oppreſſion. The countenance is generally ſorrowful, and often expreſſive of a great degree of horror and diſtreſs.

There is a conſiderable variety in the ſymptoms in different conſtitutions: even the hydrophobia, or dread of ſwallowing liquids, occurs in very different degrees. But there is no part of the diſeaſe that admits of greater variation than the degree of mental derangement, which in ſome does not amount to more than extreme irritability and impatience; in others to muttering and incoherent talking, yet giving rational anſwers when queſtions are aſked; and in a few it riſes into ſhort fits of the moſt violent rage and fury, in which the patients bite and tear themſelves and every thing near them. In general they manifeſt no diſpoſition to miſchief; yet popular prejudice is ſtill on the watch for the "barking and biting like a dog," as the diſeaſe advances. In the caſe related by Dr. Marcet, the byſtanders confidently expected the ſymptom of *barking*, which they "thought at laſt to have clearly diſcovered in the peculiar noiſe which he made in breathing." Dr. Wavell, ſpeaking of this ſort of reſpiration, ſays, "the noiſe he made in drawing air into his lungs was undoubtedly peculiar; but neither in my opinion, nor in that of any other medical gentlemen who attended him, did it bear the leaſt reſemblance to the barking of a dog." (Med. Records and Reſearches, p. 151.) Were this notion of the canine metamorphoſis, which the diſeaſe has been ſuppoſed to effect in man, merely ſpeculative, it would be leſs important to confute it; but it is to be lamented, that the practical reſult of it, in the cruel and murderous plan of ſuffocating the patient, has been followed, both in France and in this country, within the laſt twenty years of the eighteenth century. See Hamilton on Hydrophobia, vol. ii. p. 140, and App. p. xxviii.

The duration of life, after the commencement of the ſymptoms of hydrophobia, has been on an average about *four days*; it varies from thirty-ſix hours to five, or even, though rarely, ſix days. The termination of life is likewiſe various in different inſtances: death is often very ſudden, being produced by one of the convulſive attacks, ſuch as occur on the attempts to drink; at other times, more general convulſions carry off the patient; while in other inſtances, again, the ſtrength ſinks ſuddenly, the patient becomes quiet and calm, and dies with a placid countenance, and without a ſtruggle.

Diſſections.—With the hope of acquiring ſome knowledge of the nature of this diſeaſe, and of the organs in which it is principally ſeated, phyſicians have ardently purſued the inveſtigation of the changes of ſtructure connected with it, by careful and almoſt innumerable diſſections of thoſe who have died of it. But it is to be lamented that no light whatever has been thrown upon the ſubject by theſe ample examinations. For, although in general ſome morbid changes in the ſtructure of different parts has been diſcovered, yet theſe have been found in various organs, in different caſes; thoſe organs, which appeared to be the principal ſeat of diſeaſe in one inſtance, being found altogether ſound in another, and *vice verſâ*; and the morbid changes obſerved in general, are by no means adequate to account for the phenomena of the diſeaſe.

The moſt frequent appearances which have preſented themſelves on diſſection, have been marks of ſlight inflammation in the inner coat of the ſtomach, near the *cardia* or upper orifice, conſiſting of red ſpots or blotches, or merely of an increaſed number of red veſſels, with ſmall ſtreaks of red blood; in many caſes a ſimilar inflammatory appearance has been found in the *pharynx*, or upper part of the gullet, ſometimes extending along the whole of that paſſage to the ſtomach. This ſtate of the throat, *œſophagus*, and ſtomach, ſeems to afford an explanation, in ſome meaſure, of the pain and difficulty of deglutition, eſpecially of liquids, which require a more active contraction of the paſſage: but the exceſſive dread at the attempt, and the convulſions excited by it, can only be aſcribed to that peculiar ſtate of irritability of the nervous ſyſtem, which characterizes the diſeaſe. On the other hand, however, caſes of hydrophobia have occurred, in which no inflammation in thoſe parts have been found. (See Dr. Babington's in Med. Records, &c. p. 124.) In ſome caſes, a glairy fluid has been found in the ſtomach in conſiderable quantities; in others a dark bilious matter has been ſaid to line its cavity. Hamilton, vol. i. p. 232.

Many diſſections of perſons who had died in a ſtate of rabies are recorded, in which appearances of inflammation and great congeſtion of the blood-veſſels were diſcovered in other viſcera, eſpecially in the brain and its ſurrounding membranes, and in the lungs. Sometimes not only an increaſed vaſcularity of the *pia mater*, the choroid *plexus*, and the brain itſelf has been found, but alſo ſlight watery effuſions on the ſurface of the brain. A ſtate of congeſtion in the lungs, reſembling that which is diſcovered after a fatal peripneumony, has occurred in many inſtances to a conſiderable extent; and the veſſels of the diaphragm have alſo been obſerved to be unuſually turgid. (See Dr. Babington's caſes in Med. Communic. and Med. Records, &c.—Mead on Poiſons.—Ferriar's Med. Hiſt. and Reflections, vol. iii.) Dr. Ferriar, indeed, is diſpoſed to attribute much of the diſeaſe to this pulmonary derangement. "If future diſſections ſhould prove," he ſays, "that congeſtion in the lungs generally appears in thoſe who die of rabies, I confeſs that I ſhould be diſpoſed to conſider this diſeaſe as dependent on the obſtruction of the circulation in that important organ. Accumulation of blood in the head, and compreſſion of the brain, muſt be the conſequence of ſuch an obſtruction, rapidly formed. The quick panting reſpiration, anxiety, and ſudden debility, may be referred to the ſame cauſe. In fact, we find a ſimilar degree of tremor attendant on the croup, which conſiſts in inflammation of the trachea, and deſtroys by ſuffocation. That degree of inflammation in the ſtomach and œſophagus, which produces the difficulty of ſwallowing liquids, may not only ariſe from ſympathy, but the ſymptom itſelf may occur in conſequence of the ſtate of the lungs alone." (Loc. cit. p. 34.) But in forming theſe conjectures, this intelligent phyſician has overlooked the circumſtance, that, however rapidly ſuch congeſtion may take place, in common peripneumony, no approximation of any of the ſymptoms to thoſe of hydrophobia is ever ſeen to occur; and the peculiar affection of the nervous ſyſtem is ſurely inexplicable upon any ſuch mechanical grounds.

Some writers have deſcribed various derangements of the liver and other abdominal viſcera, which diſſection has diſcovered, eſpecially appearances of congeſtion or ſlight inflammation: Mead, Hillary, and others, have mentioned a peculiar dryneſs of the pericardium, &c. But theſe changes appear to be accidental, and are more frequently not to be found. So that, on the whole, it would appear, that the nature of the malady is not manifeſted by any peculiar diſorder of ſtructure in any organ of the body, and therefore is beyond the reach of anatomical inveſtigation.

Diagnoſis.—From the peculiar nature of the ſymptoms above detailed, it might be conceived that no difficulty could occur, in diſtinguiſhing *rabies canina* from every other diſeaſe to which the human body is liable. But this is very far from being the caſe, as the records of medicine evince. For many hiſtories are related, in which, although the diſeaſe was the conſequence of a bite, it partook more of the nature of ſome other malady; and others are detailed, in which no bite had preceded the diſeaſe, or had occurred at ſo diſtant a period as to render its influence in exciting the diſeaſe extremely queſtionable: not to mention the number of miſtakes which have been committed, in conſequence of the ſymptom (*hydrophobia*, or *dread of water*,) being ſuppoſed to be the eſſence, or pathognomonic ſymptom of the diſeaſe.

In many circumſtances the *tetanus* bears a conſiderable reſemblance to *rabies*, and has, doubtleſs, been miſtaken for it. (See TETANUS.) This moſt violent and fatal diſeaſe is moſt frequently occaſioned by ſlight wounds, eſpecially about the hands or other tendinous parts; it ſeldom appears till after ſome little time has elapſed, and the wound has healed; it is marked by paroxyſms of violent general ſpaſms, beginning in the neck and throat, and accompanied by difficulty of ſwallowing, or total loſs of that power; theſe ſpaſms are excited by the ſlighteſt cauſes, "for almoſt every attempt at motion, as attempting a change of poſture, *endeavouring to ſwallow*, and even to ſpeak, ſometimes gives occaſion to a renewal of the ſpaſms over the whole body." (See Cullen, Firſt Lines, vol. iii. chap. on *Tetanus*); and the diſeaſe generally proves fatal by one of theſe convulſions about the fourth day. In all theſe circumſtances there is much ſimilarity with thoſe of rabies, inſomuch that ſome practitioners have denied the exiſtence of rabies, as the reſult of the poiſon of a rabid animal; and contended that the diſeaſe is, in all caſes, a tetanus, excited only by the wound which the teeth inflict. Inſtances certainly occur, in which, from a view of the ſymptoms, it might be difficult to decide, whether the diſeaſe were tetanus or hydrophobia. Dr. Bardſley deſcribes the caſe of a young gentleman, who, after having had his finger ſlightly wounded by a ſplinter of wood, was affected in about a week with ſpaſms about the lips, locked jaw, and paroxyſms of general ſpaſm. On the third day after the attack he could not ſwallow any watery fluids. "Whenever they approached his mouth, the convulſive ſpaſms of the face returned, and his head was forcibly drawn backwards." (Mem. of the Mancheſter Soc. vol. iv. p. 477.) The perſon who communicated this caſe, had formerly ſeen the ſame ſymptoms produced by the bite of a horſe. Both theſe patients recoverd. Similar examples of the occurrence of hydrophobic ſymptoms, ariſing in caſes of local injury, are mentioned by Hildanus, Cælius Aurelianus, and others.

It muſt be obſerved, however, that the *tetanic* ſpaſms generally commence within a few days after the injury, or in a much ſhorter period than thoſe of rabies; that the jaw is commonly rigidly locked in tetanus, and the muſcles of the neck and back moſt particularly affected; that the ſpaſms are of a more fixed or "*tonic*" ſpecies, (in the language of Cullen) conſiſting of rigid and long-continued contraction, rather than of ſhort convulſive action, and are relieved rather by remiſſion of their violence, than by a complete ſolution of the ſpaſm; that there is leſs feveriſhneſs, quickneſs of pulſe, and thirſt in tetanus; and above all, that there is little of that extreme mobility of feeling, and anxious, impatient, and apprehenſive ſtate of mind, which marks the hydrophobic condition.

There is another diſeaſe, *hyſteria*, which, in ſome of the many forms which it aſſumes, occaſionally puts on a hydrophobic appearance. The leading ſymptoms of this diſeaſe are often of a violently ſpaſmodic nature; and one of them, which has been conſidered as pathognomonic, the *globus hyſtericus*, conſiſts in a ſpaſmodic affection of the gullet, and is often connected with difficulty of ſwallowing. But the concourſe of ſymptoms in hyſteria, generally differs altogether from thoſe of rabies, and could lead to no miſtake, had not the error of regarding the *dread of water* as the eſſence of that diſeaſe been adopted. In conſequence of this error, and the improper application of the term *hydrophobia*, as the name of the diſeaſe, extreme confuſion has occurred in the hiſtory of canine madneſs.

Thus while ſome phyſicians, miſled by this name, have deſcribed caſes of *ſpontaneous* hydrophobia, *i. e.* hydrophobia ariſing without any obvious exciting cauſe; others have referred the origin of the diſeaſe to various cauſes, altogether different from each other. Dr. Ruſh, for inſtance, enumerates *twelve* cauſes of hydrophobia, beſides the bite of a rabid animal; among theſe are cold night air, worms, eating beech nuts, great thirſt, fear, hydrocephalus, and typhus fever. (See Med. Inq. and Obſ. vol. v. p. 213.) The truth is, that the ſymptom *hydrophobia* is ſo far from being peculiar to canine madneſs, that it occurs in a number of other diſeaſes; and, on the other hand, it is in ſome caſes ſaid to be actually *abſent* from the true rabies. A fatal caſe of canine madneſs is related by Hildanus, (p. 365. obſerv. 88.), in which there was no hydrophobia. And three caſes of the ſame nature are mentioned by Dr. Mead. (On Poiſons, p. 147.) But the number of diſorders in which a difficulty of ſwallowing, and a concomitant hydrophobia occurred, is very great. Mead, Morgagni, Plater, and others notice it as accompanying hyſteria. "I have known it," ſays the firſt named phyſician, "in the height of a violent hyſteric diſorder, to have continued for many hours, till the convulſive motions in the throat were quieted by proper medicines; and I remember a caſe, in which fits of a palpitation of the heart were attended with ſo great a degree of it, that it ſeemed not to differ from the true hydrophobia." (Loc. cit.) Boerhaave uſed to mention an inſtance of it accompanying a fever occaſioned by heat and fatigue, joined to the abuſe of ſpirituous liquors. It has been obſerved connected with various inflammatory and ſpaſmodic affections of the throat, gullet, and ſtomach. Thus Sauvages quotes one caſe, where it ſupervened to typhus; and another, where it accompanied the variolous ſore throat. (See Noſol. Method.) But the moſt remarkable caſes of this nature are to be found in the Edin. Medical Eſſays, (vol. i. p 222 and 227,) in which hydrophobia was produced by unuſual irritation in the ſtomach, without the moſt diſtant ſuſpicion of rabid poiſon. In one of theſe caſes there was violent inflammation of the ſtomach, the patient frequently ſpouted ſaliva from his mouth, and had all the horror at the ſight of water, which occurs in caſes of true rabies, where the difficulty of drinking has been experienced. Both theſe perſons recovered (See GASTRITIS.) The ſymptom hydrophobia, or *dread of water*, has alſo accompanied pleuriſy and peripneumony (ſee Ferriar's Med. Hiſt. and Refl. vol. iii. p. 24—26.); and the writer of this article once ſaw it connected with St. Vitus's Dance.

But farther, this ſymptom, the dread of liquids, unconnected with rabies, does not always ariſe from local irritation; it has been brought on by violent affections of the mind, in irritable and delicate habits, and terminated fatally. (See two caſes from Plater and Sauvages, quoted by Dr. Bardſley, in Mancheſter Tranſ. vol. iv. p. 470.) Dr. Percival has remarked, that it has ſometimes been brought on by the imagination alone; and Dr. Ferriar, in illuſtration of this remark, ſays, "I met with an inſtance of this kind lately, in which it was very difficult to prevent a perſon from rendering himſelf completely hydrophobic. Himſelf and his wife had been bitten by a dog which they ſuppoſed to be mad. The woman thought herſelf well, but the man, a meagre hypochondriacal ſubject, fancied that he had uneaſineſs in his throat, and that he could hardly ſwallow any thing. When he firſt applied to me, a medical friend who was preſent, aſked him whether he had any ſenſation of heat at the pit of the ſtomach. He anſwered in the negative, doubtfully; but, next day I found him in bed, complaining of *heat in the pit of the ſtomach*, difficulty of ſwallowing, tremors, and confuſion in the head. He continued to perſuade himſelf he was ill of rabies, and confined himſelf to bed, expecting death for near a fortnight. At laſt I remarked to him, that perſons who were attacked by rabies never ſurvived more than ſix days; this drew him out of bed, and he began to walk about. By a little indulgence of his fears, this might have been converted into a very clear caſe of *ſpontaneous hydrophobia*, and the patient would probably have died."

The uſe of the appellation hydrophobia, then, deduced from a ſingle ſymptom, which belongs to a variety of diſeaſes, evidently tends only to miſlead, as the reſpectable phyſician juſt quoted remarks, by diverting the attention of practitioners to ſuppoſed analogies, which have no other foundation than the abuſe of a word. To be correct, *we muſt preſerve the diſtinction* between *rabies*, and diſeaſes which are eſſentially different from it in their uſual appearance, and which only acquire an adventitious reſemblance to it under uncommon circumſtances. We may, therefore, reaſonably queſtion the exiſtence of ſuch a diſeaſe as *ſpontaneous* hydrophobia. "If thoſe caſes be analyzed," Dr. Ferriar remarks, "they will be found to belong to the claſs of hyſterical, febrile, mental, or ſpaſmodic diſorders, and by ranking them under their proper titles, we ſhall at once clear this ſubject from a great and accumulating maſs of error. By conſidering the matter in this point of view, we are alſo enabled to explain the contradictory reports hitherto ſo perplexing, on the effects of remedies in rabies. It is eaſy to perceive, that evacuant and antiſpaſmodic remedies would remove a difficulty in ſwallowing, occaſioned by inflammation or ſpaſm in the ſtomach or œſophagus; that bark and wine would cure it in caſes of typhus and low mania; and that opium and the cold bath would be ſucceſsful, when is it accompanied by tetanus." Vol. iii. p. 30. See alſo Hunter, in Tranſ. of a Society, &c. p. 203. Meaſe on Hydrophobia, p. 6—11.

Prevention and Cure.—As no remedy has been diſcovered which has any effect in the removal of this extraordinary diſeaſe, when its ſymptoms have commenced, the means of prevention have ever been deemed objects of the firſt importance. For this purpoſe numerous prophylactics have been propoſed from early times, and many are in general uſe, which are ſuppoſed to counteract or expel the poiſon, by their effects upon the conſtitution. Notwithſtanding, however, the teſtimony of diſcerning phyſicians, expreſſed in terms of the greateſt confidence, in favour of particular preventive medicines; upon fairly weighing the proofs of their efficacy, not one appears entitled to the ſmalleſt credit.

It will be almoſt ſufficient to enumerate the remedies which have been ſuggeſted for this purpoſe, without any comment. The abſurd jumbles of *theriacæ*, whether old or new, Mead admits to be unworthy of notice; and from this cenſure we cannot except the aſhes of river craw-fiſh, burnt alive upon copper, which Galen and Dioſcorides aver to be invariably ſucceſsful;—the roaſted liver of the mad dog;—the ſponge or excreſcence of the dog-roſe;—the famous aromatic opiate of Scribonius Largus;—the powder of tin with mithridate, ſo extolled by Mayerne, Grew, &c.;—nor even the *lichen-cinereus*, (aſh-coloured liver-wort,) or the *pulvis antilyſſus* (compoſed of this lichen and pepper), which Mead himſelf introduced into the pharmacopœia of the London college, and which he affirms he had never known to fail of ſucceſs, though he had uſed it a thouſand times. (See Mead on Poiſons, p. 158. et ſeq.—Boerhaave, Aphoriſm 1147, with Van Swieten's commentary.) So confident, indeed, was that learned phyſician in the powers of this drug, that he affirms, "I have often wiſhed, that I knew ſo *certain* a remedy in any other diſeaſe!" Another preventive, which was introduced from China by ſir George Cobb, and has been called the *Tonquin* medicine, has been equally extolled as an infallible prophylactic: this conſiſts of large doſes of *muſk* and native *cinnabar*. The Chineſe give it in the doſe of ſixteen grains of muſk, conjoined with a ſcruple of native, and the ſame quantity of factitious cinnabar, which, if it fail to procure ſleep and ſweating, is repeated in three hours. (See Hillary on the Diſ. of Barbadoes, p. 266.) But this medicine, like the preceding, has been found to fail altogether. There is another pretended ſpecific, which claims our attention chiefly becauſe it ſtood high in reputation for many years, and is even now ſcarcely laid aſide: this is the famous *Ormſkirk* medicine, prepared by Mr. Hill of that town. It has been too clearly proved, however, that this medicine is incapable of preventing the acceſſion of rabies in perſons bitten by rabid dogs. Dr. Fothergill was among the firſt to repreſent, from a very clear caſe, (that of Mr. Bellamy, Med. Obſ. and Inquiries, vol. v. art. 19.) that its virtues were not equal to its reputation; and other caſes have ſubſequently occurred, in which the diſeaſe enſued and terminated fatally, notwithſtanding the fulleſt uſe of the medicine. (See Dr. Babington's caſe in the Med. Records and Reſearches, Hamilton, vol. i. p. 165, &c.) Indeed, if the analyſis of Dr. Heyſham, which was repeated by Dr. Black, be correct, it would ſeem pretty evident *à priori*, that this celebrated Ormſkirk noſtrum could not poſſeſs any active properties; its principal ingredient being *chalk!* From the analyſis of this eminent profeſſor and his pupil, the whole compoſition is as follows; namely, half an ounce of powdered chalk, ten grains of alum, three drams of Armenian bole, one dram of the powder of elecampane root, and ſix drops of the oil of aniſe. (See Heyſham. Diſſ. Inaug. De Rabie Caniná, Edin. 1777.) After the failure of ſo many medicines, which have been reputed infallible, and after ſuch men as Dr. Mead could be deceived into the belief of ſuch infallibility, the writer of the article Dog, in this work, muſt expect that another "ſpecific" will be received by moſt readers with a great degree of ſcepticiſm, notwithſtanding the number of experiments which he alleges in its ſupport. This remedy conſiſts of a decoction of the freſh leaves of rue and of the tree-box, of each two ounces, and of ſage half an ounce. He avers that this medicine was given to ninety animals, of which only one went mad; and that about forty human perſons have taken it, of whom none ſuffered the diſeaſe. But we are diſpoſed to fear that this will be found liable to the ſame cenſure which is applicable to all the reſt.—"No one of them," to borrow the words of Dr. Ruſh, "has, I believe, done any more good, than the boaſted ſpecifics which have been uſed to eradicate the gout or to cure old age."

But how, it will be aſked, have theſe medicines obtained the credit which they have for a long time poſſeſſed? Probably, from ſome of the following circumſtances attending the bite. 1. The animal may have been enraged, but not diſeaſed. 2. He may have been diſeaſed, but not rabid. There is no doubt that *the diſtemper*, and other febrile diſorders of dogs, have been miſtaken for rabies. (See a paper of Dr. Jenner's on this ſubject, Medico-Chirurg. Tranſ. vol. i. p. 236.) 3. The ſaliva, when infectious, may have been ſo wiped off the teeth in paſſing through the clothes of the perſon bitten, as not to have entered the wound. This is rendered extremely probable by the circumſtance that bites in the face have been moſt frequently followed by hydrophobia. But 4th, and above all, it is now a well aſcertained fact, that of thoſe who have been bitten by dogs, actually rabid, a very ſmall number have been afterwards ſeized with hydrophobia, whatever treatment was adopted, or even when nothing whatever was done with a preventive view. It may be added, however, that, as mental impreſſions occaſionally both excite and cure hydrophobic ſymptoms, and eſpecially the ſuppoſed incipient ſymptoms, ſo any of theſe noſtrums, in which the patient placed confidence, would remove theſe imaginary threatenings of the diſeaſe. See Dr. Percival's Letter to Dr. Haygarth, in the London Med. Journal for 1789, vol. x. p. 300.

We are induced to notice another prophylactic, chiefly from the antiquity of its origin, and the general credit which it obtained even to recent times: this is the employment of cold-bathing. Celſus firſt mentions this remedy, but recommends it principally as a cure; and apparently upon theoretical principles, though he calls it *unicum remedium.* (De Med. lib. v. cap. 27.) For, as the patient both deſires liquids and fears to drink, he adviſes that he be thrown unawares into a fiſh-pond; and, if he cannot ſwim, that he be ducked ſeveral times and taken up again, and, if he can ſwim, that he be forcibly immerſed, and compelled to ſwallow water, "ſo that his thirſt and dread of water may be cured together." From this abſurd notion, apparently, the practice of half-drowning perſons bitten by rabid animals, in modern times, has ariſen: but ample experience has demonſtrated that the practice is not leſs frivolous than the theory upon which it was built; and among thoſe who have undergone the operation of immerſion, whether by mere dipping, or to the extent of "drowning and recovering by turns," as Mead calls the ancient practice, an equal proportion have been ſubſequently attacked with rabies, as among thoſe who have not been ſubmitted to this mode of treatment.

Notwithſtanding the inefficacy of all the alleged antidotes to the poiſon of a rabid animal, there ſtill remains a method by which it is probable that the occurrence of hydrophobia may be effectually prevented: this conſiſts in the local treatment of the wound occaſioned by the bite. As the ſubſequent malady originates from the operation of the poiſon, introduced with the ſaliva of the rabid animal, any expedient by which the poiſon could be deſtroyed or removed, previous to its operation on the conſtitution, would of courſe ſecure the individual from its effects. Upon this principle, the ancients recommended the enlargement of the wound by inciſion, the application of a cupping-glaſs, and of the actual cautery, and the maintenance of a diſcharge for many days, (ſee Celſus, lib. v. cap. 27. Galen. de Ther. lib. i. cap. 16.) a practice which has been followed by more modern practitioners. Hildanus Obſ. Cent. i. Obſ. 87. Mead, loc. cit. p. 156.

In order to fulfil this indication by the local treatment of the wound, the following points appear to deſerve attention; 1ſt. The removal of the poiſon by waſhing the parts ſimply; 2dly. The deſtruction of the part by *cauſtic;* and, 3dly. The *exciſion* of it by the knife. The firſt meaſure, or ablution of the wound, has been ſtrongly recommended by Drs. Haygarth and Percival, to be commenced immediately after it may have been inflicted. The practice is ſafe, and may poſſibly be beneficial, when thus early reſorted to; it may alſo be adviſable, where the wound has been inflicted in the face, near the eye, or near ſome large blood-veſſel; or where the patient reſiſts all ſolicitation to ſubmit to the knife; or where there may be ſo little probability of the madneſs of the dog, as to render it unjuſtifiable to ſubject the patient to preſent pain, and future deformity. (Percival, in Lond. Med. Journal, vol. x. p. 308.) This waſhing, however, muſt be conducted with the moſt perſevering attention, in bad caſes, for ſeveral hours, firſt by an abundant effuſion of cold water, and afterwards of warm water; "a continued ſtream of it, poured from the ſpout of a tea-kettle, held up at a conſiderable diſtance, is peculiarly well adapted to this purpoſe. If the canine poiſon infuſed into a wound were of a peculiar colour, as black like ink, we ſhould all be aware that plenty of water and patient diligence would effectually waſh out the dark dye; but this could not be expected by a ſlight and ſuperficial ablution." (Haygarth, ibid. p. 297.) Whence Dr. Haygarth adviſes the plan of colouring the wound with ſaliva tinged with ink, after it has been carefully waſhed; and, after a few hours, to waſh out the ſtain; by which we obtain a ſort of ocular proof of the complete ablution Dr. J. Hunter remarks, that as there may be caſes in which inſurmountable objections to more effectual ſteps may render this method worthy of trial, it would probably be more ſucceſsful, if, after waſhing copiouſly with cold water, the cauſtic alkali was to be added to the water, in ſuch proportion as the part could eaſily bear, and the waſhing to be continued with this for ſome time. Tranſ. of a Society, &c. before quoted.

The ſame author obſerves, that *cauſtics* may be admiſſible in ſome caſes, when the knife cannot be uſed; and though they have failed in certain inſtances, yet that was probably owing to their not having been applied to all the infected ſurfaces: and he ſuggeſts the propriety of employing for this purpoſe the cauſtic vegetable alkali in a ſolid form, becauſe it acts more ſpeedily, and alſo more completely deſtroys and diſſolves all animal ſubſtances. It appears that this cauſtic ſubſtance has actually been employed for many years by Mr. Simmons, and the other ſurgeons at the Mancheſter infirmary, with uniform ſucceſs; in upwards of forty caſes, in which Mr. Simmons applied the *kali purum*, or cauſtic potaſh, to the bitten parts, no hydrophobia enſued. Ferriar's Med. Hiſt. &c. vol. iii. append. p. 221.

The only certain means, however, hitherto employed as a preventive of the diſeaſe in queſtion, are to be found in the *exciſion* of the parts wounded; and, therefore, whenever the parts can be cut out, it ought always to be done. This operation muſt be performed with a bold hand, and the utmoſt care muſt be uſed to effect the removal of every part with which the dogs teeth may have come in contact; for the ſmalleſt portion left might produce the diſeaſe. It becomes, therefore, neceſſary for the operator to examine accurately every portion of the wound, and to aſcertain to what depth, and in what direction, the teeth may have penetrated, keeping in his mind the ſituation of the parts in the act of biting, in which the ſkin and fleſh are pinched up, and therefore put out of their natural poſition, before the teeth penetrate them. He ſhould again cautiouſly examine the wound, after the exciſion has been made, in order to aſcertain that every part lacerated by the teeth has been removed,

An important queſtion here ariſes, in regard to the period after the bite, at which the operation of exciſion may be performed with ſecurity to the patient. This can only be ſolved after a long and cautious experience, which, on this ſubject is rendered uncertain and difficult to be obtained, by the numerous failures of the poiſon to excite the diſeaſe, independently of any preventive meaſures. And, in a theoretical point of view, it may ſeem to involve another queſtion, which has been much diſcuſſed; namely, whether the poiſon produces its deleterious effects on the conſtitution, in conſequence of being taken up by the abſorbents, and carried into the circulation; or whether it acts merely upon the extremity of the nerves of the part, and through the medium of them influences the reſt of the nervous ſyſtem. Such a queſtion, however, is perhaps beyond our deciſion, and is not neceſſarily connected with the practical one previouſly ſtated. We may juſt mention, that, in the caſe related by Dr. Marcet (Medico-Chirurg. Tranſ.), in one of thoſe deſcribed by Dr. Babington, and in another, detailed in the Medical Communications, vol. ii. the pain, originating in the bitten part, at the commencement of the hydrophobia, ſeemed to follow the courſe of the nerves, rather than that of the abſorbents, and was not connected with any affection of the axillary glands, in the two former caſes, in which the bite was in the hand, nor of the inguinal glands in the latter, where the bite was in the leg. Mead imagined that, as the poiſon "*immediately* affects the nervous liquor, the miſchief muſt have taken place before any applications of this kind can be made." But while, on the one hand, we have inſtances on record, in which the exciſion was performed with ſucceſs many hours, and even four or five days, after the bite; ſo we obſerve, on the other, that the poiſon appears to lie long dormant in the part, and only to affect the ſyſtem, after the new inflammation or pain occurs, which gradually extends to the centre. Whence the moſt rational concluſion appears to be that, which Drs. Cullen, Babington, John Hunter, Marcet, and others have adopted, that the poiſoned part might be removed not only many days, but many weeks after the bite, or, in ſhort, *at any time antecedent to the appearance of the ſymptoms* juſt mentioned, which indicate the paſſage of the poiſon into the ſyſtem and the conſequent impending rabies. Analogy, Dr. Babington remarks, as well as obſervation, ſeems to lead to this inference. "For it is univerſally underſtood, that, in other diſeaſes communicable by inoculation, that is to ſay, by the local application of the infection or poiſon producing them, there is a ſpecific period, prior to which the diſorder may be at any time prevented, by the removal of that part where the matter was at firſt introduced." (Med. Records and Reſearches, p. 127.) See alſo Mémoires de la Soc. Roy. de Médecine de Paris, where there are many inſtances of local treatment being effectual in preventing the diſorder in queſtion, at the expiration of many days.

An account of the *treatment of hydrophobia*, when the diſeaſe has already appeared, will not occupy much of our attention; as it muſt be a mere enumeration of fruitleſs expedients, and of medicines altogether deſtitute even of palliative influence. Nevertheleſs, it is well that we ſhould be acquainted with the unſucceſsful indications, which different practitioners have heretofore purſued, and with the active agents, which they have diligently, but in vain, employed; in order that we may not be occupied in uſeleſs repetitions in future. The want of preconcerted method, indeed, in inveſtigating the cure of this diſeaſe, is very apparent in moſt of the writers on the ſubject, and is probably one of the principal cauſes of the little progreſs that has been made in that important inquiry.

Among the various articles of the Materia Medica, that have been adminiſtered to perſons affected with hydrophobia, *opium* would ſeem, from analogy, to be peculiarly adapted to relieve the ſymptoms; eſpecially the extreme irritability of mind and body, the complete loſs of ſleep, and the convulſions. Accordingly it has been adminiſtered in various forms, in ſome caſes, to an extent that is ſcarcely conceivable *à priori*, and yet without having been found to do any evident good. In a caſe related by Dr. Vaughan, fifty-ſeven grains of ſolid opium were taken in the courſe of fourteen hours, in addition to half an ounce of liquid laudanum, which was injected in an enema: in another inſtance, attended by Dr. Wavell, four grains of opium were ſwallowed every hour, until fifty-four grains had been taken, beſides ten grains in an enema: and in a third, under the direction of Dr. Babington, the enormous doſes of twenty-five grains, and *half a drachm of ſolid opium*, were repeated at ſhort periods, ſo that in *eleven hours* no leſs than *a hundred and eighty grains of opium were taken without any benefit, and even without producing any ſleep.* (See Med. Records and Reſearches.— Vaughan on Hydrophobia, Meaſe on the ſame, &c.) After ſuch evidence of its inefficacy, we may almoſt affirm, with Dr. J. Hunter, "that it can be only imputed to the want of method and order above-mentioned, that this medicine ſtill continues to be given in almoſt every caſe of this diſeaſe."

Blood-letting has been a favourite expedient from the earlieſt records of the malady, and has been frequently employed to a very great degree. Boerhaave conſidered the diſeaſe as highly inflammatory, and Mead ſuggeſted the uſe of early and copious bleeding, till fainting was produced; Fothergill, and others of a later time, employed it freely; and Dr. Ferriar, deeming an inflammatory congeſtion in the lungs an eſſential part of the diſeaſe, as well as a ſimilar condition in the contents of the cranium, ſays that "blood ſhould be drawn from the jugular veins, and perhaps the head and lungs would be beſt relieved by the repetition of bleedings." Dr. Nugent's caſe is quoted as an example of the efficacy of blood-letting in the diſeaſe; but that caſe is a queſtionable example of rabies; and both from the ſeries of preceding ſymptoms of declining health and ſpirits, and from the courſe of the diſorder itſelf, appears to be rather referrable to hyſteria than to rabies. In one of the caſes, deſcribed by Dr. Babington, blood-letting was practiſed without the ſmalleſt benefit; and in the other it appeared to do harm.

Cold bathing, or the *affuſion of cold water* over the body of the patient, has been frequently employed as a curative, as well as a preventive meaſure. Celſus recommended it only when the hydrophobia had appeared; and Van Helmont affirms, that he cured an old man by ſubmerſion in ſalt water, (Ortus Medicinæ.) But in the hands of Boerhaave, Mead, Vaughan, and many others, this expedient has been as inert as any of the preceding. (See Mead, loc. cit. p. 173. 182. Hamilton, vol. ii. p. 14.) In tetanus the cold affuſion has of late been found beneficial; and it is probable that the ſpaſmodic affections, cured in this manner, were of a tetanic nature, and not rabies.

The *warm bath* has proved equally inert; and the free adminiſtration of *mercury*, both internally and by friction, has evinced no greater powers. The uſe of *oil*, which was recommended by Celſus and Cælius Aurelianus, and ſuggeſted more ſtrongly from its beneficial effects in caſes of poiſonous bites inflicted by inſects and reptiles, was revived a few years ago by Dr. Shadwell, of Brentwood (ſee Memoirs of the Med. Soc. of London, vol. ii.); and it has been employed in the way of a bath, by friction, and alſo taken internally; but it has proved altogether inert, and ſome patients, immerſed in an oil bath, have appeared to have their ſufferings increaſed. (See Hamilton, vol. ii. p. 54. 56.) In one caſe, indeed, the patient is ſaid to have recovered: but the courſe of the ſymptoms, and the duration of the diſeaſe, did not ſtrictly accord with the ordinary appearance and brevity of hydrophobia. The employment of various antiſpaſmodics, as *camphor*, *aſſafœtida*, *caſtor*, &c.; of the metallic tonics, as the oxyd or flowers of *zinc*, the *cuprum ammoniatum*, &c. (largely adminiſtered in Dr. Vaughan's caſes); and of *ſudorifics* and *diuretics*, (ſee Mead,) of *vinegar*, of *cantharides*, of *bliſters*, and *rubefacients*, has been attended with the ſame failure as that of the medicines already detailed.

Such being the inadequacy, then, of all the expedients hitherto adopted for the cure of rabies, and ſuch the difficulty of acquiring any accurate notion of the nature and ſeat of the diſeaſe, even by the moſt accurate anatomical inveſtigation, we acknowledge ourſelves altogether unable to ſuggeſt any ſyſtem of treatment, which might be particularly worthy of trial, in future caſes of the diſeaſe. Dr. John Hunter propoſes a trial of *arſenic*, which is the principal ingredient in a pill, uſed in the Eaſt Indies, and ſaid to be a ſpecific againſt the poiſon of ſerpents, and alſo againſt the bite of a mad dog. He alſo ſuggeſts the probability of diminiſhing the effects of the poiſon, (which is apparently confined to the part bitten, until the ſymptoms actually begin,) by making numerous and deep ſcarifications where the wound was, and applying cupping glaſſes repeatedly; by uſing ligatures; or by applying ice or a freezing mixture to the part, ſo as to benumb it, and to arreſt for a time all motion, and of courſe that of the abſorbent veſſels. Dr. Ruſh believes, that "the diſeaſe produced in the human ſpecies by the bite of a rabid animal is a *malignant* fever;" and that the great debility, which enſues in its courſe, is the reſult of inflammatory action, and to be removed only by early and copious blood-letting, according to circumſtances of the caſe, the ſtrength and age of the patient, the ſtate of the pulſe, &c.; and Dr. Ferriar has, like Dr. Ruſh, experienced a ſimilar change in his opinions, both having originally conſidered the debility as primary, and not as the reſult of increaſed excitement; and both have decided to treat future caſes of the diſeaſe upon that principle, by depletion, and evacuants.

HYDROPHORIA, formed of *υδωρ*, *water*, and *φερω*, *I bear*, in *Antiquity*, a feaſt, or funeral ceremony, held among the Athenians, and people of Ægina, in memory of thoſe who periſhed in the deluge of Deucalion and Ogyges.

HYDROPHTHALMIA, from *ὑδωρ*, *water*, and *οφθαλμος*, *the eye*, ſignifies in *Surgery*, a morbid enlargement of the eye, ariſing from a preternatural increaſe in the quantity of the aqueous and vitreous humours.

In certain caſes, it is the aqueous humour which collects in this manner, and then the diſeaſe is principally ſituated in the anterior and poſterior chambers of the eye. In other inſtances, the vitreous humour is chiefly concerned, not merely accumulating in a preternatural degree, but alſo in general loſing its wonted conſiſtence, and becoming thinner and more watery. In the commencement of the diſorder, the patient experiences no complaints, excepting a ſenſe of tenſion about the eyeball, a kind of ſtiffneſs when the organ is moved, and a diminution in the acuteneſs of viſion. The globe of the eye by degrees acquires a ſtate, in which its enlargement is quite manifeſt, its feel harder than natural, the pupil dilated, the motion of the iris feeble, the impairment of ſight much more ſerious, and the painful ſenſation of tightneſs about the affected organ a great deal more diſtreſſing. At length, the eyeball attains ſuch magnitude, that it projects out of the orbit, and the patient is afflicted with complete blindneſs.

The pain now becomes exceſſively ſevere, extending all over one ſide of the head, and frequently affecting the teeth, ſo as to diſturb the patient's reſt day and night. As the eyelids can no longer be cloſed, the tears fall over the cheek, and the friction of the eyelaſhes againſt the eye make this latter part inflame and ulcerate. The caſe, when it has made ſuch progreſs, often receives the name of buphthalmos, the eyeball being, indeed, in many inſtances, as large as a hen's egg.

When the diſeaſe is principally ſituated in the anterior and poſterior chambers, the cornea, not only becomes diſtended forwards away from the iris, but undergoes a conſiderable enlargement in diameter, ſo that the anterior chamber is frequently of extraordinary ſize. When the vitreous humour has the chief ſhare in the diſorder, no increaſe in the dimenſions of the cornea is obſervable, and the iris, inſtead of being at a greater diſtance than uſual from this membrane, is often approximated to it.

We are then to underſtand by the term hydrophthalmia, a dropſical enlargement of the eye, and not a ſwelling, or protruſion, of this organ from other cauſes, a caſe to which ſurgical writers aſſign the name of exophthalmia. See Exophthalmia.

No doubt, the cauſes of the dropſy of the eye are as numerous as thoſe which give riſe to the ſame diſeaſe in other parts of the body. But, even the moſt credulous writers are willing to own the difficulty of aſcertaining ſuch cauſes in a clear and ſatisfactory manner. If we can truſt the aſſertions of Richter, all the known cauſes of hydrophthalmia have the immediate effect of interrupting the due abſorption of the humours of the eye, and act in this manner, either by producing obſtruction, weakneſs, or irritation. The celebrated oculiſt, Janin, fancied, that in the healthy ſtate there was a continual excretion of the aqueous humour through the pores of the cornea, and that the dropſy of the eye was principally owing to a cloſure of theſe pores, and a conſequent ſtoppage to the exudation of the above mentioned fluid. Scarpa, in criticiſing this opinion, maintains, with much reaſon, that its adherents evince their imperfect acquaintance with the activity of the abſorbent ſyſtem in the animal economy. Beſides, as Richter has well obſerved, the cornea, in moſt caſes of hydrophthalmia, retains its tranſparency, and is to all appearances free from diſeaſe ; while, in the leucoma, where it is completely opaque, indurated, and thickened, and where, in all probability, its pores are entirely impervious, we find not the leaſt tendency to hydrophthalmia.

The dropſy of the eye is very difficult of cure, and, indeed, frequently incurable. When the diſorder has once made ſuch progreſs, as to have entirely deprived the patient of ſight, the caſe no longer admits of a complete recovery. Nothing can be more obvious, than the impoſſibility of rectifying the injury, which the interior parts of the eye muſt ſuffer from much diſtention; and hence, if a perfect cure can ever be effected, it is only when the ſurgeon has it in his power to hinder the exceſſive enlargement of the eyeball. The diſeaſe may even increaſe in ſuch a degree as to prove fatal. (Louis, Mem. de l'Acad. de Chir. tom. 5. Terras, Journ. de Médecine, tom. 45.) In caſes of this aggravated deſcription, the bones of the orbit are in general carious. A radical cure of hydrophthalmia is reckoned a very difficult thing to accompliſh, for, when the complaint has been removed it generally returns, and the relapſes are not eaſily prevented. The cure is equally difficult, whether the diſeaſe be chiefly occaſioned by the aqueous, or the vitreous humour.

In the treatment, it is an indication of the higheſt importance to trace, and remove the cauſes of the diſeaſe. This is the only way to effect a radical and laſting cure. In proportion as the cauſe is removed, the preternatural accumulation of fluid in the eye ſpontaneouſly diminiſhes, and does not take place again. Authors inform us, that the ſame cauſes, which produce dropſy in other parts, may alſo produce it in the eye. However this may be, certain it is, that practitioners are ſeldom enabled to aſcertain the cauſe of the complaint with preciſion, and they are, therefore, compelled to treat the caſe on empirical principles. We learn from Scarpa, that hydrophthalmia is ſometimes preceded by blows on the eye, or adjoining temple ; ſometimes, by an obſtinate internal ophthalmy; that, in certain inſtances, it is preceded by no inconvenience, except an uneaſy ſenſation of tumefaction and diſtention in the orbit, a difficulty of moving the eye-ball, and an impairment of ſight; and, laſtly, that it is occaſionally preceded by none of theſe cauſes, and no other manifeſt one whatſoever, eſpecially when the complaint occurs in young children, from whom no information can be obtained.

The ſurgeon, who acts empirically, merely endeavours to procure a diſperſion, or removal, of the preternatural accumulation of fluid, and though he afterwards generally employs tonics to obviate the weakneſs, which he ſuppoſes to have been produced in the eye by diſtention, and to be likely to bring on a return of the diſeaſe, yet, as he does nothing towards the removal of the original cauſe, he ſeldom ſucceeds in preventing a relapſe.

The internal remedies, which have been adminiſtered with a view of diſperſing the redundance of fluid in the eye, conſiſt of emetics, purgatives, diaphoretics, and diuretics, and the ſelection is regulated by the particular conſtitution of the patient. Sometimes one claſs of medicines have powerful effects, while the operation of another is quite inefficacious; and a ſhort trial of the various kinds will ſoon inform the ſkilful ſurgeon which ought to be preferred. Nitre and ſquills, juniper berries in powder, or decoction, &c. are mentioned by authors as proper diuretics. The digitalis purpurea is alleged to have proved beneficial. With regard to purgatives, the kali tartarizatum is ſaid to be the beſt in the generality of inſtances. In obſtinate caſes, emetics are frequently of conſiderable ſervice, and, even when unaided by other means, often diſperſe the fluid collected in dropſical diſeaſes. They alſo not unfrequently promote the efficacy of diuretics and purgatives, and the latter remedies, after appearing to be ineffectual, are often rendered productive of the deſired effect, by being preceded by emetics.

When none of the foregoing medicines anſwer the purpoſe, reſolvents may occaſionally be preſcribed with advantage. Mercurial and antimonial preparations are particularly recommended. The proper plan is to give them alternately with doſes of purgative and diuretic medicines. The patient may take a grain of calomel, ten grains of cicuta in powder, and a grain of ſulphur auratum antimonii. When there is any reaſon for ſuſpecting that the dropſy of the eye is owing to an irritation, acting on that organ, opium, caſtor, and ſaffron are recommended, in conjunction with evacuants. When debility is thought to have a ſhare in bringing on the diſeaſe, bark, ſteel, and aromatic bitters, may be ordered together with diuretics.

Beſides theſe internal remedies, ſeveral topical means have been tried, for the purpoſe of promoting the abſorption, or diſperſion of the redundant fluid in the eye. 1. Bliſters applied either behind the ears, or over the eyebrows, and kept open a conſiderable time. 2. Iſſues and ſetons in the arms, or nape of the neck. 3. Sternutatories. Richter menmentions an inſtance of inveterate hydrophthalmia being cured in a few days, by the patient introducing every now and then into his noſtrils a kind of ſnuff thus compoſed :

hellebori albi gr. x. herb. majoran. ℈iv. miſce. 4. Electricity ſometimes appears to have done good. 5. Bathing the eye with emollient collyria was recommended by Janin, under the idea, that this method would tend to open the pores of the cornea, ſo as to let the aqueous humour exude. 6. Spirituous and ammoniacal vapours to excite the action of the abſorbents of the eye. 7. Applications, containing borax, muriate of ammonia, &c.

It is not to be diſſembled, that, in the treatment of the preſent diſeaſe, all internal and external remedies are, for the moſt part, quite unavailing. Scarpa acknowledges, that he has never yet met with a ſingle well-detailed hiſtory of a dropſy of the eye being cured by ſuch internal medicines as are moſt recommended by the beſt ſurgical authors. With regard to externals, he has learnt from his own experience, that when the diſorder is manifeſt, aſtringent and corroborant collyria, as well as compreſſion of the protuberant eye, are highly prejudicial. In this circumſtance, a ſeton in the nape of the neck, bathing the eye in a lotion of mallows, and applying a plaſter compoſed of this plant, have enabled him to calm, for a time, the tenſe and painful ſenſation generally experienced in the orbit, and about the temple and forehead. But Scarpa aſſures us, that as ſoon as the eyeball begins to project from the orbit, beyond the eyelids, there is no means of oppoſing the grievous dangers, likely to be induced by the diſeaſe, except an operation, which conſiſts in letting out the ſuperabundant humours of the eye by an inciſion, and afterwards cauſing the interior of the organ to inflame and ſuppurate, ſo that the eye may gradually ſhrink within the orbit, and heal. Were the operation deferred, the patient would be left to ſuffer frequent attacks of ophthalmy, and to run the riſk of ulceration taking place in the eyeball and ſubjacent cheek: nay, what is worſe, the diſeaſe is liable to degenerate into carcinoma.

The operation, which, until lately, has been generally adviſed for the relief of hydrophthalmia, is, what has been named, paracenteſis oculi. When the aqueous humour is ſuppoſed to be too abundant, certain authors direct us to puncture the cornea, at a little diſtance from its edge with a lancet, or cataract-knife. When the vitreous humour is principally concerned in the diſeaſe, they tell us to proceed as in the extraction of the cataract, divide one-half of the cornea, open the cryſtalline capſule, and preſs out, together with the lens, a ſufficient quantity of the vitreous humour to reduce the eyeball to its natural ſize. In doing this, conſiderable caution is neceſſary; for, too much of the vitreous humour is apt to be loſt, eſpecially when it is preternaturally liquid, and a permanent and irremediable collapſe of the eye may even happen.

The apprehenſion of ſuch an event introduced the plan of puncturing the eyeball with a very ſmall trocar, at the diſtance of about two or three lines from the margin of the cornea, and thus diſcharge as much of the humours as neceſſary.

The redundant contents of the eye may, indeed, be evacuated by an operation; but there is greater difficulty in preventing a freſh accumulation of fluid, and the diſeaſe generally returns. The operation, when done only once, promiſes ſome chance of durable benefit, if the ſurgeon perform it in an early ſtage of the caſe. Benjamin Bell met with ſuch ſucceſs. Nuck alſo effected a radical cure by repeating the operation a certain number of times. We are not then to relinquiſh all hope, even though the diſorder may recur. But, one thing ſeems now to be quite eſtabliſhed, namely, the impoſſibility of accompliſhing a perfect cure, and reſtoring the original integrity of the eye, when once this organ has ſuffered ſuch diſtention, that the function of viſion is deſtroyed.

If the ſurgeon prefers letting out the redundant quantity of the humours in one of the foregoing ways, an endeavour is afterwards to be made to improve the tone of the eye with corroborant applications. The eye may be bathed with cold water, a decoction of oak bark, or any ſpirituous aromatic collyrium.

When the diſeaſe has attained ſuch a degree, that the ſight is entirely loſt, and the eyeball diſtended far above its natural ſize, it is beſt to give up all idea of attempting a radical cure; the humours may be diſcharged, and an artificial eye afterwards worn.

Scarpa places little reliance in the paracenteſis oculi as a means of effecting a permanent cure of hydrophthalmia. Indeed, he maintains, that it can never ſucceed, unleſs the puncture, made by the trocar, excite inflammation and ſuppuration of the interior of the eye. The method recommended by this eminent writer, is to remove a circular piece of the centre of the cornea, about three lines in diameter. Thus, an opening is made, which at once ſerves for the diſcharge of the humours, and to excite the requiſite degree of inflammation within the eye. The inciſion ſhould on no account be made in the ſclerotica.

The ſight being irrecoverably loſt, Scarpa adviſes ſurgeons to introduce a ſmall biſtoury acroſs the apex of the cornea, at one line and a half from the central point of this membrane, whether affected with opacity or not. The little ſemilunar flap is then to be raiſed with a pair of forceps, and the inciſion continued into a complete circle by directing the edge of the knife upwards. Through the circular aperture, thus made in the middle of the cornea, the ſurgeon is gently to preſs out as much of the ſuperabundant humours of the eye as is requiſite to leſſen the eyeball, and make it return into the orbit, ſo as to admit of being covered by the eyelids.

Scarpa recommends merely applying a pledget of dry lint, and a retentive bandage, till inflammation begins, which generally happens about the third or fifth day. Such remedies are now to be employed as appear beſt calculated to moderate the inflammation; and a bread and milk poultice is to be applied to the eyelids, and changed every two hours. When, on the commencement of inflammation, the eyeball ſwells ſo conſiderably, as to project from the orbit again, the prominent part is to be covered with a liniment of oil and wax, or the yolk of an egg mixed with ſome oleum hyperici. Either of theſe dreſſings is to be laid under the bread and milk poultice. In proportion as the internal ſuppuration of the eye begins, the ſwollen ſtate of this organ undergoes a gradual diminution.

When the removal of a piece of the cornea, to the extent above ſpecified, fails to excite a mild inflammation and ſuppuration of the interior of the eye by the fifth day, Scarpa adviſes us either to expoſe the eye to the air, or to cut away a little of the whole edge of the opening already made in the cornea, ſo as to bring on the kind of inflammation and ſuppuration eſſential to the cure. Scarpa ſulle principali malattie degli occhi, cap. 18.

The late Mr. Ford introduced a ſeton through the eyeball, for the purpoſe of leſſening the ſize of the organ when affected with hydrophthalmia. Medical Communications, vol. i.

After operating for the relief of the preſent affliction, a fungus occaſionally grows out of the internal part of the eye. Such an excreſcence was, in one inſtance, deſtroyed by the external employment of belladonna. (Terras, Journal de Médécine, tom. 45.) But in caſe this or other means fail in preventing the reproduction of the fungus, the ſurgeon is called upon to recommend the entire extirpation of the eye. See Eye. *Extirpation of.*

HYDROPHTHALMION, from ὕδωρ, *water*, and ὀφθαλμος, *the eye*, a ſwelling which ſometimes happens juſt under the eye, in dropſical and cachectic habits.

HYDROPHYLACIA, of ὕδωρ, *water*, and φυλαττω, *I keep*; a word uſed by Kircher, and ſome others who have written in the ſame ſyſtem, to expreſs thoſe great reſervoirs of water which he places in the Alps, and other mountains, for the ſupply of the rivers which run through the ſeveral lower countries. This he makes to be one of the great uſes of mountains in the economy of the univerſe.

HYDROPHYLAX, in *Botany*, from ὕδωρ, *water*, and φυλαξ, *a guardian*, or *keeper*, probably from the circumſtance of its being always found inhabiting the ſea ſhore.—Schreb. 68. Linn. Suppl. 14. Willd. Sp. Pl. v. 1. 581. Mart. Mill. Dict. v. 2. Juſſ. 210. Lamarck Dict. v. 3. 156. Illuſtr. t. 76. (Sariſſus; Gærtn. t. 25.) Claſs and order, *Tetrandria Monogynia*. Nat. Ord. *Stellatæ*, Linn. *Rubiaceæ*, Juſſ.

Gen. Ch. *Cal.* Perianth of one leaf, erect, ſuperior, permanent, divided into four, ovate, acute, bordered, ſomewhat fleſhy ſegments. *Cor.* of one petal, funnel-ſhaped; tube longer than the calyx; limb angulated, divided into four ovate, revolute ſegments; throat bearded. *Stam.* Filaments four, inſerted at the ſummit of the tube, decurrent, erect, longer than the corolla; anthers ſomewhat ſpear-ſhaped. *Piſt.* Germen oblong, inferior; ſtyle thread-ſhaped, curved; ſtigma bifid. *Peric. Berry* dry, ovate, compreſſed, having three ribs on each ſide, the middle one higheſt, with an attenuated margin, a little incurved, fungous, two-celled, with a tranſverſe partition. *Seeds* ſolitary, oblong, triangular, roughiſh, having two furrows on the inner ſide.

Eſſ. Ch. Corolla a funnel-ſhaped petal. Calyx four-cleft. Capſule angulated, of two cells, with a tranverſe partition. Seeds ſolitary.

1. *H. maritima.* Linn. Suppl. 126. (Sariſſus anceps; Gærtn. 118. t. 25. f. 4.)—Found by Kœnig on looſe ſand by the ſea, near Guduluhr, in the Eaſt Indies.—This is the only ſpecies known. It has the habit and appearance of *Arenaria marina*, but is larger.—*Root* ſimple, thread-ſhaped, red, fleſhy, ſweet. *Stem* creeping, ſmooth, coloured, jointed, very long, furniſhed with obtuſe, membranaceous, permanent ſheaths. *Leaves* oppoſite, ſpreading, ovate, acute, entire, fleſhy, ſhining, interſperſed with ſmall, whitiſh, pellucid tubercles; leaf-ſtalks ſhort, ſheathing the ſtem, and becoming, when the leaves fall, permanent ſheaths. *Flowers* axillary, uſually in pairs, but not oppoſite, erect, of a pale blue colour. *Anthers* blue.

HYDROPHYLLUM, from ὕδωρ, *water*, and φυλλον, *a leaf*, expreſſive of an aquatic leaf, but Tournefort cenſures this appellation, ſaying the plant grows in a rich, but not very watery ſoil. Miller conjectures that M. Morin gave the genus this name becauſe, in ſpring, water is uſually found in the cavity of its leaves.—Hence its Engliſh appellation, Water-leaf.—Linn. Gen. 83. Schreb. 109. Tourneſ. t. 16. Willd. Sp. Pl. v. 1. 814. Mart. Mill. Dict. v. 2. Ait. Hort. Kew. v. 1. 197. Juſſ. 129. Lamarck Dict. v. 3. 157. Illuſtr. t. 97. Gærtn. t. 110.—Claſs and order, *Pentandria Monogynia*. Nat. Ord. *Borragineæ*, Juſſ.

Gen. Ch. *Cal.* Perianth ſcarcely ſhorter than the corolla, ſpreading, permanent, of five deep, awl-ſhaped ſegments. *Cor.* of one petal, campanulate, cloven into five, erect, obtuſe, emarginate ſegments; nectary, a chink cloſed by two longitudinal converging plates, faſtened to the petal, within the middle of each ſegment. *Stam.* Filaments five, awl-ſhaped, longer than the corolla; anthers incumbent, oblong. *Piſt.* Germen ovate, pointed; ſtyle awl-ſhaped, the length of the ſtamens; ſtigma bifid, acute, ſpreading. *Peric.* Capſule globoſe, of one cell and two valves. *Seed* ſolitary, round, large.

Eſſ. Ch. Corolla bell-ſhaped, having five, longitudinal, honey-bearing ſtreaks on the inſide. Stigma bifid, capſule globoſe, two-valved.

1. *H. virginianum.* Linn. Sp. Pl. 208. Lamarck. Illuſtr. t. 97. f. 1.—"Leaves pinnatifid."—Native of Virginia and Carolina, on a moiſt boggy ſoil; flowering in May and June. A hardy herb, whoſe *root* is fibrous, and ſpreading. *Leaves* riſing from the root on footſtalks, indented on their edges, veiny, of a ſhining green. *Flowers* alſo coming from the root, hanging down in looſe cluſters, rather inconſpicuous. *Seeds* irregularly ovate and angular, elegantly reticulated with very minute excavations, yellowiſh white.

2. *H. canadenſe.* Linn. Sp. Pl. 208. Lamarck Illuſtr. t. 97. f. 2.—"Leaves lobate-angular."—Native of Canada, and flowering in May.—Very ſimilar to the laſt except in foliage, and in this reſpect *H. canadenſe* is not unlike the *Acer* or Maple, for its leaves are half five-lobed, ſmooth, with the lobes acute, ſlightly toothed, and having a ſinus at the inſertion of the footſtalk.

Theſe plants are very hardy, and ſhould be placed in a moiſt rich ſoil.

3. *H. appendiculatum.* Michaux. Boreal.-Amer. v. 1. 134. "Very hairy all over. Radical leaves ſomewhat pinnatifid. Sinuſes of the calyx with reflexed appendages."—Michaux found this in mountainous woods of North America. He deſcribes the *flowers* as in ſomewhat panicled cluſters, of a blueiſh colour, their calyx having reflexed appendages, like ſome ſpecies of *Campanula.*

HYDROPHYSOCELE, an old term in *Surgery*, implying a hernia, in which a good deal of fluid and air is contained. The word is compounded of ὕδωρ, *water*, φυσα, *a flatus*, and κηλη, *a hernia.*

HYDROPIC, ſynonimous with *dropſical*, being the adjective from *hydrops*; which ſee.

HYDROPIPER, in *Botany*. See Elatine.

HYDROPNE'UMATOCE'LE, from ὕδωρ, *water*, πνευμα, *wind*, and κηλη, *a tumour*, a hernial ſwelling containing a large proportion of air and fluid.

HYDROPNEUMOSA'RCA, an ancient term in *Surgery*, ſignifying a tumour containing water, air, and any fleſhy ſubſtance. The word is derived from ὕδωρ, *water*, πνευμα, *wind*, and σαρξ, *fleſh.*

HYDROPOTA, of Ὑδροποτης, formed of ὕδωρ, *water*, and ποτης, *drinker*; of πινω, *I drink*, in *Medicine*, a perſon who drinks nothing but water.

It has long been controverted among phyſicians, whether or no the hydropotæ lived longer than other perſons? See Drink.

HYDROPS, ὕδρωψ, of ὕδωρ, *aqua*, and ωψ, *vultus*. See Dropsy.

Hydrops *ad matulam*, literally "a dropſy into the chamber-pot," a term ſometimes uſed to ſignify a *diabetes.*

HYDROPYRETOS, formed of ὕδωρ, *water*, and πυρετος, *fever*, a word uſed by ſome authors to expreſs a malignant fever, attended with very copious ſweats. Some make it the ſame with the ſudor Anglicus, or ſweating ſickneſs.

HYDRORACHITIS, from ὕδωρ, *water*, and ῥαχις, *the ſpine*, denotes, in *Surgery*, a particular kind of tumour ſituated on the vertebræ, remarkable for being of a moſt incurable nature; and proving fatal, when it burſts or is punctured,

punctured. The caſe will be conſidered hereafter. See Spina *bifida*.

HYDRORHODINON, formed of ὑδωρ, *water*, and ῥοδον, *roſe*; a name given by the ancients to a mixture of water and oil of roſes. This, as it was at once cooling and emetic, was very much uſed by the ancients, to provoke vomiting after the taking of poiſons.

HYDROROSATON, in the *Writings of the Ancient Phyſicians*, a name given to a drink made of water, honey, and the juice of roſes. The proportions were four pounds of roſes, five pints of water, and two pints of honey.

HYDROSA'RCA, from ὑδωρ, *water*, and σαρξ, *fleſh*, in *Surgery*, any fleſhy tumour containing fluid.

HYDROSA'RCOCELE, from ὑδωρ, *water*, σαρξ, *fleſh*, and κηλη, *a tumour*, ſignifies a hydrocele, or preternatural accumulation of fluid in the tunica vaginalis, attended with a chronic enlargement or induration of the teſticle. See Hydrocele and Sarcocele.

HYDROSCOPE, ὑδροσκοπιον, formed of ὑδωρ, *water*, and σκοπεω, *I conſider*; an inſtrument anciently uſed for the meaſuring of time.

The hydroſcope was a kind of water-clock, conſiſting of a cylindrical tube, conical at bottom; the cylinder was graduated, or marked out with diviſions, to which the top of the water becoming ſucceſſively contiguous, as it trickled out of the vertex of the cone, pointed out the hour.

Syneſius deſcribes the hydroſcope at large in one of his letters. See Clepsydra.

HYDROSELINUM, in *Botany*, a name given by ſome authors to ſmallage.

HYDROSTATIC Balance, a kind of balance contrived for the eaſy and exact finding the ſpecific gravities of bodies, both liquid and ſolid.

The inſtrument is of conſiderable uſe in eſtimating the degree of purity of bodies of all kinds; the quality and richneſs of metals, ores, minerals, &c. the proportions in any mixture, adulteration, or the like; of all which the ſpecific weight is the only adequate teſt.

The hydroſtatical balance is founded on this theorem of Archimedes, that a body heavier than water weighs leſs in water than in air, by the weight of as much water as is equal to it in bulk. Whence, if we ſubtract the weight of the body in water from its weight in air, the difference gives the weight of as much water as is equal in magnitude to the ſolid propoſed.

Having, therefore, two bodies, the one firm, the other fluid, together with the weight of each apart; to find their proportion, divide the greater by the leſſer; the quotient compared to one, that is, unity, will be the antecedent of the proportion deſired.

The inſtrument, with its apparatus, is repreſented *Plate* X. *figs.* 7 and 8, *Hydraulics*, and needs little deſcription. See Gold.

A B is a nice balance, turning with a ſmall part of a grain, and furniſhed with a long examen D, for determining the exact horizontal poſition of the balance.

1. To find the ſpecific gravity of a fluid: hang to the end B of the beam the little ſcale S, and to the bottom of the ſcale S, by a horſe-hair, which is of the ſame ſpecific gravity with water, the glaſs bubble G, which muſt be ſpecifically heavier than any fluid except mercury. To the oppoſite end A of the beam hang a braſs ſcale E, which is a counterpoiſe to the bubble G, immerſed in water; but when the bubble hangs out of the water, a weight muſt be laid on E to keep it *in equilibrio*, which weight will be equal to what the bubble loſt in water, or to a bulk of water equal to the bubble; when rain-water is uſed, this weight will be a thouſand grains. Then fill a cylindrical veſſel I, about two-thirds with common water; and when the bubble is let into it, the beam will remain in a horizontal poſition, if the water be of the ſame ſpecific gravity as that in which the bubble was adjuſted; if it be not, there will be a variation, which is to be corrected by means of little weights for that purpoſe. Having thus adjuſted the bubble in water, the ſpecific gravity of any other fluid will be found by weighing the bubble in it; and ſince you always weigh ſo much of the liquid as is equal to the bulk of the bubble, if there be any difference between ſuch quantity and the like quantity of water, it will be diſcovered by putting weights into the aſcending ſcale. *E. g.* if red port wine be put into the veſſel I, the bubble will ſink, and require the addition of ten grains in the ſcale E, when the balance has been adjuſted in rain-water, for reſtoring the equilibrium; which ſhews that port wine is lighter than rain-water ten parts in a thouſand, or one hundredth part. If proof brandy be uſed, ſeventy-ſeven grains will be required to reſtore the equilibrium, and therefore brandy, or proof ſpirits weighs, ſeventy-ſeven parts in a thouſand, or one-thirteenth part leſs than rain-water. But in a denſer medium G would riſe; and if ſea-water be uſed, twenty-ſix grains muſt be put into the ſcale S to reſtore the equilibrium, which ſhews that ſea-water is twenty-ſix parts in one thouſand, or one thirty-eighth part heavier than rain water.

2. To find the ſpecific weight of a ſolid; inſtead of the bubble, hang on the glaſs bucket K, *fig.* 8. which with its ſuſpending piece H, will be *in equilibrio* with the counterpoiſing ſcale E. Having weighed the ſolid in air in the bucket, by counterpoiſing it with weights on the ſcale E, note its weight; but becauſe not only the ſolid to be tried, but the glaſs bucket itſelf will loſe of its weight when immerſed in water, you muſt reſtore to the bucket the weight that it loſes by being immerſed, that the body in it alone may be examined: this is done by means of the piece F, which weighs juſt as much as a bulk of water equal to the bucket; and being ſlipped on the ſuſpending piece at H, it not only reſtores to the bucket what it had loſt by being immerſed in water, but makes a ſcale for receiving weights, in order to reſtore the equilibrium to the ſolid contained in the bucket, and to ſhew how much it has loſt of its weight in water. When many bodies are to be weighed hydroſtatically, it is beſt to weigh them all in the air ſucceſſively, and ſet down their weights before you begin to weigh them in water, becauſe it would be troubleſome to dry the bucket every time. Care muſt alſo be taken that no bubbles of air adhere to the bodies weighed in water, which would make them lighter.

Dr. Deſaguliers has added a contrivance to this machine to make it more nice, ſee *fig.* 9. S, S, S, are three ſcrews which ſerve to ſet the foot and ſtem upright; and O M is a ſtring and plummet, whoſe point hanging over M, ſhews when the piece P C is truly vertical. There is alſo a piece E O, which has a ſlit to compare with the examen D playing in the notches C *c*. Deſag. Exp. Phil. vol. ii. p. 196.

Mr. Martin propoſes the following conſtruction of an accurate hydroſtatical balance. A B, (ſee *fig.* 10.) is the foot on which it ſtands; C D, a pillar ſupporting a moveable braſs plate E F, faſtened to it by the ſcrew in the knob *e*. In the end of this plate is fixed an upright piece I K, ſupporting another plate G H, which ſlides backwards and forwards thereon, and is moveable every way about it. In the end of this plate at H, is fixed (by a nut beneath) a wire L M, taped with a fine thread from one end to the other; upon this moves the ſwan-neck ſlip of braſs N O, to which a very exact balance is hung at the point N; to one of whoſe ſcales P, is appended the heavy body R, by a fine horſe-hair, or piece of ſilk S; the weight of the ſaid body R in the air is expreſſed by the weights put into the ſcale Q to make an equilibrium therewith, which being deſtroyed by immerging the ſolid in the fluid T V, contained in the glaſs W V, is again reſtored by weights put into the ſcale P. So that the weights in the ſcale Q compared with thoſe in the ſcale P, ſhew at once the ſpecific gravity of the ſolid R to that of the fluid T V.

For ſeveral other conſtructions of this inſtrument, deſigned for greater accuracy than that of the common ſort, the reader may conſult s'Graveſande's Phyſices Elem. Math. &c. tom. i. lib. 3. cap. 3. The ſpecific gravities of ſmall weights may be determined by ſuſpending them in loops of horſe-hair, or ſilk threads, to hook at the bottom of the ſcale of the common hydroſtatical balance. *E. g.* if a guinea ſuſpended in air be counterbalanced by 129 grains in the oppoſite ſcale; and upon being immerſed in water, requires $7\frac{1}{4}$ grains to be put into the ſcale over it, in order to reſtore the equilibrium; we thus find that a quantity of water of equal bulk with the guinea, weighs $7\frac{1}{4}$ grains, or 7.25; by which divide 129, the weight of the guinea in air, and the quotient, or 17.793, ſhews that the guinea is ſo many times heavier than its bulk of water. Whence, if any piece of gold be tried, by weighing it firſt in air, then in water, and if upon dividing the weight in air by the loſs in water, the quotient is 17.793, the gold is good; if the quotient be 18, or between 18 or 19, the gold is very fine; but if it be leſs than $17\frac{1}{2}$, the gold is too much alloyed with other metal. If ſilver be tried in this manner, and found to be eleven times heavier than water, it is very fine; if it be $10\frac{1}{2}$ times heavier it is ſtandard: but if it be any leſs weight, compared with water, it is mixed with ſome lighter metal, ſuch as tin.

In order to find the ſpecific gravities of thoſe bodies that are lighter than water, let any upright ſtud be fixed into a thick flat piece of braſs, and in this ſtud let a ſmall lever, whoſe arms are equally long, turn upon a fine pin as an axis. Let the thread which hangs from the ſcale of the balance be tied to one end of the lever, and a thread from the body to be weighed, be tied to the other end. This done, put the braſs and lever into a veſſel; then pour water into the veſſel, and the body will riſe and float upon it, and draw down the end of the balance from which it hangs; then put as much weight in the oppoſite ſcale as will raiſe that end of the balance, ſo as to pull the body down into the water by means of the lever; and this weight in the ſcale will ſhew how much the body is lighter than its bulk of water. Ferguſon's Lect. p 160, 8vo.

Otherwiſe: Take another body of a compact form, but much heavier than an equal bulk of water, ſo that when this body is connected with the body in queſtion, they may both ſink in water. This being prepared, aſcertain the weight of the lighter body in air, and the weight of the heavier body in water. Then tie, by means of thread, both bodies together, but not ſo cloſely as to exclude the water from, or to harbour bubbles of air between them; and weigh them both in water. Now ſince the heavy body is partly buoyed up by the lighter body, the weight of both in water will be leſs than the weight of the heavier body alone Subtract the former from the latter, and add the remainder to the weight of the lighter body in air; for this ſum is the weight of a quantity of water equal in bulk to the lighter body. Therefore the weight of the lighter body in air muſt be divided by the laſt-mentioned ſum, and the quotient will expreſs the ſpecific gravity of the lighter body.

E. g.—A piece of elm being varniſhed in order to prevent its abſorbing any water, was found to weigh in air 920 grains. A piece of lead, which was choſen for this purpoſe, was found to weigh in water 911.7 grains. The piece of elm and the piece of lead were tied together, and being ſuſpended from the hook of the ſcale, &c. in the uſual manner, were found to weigh in water 331.7 grains, *viz.* 580 grains leſs than the lead alone; therefore 580 was added to 920 (*viz.* to the weight of the elm in air) and made up the ſum of 1500. Laſtly, 920 was divided by 1500, and the quotient 0.6133 expreſſed the ſpecific gravity of the piece of elm.

In the uſe of the hydroſtatical balance, it will be proper to obſerve the following general precautions. The water in which the ſolid is to be weighed, beſides its being either diſtilled or rain water, muſt be quite clean. Its temperature, as well as that of the ſolid, muſt be as near as poſſible to 62° of Fahrenheit's thermometer; for which purpoſe the ball of the thermometer muſt be placed in the water, and the temperature is adjuſted by the addition of hot or cold water. If the ſolid body be ſoluble in water, or if it be porous enough to abſorb any water, then it muſt be varniſhed, or ſmeared over with ſome oily or greaſy ſubſtance; but in that caſe ſome allowance muſt be made on account of the varniſh, &c. When the ſolid is weighed in water, its upper part ought to be a little way below the ſurface of the water; for inſtance, about an inch; and it muſt by no means be ſuffered to touch the ſides or bottom of the jar. Care muſt be had that no bubbles of air adhere to the ſolid under water; for they would partly buoy it up. Theſe may be eaſily removed by means of a feather. The ſolid muſt be of a compact form, and free from accidental or artificial vacuities, ſo as not to harbour any air; for otherwiſe its ſpecific gravity cannot be aſcertained by weighing in water, &c. Thus a piece of ſilver, which is much heavier than water, may be formed into a hollow ſphere, which will appear to be much lighter than water; for if this ſphere were immerſed in water, it would diſplace a quantity of water which is equal not only to the ſilver, but alſo to the ſpace which is contained in the ſphere. It is for this reaſon that a ſhip might be made of iron, or of copper, or, in ſhort, of any ſubſtance whoſe ſpecific gravity far exceeds that of water, and yet it would float as well as a ſhip which is made of wood, in the uſual way. See *Specific* GRAVITY.

HYDROSTATIC *Bellows*, in *Hydroſtatics*, is a machine for demonſtrating the upward preſſure of fluids (ſee FLUID), conſiſting of two thick oval boards A, (*Plate* X. *Hydraulics*, &c. *fig.* 11.) each about ſixteen inches broad, and eighteen inches long, covered with leather, to open and ſhut like a common bellows, but without valves, only a pipe B, about three feet high, is fixed into the bellows at *e*; let water be poured into the pipe at C, which will run into the bellows, and ſeparate the boards a little. Then lay three weights *b*, *c*, *d*, each weighing a hundred pounds, upon the upper board; and pour more water into the pipe B, which will run into the bellows, and raiſe up the board with all the weights upon it; and if the pipe be kept full until the weights are raiſed as high as the leather, which covers the bellows, will allow, the water will remain in the pipe, and ſupport all the weights upon it; even though it ſhould weigh no more than a quarter of a pound, and theſe three hundred pounds; nor will all their force be able to cauſe them to deſcend and force the water out of the top of the pipe. The reaſon of this will appear, if we conſider that if a hole be made in the upper board, and a tube be put into it, the water will riſe in the tube to the ſame height as it riſes in the pipe; and would riſe as high by ſupplying the pipe in as many tubes as the board could contain holes.

Now, ſuppoſe only one hole to be made in any part of the board, of an equal diameter with the bore of the pipe B, and that the pipe holds juſt a quarter of a pound of water; if a perſon puts his finger upon the hole, and the pipe be filled with water, he will find his finger to be preſſed upward with a force equal to that of a quarter of a pound. As the ſame preſſure is equal upon all equal parts of the board, each part, whoſe area is equal to the area of the hole, will be puſhed upward, with a force equal to that of a quarter of a pound: the ſum of all which preſſures againſt the under ſide of an oval board, ſixteen inches broad, and eighteen inches long, will amount to three hundred pounds: and, therefore, ſo much weight will be raiſed up and ſupported by a quarter of a pound of water in the pipe. Hence if a man ſtands upon the upper board, and blows into the bellows through the pipe B, he will raiſe himſelf upon the board; and the ſmaller the bore of the pipe is, the eaſier he will be able to raiſe himſelf; and then by putting his finger upon the top of the pipe, he can ſupport himſelf as long as he pleaſes; provided that the bellows be air-tight. Mr. Ferguſon has deſcribed another machine, which may be ſubſtituted inſtead of this common hydroſtatical bellows: A B C D, *fig.* 12, is an oblong ſquare box, in one end of which is a round groove, as at *a*, from top to bottom, for receiving the upright glaſs tube I, which is bent to a right angle at the lower end as at *i*, in *fig.* 13, and to that part is tied the end of a large bladder K, which lies in the bottom of the box. Over this bladder is laid the moveable board L, *figs.* 12. and 14, in which is fixed an upright wire M; and leaden weights N, N, to the amount of ſixteen pounds, with holes in their middle, are put upon the wire over the board, and preſs upon it with all their force. The croſs bar *p* is then put on to ſecure the tube from falling, and keep it in an upright poſition; and then the piece E F G is to be put on, the part G ſliding tight into the dovetailed groove H, to keep the weights N, N, horizontal, and the wire M upright, which is received into a round hole *e*, in the part E F. There are four upright pins in the four corners of the box within, each almoſt an inch long, for the board L to reſt upon, in order to keep it from preſſing the ſides of the bladder below it cloſe together at firſt. The whole machine being thus put together, pour water into the tube at top, and the water will run down the tube into the bladder below the board, and after the bladder has been filled up to the board, continue pouring water into the tube, and the upward preſſure of the bladder will raiſe the board with all the weight upon it, even though the bore of the tube ſhould be ſo ſmall, that leſs than an ounce of water would fill it. Ferguſon's Lectures, Supplement, 1767. p. 16.

HYDROSTATIC *Inſtrument, Bradford's*, is an invention for weighing money and diſcovering its defect either of weight or purity.

It conſiſts of a thin flat braſs ruler, about half a foot long; on each ſide of which are two graduated lines, thoſe on the upper ſide marked A and W (ſee *Plate* X. *Hydraulics*, *fig.* 15. N° 1.) and thoſe on the other ſide B and W, ibid. N° 2. There are alſo a ſmall chain and pincers wherein to fix the piece of money intended to be weighed and proved, together with two pair of centre pins, marked A and B, ibid. N° 2 and 3. being the points of ſuſpenſion of the rod when uſed; whereof the former pair A are to be uſed for proving all pieces of gold under thirty-ſix ſhillings value; and the other pair, marked B, for all pieces from thirty-ſix ſhillings to ſeventy-two ſhillings, or three pounds twelve ſhillings. Laſtly, there is a ſliding piece, or index C, ibid. N° 3, by the motion of which, backward or forward, until the point of equilibrium is diſcovered, the value of any piece ſuſpended in the pincers is found upon the graduated lines already mentioned. Of theſe lines, thoſe marked A and B are called ſtatical lines, as being calculated for weighing the piece in air, and thoſe marked W W, are called hydroſtatical lines, as ſerving to point out the alloy or adulteration of the piece weighed. A whole diviſion on each line is equal to the weight or value of one ſhilling in gold; a half diviſion to ſix-pence, and a quarter diviſion to three-pence.

To prove a guinea: firſt ſuſpend it in the pincers, and then placing the inſide of the ſliding-piece C to twenty-one on the line A on the upper ſide of the ruler, which muſt move freely on the centre pin marked A, and if the guinea and ſliding-piece exactly balance each other, the guinea is full weight; if not, move the ſlider backwards or forwards until they equiponderate; when the diviſion cut by the inſide of the ſlider is the true weight of the gold; and if it reſts for inſtance, at twenty and a half, then the guinea weighs only twenty ſhillings and ſixpence. In the next place, to prove the alloy of this piece, let the ſlider be brought to the diviſion twenty and a half, upon the hydroſtatical line marked W, for whatever diviſion is cut by the ſlider in weighing on the ſtatical line, it muſt be placed at the ſame on the hydroſtatical line adjoining. Then let the piece, together with the pincers, and the braſs link whereon it is ſuſpended, be immerſed in water (ibid. N° 3.) as far as the notch on the ſaid link; if then the inſtrument acts in equilibrio, or the piece ſink deeper in the water, the guinea is ſtandard gold; but if the ſlider muſt be moved farther backward before it will equiponderate, the guinea is adulterated. If it is alloyed with ſilver, allow two ſhillings for every penny it wants in the hydroſtatical weight; and then if the number of pence the piece is deficient in weight hydroſtatically, when doubled, exceed the number of ſhillings it weighs ſtatically, it may be concluded to be adulterated with ſome baſer metal than ſilver. However, a more ſpeedy method of diſcovering whether a piece of gold be adulterated or not, without moving the ſlider more than once, is this: when the piece is weighed ſtatically, bring the ſlider to the diviſion on the hydroſtatical line expreſſing its weight: and immerſing the piece and pincers as before, ſo that the ſurface of the water may be exactly at the mark on the long link, if the inſtrument does not then equiponderate, gently lower the hand that holds the fluid, until the inſtrument comes to an equilibrium; at which time, if the guinea be a counterfeit, great part of the pincers will appear above the water; if a 36*s.* piece be tried, not only the pincers, but a ſmall part of the coin, will appear above the ſurface, if the piece be counterfeit. This laſt method is ſufficiently near the truth for common practice.

If there is occaſion to weigh and prove a very ſmall piece of gold, as a 2*s.* 3*d.* 4*s.* 6*d.*, &c. the method is, to put the ſaid pieces in the pincers, with ſome other piece that has been approved before; by which means the weight and alloy of the ſmall piece may be eaſily diſcovered, as above. If the piece be above 36*s.* the ſlider is to be placed according to the diviſions of the ſtatical and hydroſtatical lines on the under ſide of the inſtrument, which are fitted to the ſtandard of the mint; by which a guinea weighs 129 grains.

HYDROSTATICAL *Paradox*, is a principle, which has been already ſtated, and in ſome degree illuſtrated and evinced under the article FLUID, and alſo under the article of HYDROSTATIC *Bellows*. It is ſo denominated, becauſe at firſt view it ſeems to be paradoxical; but it reſults from the nature of fluids, which preſs every way alike. The paradox is this, that any quantity of water, or any other fluid, how ſmall ſoever, may be made to balance and ſupport any quantity, or any weight, how great ſoever. Thus, water in a pipe or canal, open at both ends, always riſes to the ſame height at both ends, whether thoſe ends be wide or narrow, equal or unequal. And ſince the preſſure of fluids is directly as their perpendicular heights, without any regard to their quantities, it follows that whatever the figure or ſize of the veſſels may be, provided their heights be equal, and the areas of their bottoms equal, the preſſures of equal heights of water are equal upon the bottoms of thoſe veſſels; even though the one ſhould contain a thouſand or ten thouſand times as much as the other. Mr. Ferguſon has illuſtrated and confirmed this paradox by the following apparatus. Let two veſſels, (*Plate* XI. *Hydraulics, fig.* 16.) ſuch as A B and C D, be of equal heights, but very unequal capacity; let each veſſel be open at both ends, and their bottoms E and F of equal widths. Let the braſs bottoms G and H be exactly fitted to each veſſel, not ſo as to go into them, but for each veſſel to reſt upon reſpectively; and let a piece of wet leather be put between each veſſel and its braſs bottom, for the ſake of keeping them cloſe. Join each bottom to its veſſel by a hinge D, ſo that it may open like the lid of a box; and let each bottom be kept up to its veſſel by equal weights W, hung to lines which paſs over the pulley P, whoſe blocks are fixed to the ſides of the veſſels at F, and the lines tied to hooks at *d*, fixed in the braſs bottoms oppoſite to the hinges D. Things being thus prepared, hold one veſſel upright in the hands over a baſon on a table, and cauſe water to be poured ſlowly into it, till the preſſure of the water bears down its bottom at the ſide *d*, and raiſes the weight E; and then part of the water will run out at *d*. Mark the height at which the ſurface H of the water ſtood in the veſſel, when the bottom began to give way at *d*; and then, holding up the other veſſel in the ſame manner, cauſe water to be poured into it; and it will be ſeen that when the water riſes in this veſſel juſt as high as it did in the former, its bottom will alſo give way at *d*, and it will loſe part of the water.

The natural reaſon of this ſurpriſing phenomenon is, that ſince all parts of a fluid at equal depths below the ſurface, are equally preſſed in all directions, the water immediately below the fixed part B *f* will be preſſed as much upward againſt its lower ſurface within the veſſel, by the action of the column A *g*, as it would be by a column of the ſame height, and of any diameter whatever; and therefore ſince action and re-action are equal, and contrary to each other, the water immediately below the ſurface B *f* will be preſſed as much downwards by it as if it were immediately touched, and preſſed by a column of the height A *g*, and of the diameter B *f*; and therefore the water in the cavity B D *d f* will be preſſed as much downward upon its bottom G, as the bottom of the other veſſel is preſſed by all the water above it. Ferguſon's Lectures, p. 105.

HYDROSTATICS, compoſed of ὕδωρ, *water*, and στατικη, *ſtatics*, of στατος, *ſtans*, *ſtanding*, of ἵστημι, *ſto*, *I ſtand*, hydroſtatics being conceived as the doctrine of the equilibrium of liquors, is the doctrine of gravitation in fluids; or that part of mechanics which conſiders the weight or gravity of fluid bodies, particularly of water, and of ſolid bodies immerged in them.

To hydroſtatics belongs whatever relates to the gravities and equilibria of liquors, with the art of weighing bodies in water, in order to eſtimate their ſpecific gravities.

Mr. Boyle has applied hydroſtatics to good purpoſe, in examining and proving the goodneſs and purity of metals, minerals, and other bodies, particularly fluids, in an expreſs treatiſe, entitled "Medicina Hydroſtatica."

The laws of hydroſtatics, with the application of them, ſee delivered at large under the articles FLUID and *Specific* GRAVITY.

Hydroſtatics are frequently confounded with hydraulics, on account of the affinity of the ſubjects; and ſeveral authors chuſe to treat of the two promiſcuouſly. See HYDRAULICS.

The oldeſt writer on hydroſtatics is Archimedes, who firſt delivered the laws of them in his book "De inſidentibus humido." Marin Ghetaldus firſt brought his doctrine to experiment, in his "Archimedes Promotus;" and from him Mr. Oughtred took the greateſt part of what he has given us on this ſubject. The celebrated M. Paſchal has written an excellent treatiſe on this ſubject, entitled "Traité de l'Equilibre des Liqueurs et de la Peſanteur de l'Air." M. Mariotte, in a French treatiſe, publiſhed at Paris in 1686, "Of the Motion of Water and other Fluids," gives moſt of the propoſitions of hydroſtatics and hydraulics, proved by reaſon, and confirmed by experiments. The Jeſuit F. Tertius de Lanis, in the third tome of his "Magiſterium Naturæ et Artis," lays down the doctrines of hydroſtatics more amply than they are elſewhere found. F. Lamy, in the ſecond part of his mechanics, entitled "Traité de l'Equilibre des Liqueurs," delivers the fundamental laws of hydroſtatics and hydraulics; and the like is done by Dr. Wallis, in his "Mechanica." Laſtly, ſir Iſaac Newton gives ſome of the ſublimer matters in the ſecond book of his Philoſoph. Nat. Princip. Mathematic. For an account of other writers on this ſcience, ſee HYDRAULICS.

HYDRO-SULPHURET, in *Chemiſtry*, a compound of ſulphuretted hydrogen with alkaline and earthy baſes, and likewiſe with metallic oxyds. The properties of the hydro-ſulphurets are: that they are abundantly ſoluble in water, and are cryſtallizable; the ſolution is colourleſs as long as the action of the air is excluded; but when it is admitted, a yellow colour is ſoon acquired, owing to the oxygen of the atmoſphere combining with the hydrogen of a portion of the ſulphuretted hydrogen, while the ſulphur combines with the remaining portion of it, forming a ſuperſulphuretted hydrogen in union with the baſe. The principal hydro-ſulphurets are as follow: *viz.* 1. Hydro ſulphuret of potaſh: this ſalt is white, and perfectly tranſparent, reſembling the ſulphate of ſoda by its tranſparency and the ſize of its cryſtals. Its taſte is at firſt alkaline, and afterwards extremely bitter; when dry it is without ſmell, but when liquid it exhales a fœtid odour. It attracts humidity from the atmoſphere, and paſſes into a liquid ſyrup. When fluid, it gives a green colour to bodies in contact with it; it is ſoluble in water and alcohol, abſtracting heat during the ſolution: with acids, it gives riſe to a briſk effervеſcence, without depoſiting any ſulphur. It precipitates the metallic ſolutions: the precipitates from different metals being of different colours and ſhades. 2. The properties of the hydro-ſulphuret of ſoda are very like thoſe juſt enumerated of the potaſh; but the nitrous and oxy-muriatic acids produce a precipitate of ſulphur, owing to their decompoſing the ſulphuretted hydrogen, by affording oxygen to its hydrogen, while the other acids merely expel it. To diſtinguiſh the hydro-ſulphuret of potaſh from that of ſoda; add a few drops of the ſolution of each to a ſolution of alumine in ſulphuric acid: the potaſh gives riſe immediately to a cryſtallization of alum; while that of ſoda has no ſuch effect. 3. Hydro-ſulphuret of ammonia is thus produced: when equal parts of ſulphuretted hydrogen and ammonia, in their elaſtic ſtates, are mixed together, they immediately combine; a white cloud is produced, which is condenſed, and a thin, ſoft depoſit is formed on the ſides of the veſſel, which exhales a penetrating vapour when expoſed to the air: this is the hydro-ſulphuret of ammonia.

HYDROTHORAX. See Dropsy.

HYDROTICS, formed of ὕδωρ, *water*, in *Medicine*. See Hydropic.

HYDRUNTUM, Otrante, in *Ancient Geography*, the moſt eaſterly part of Italy, having a port, from which it was uſual to paſs over to Greece: the gulf in that place being ſcarcely 12 leagues broad. Near it was a cape, called "Hydrus Mons."

HYDRUS, or *Water Serpent*, in *Aſtronomy*, is a ſouthern conſtellation, including ten ſtars. See Constellation.

Hydrus, in *Zoology*, a genus of ſerpents lately eſtabliſhed by Dr. Schneider, and which is deſigned to contain a number of thoſe ſpecies of the ſerpent tribe that are of the aquatic kind, whether thoſe which reſide in freſh waters, or the marine elements; or ſuch as indiſcriminately inhabit either.

Moſt of the ſnake tribe poſſeſs the power of moving in the water without difficulty, and ſome, from their peculiar conformation, perform the act of ſwimming with much facility; but the ſtructure of the hydrus is in an eminent manner adapted to this particular purpoſe, the tail being broad, flat, and compreſſed, like that of ſome kinds of fiſhes, and by means of which it is enabled to direct its courſe with equal certainty, and ſwim with equal eaſe and ſwiftneſs. Water ſerpents are mentioned by various writers of antiquity, as Ariſtotle, Ælian, and Pliny, and alſo by others of the middle ages, as well as thoſe of modern times. Ælian ſpeaks of ſnakes of large ſize, with flat tails, produced in the Indian ſea, and Ariſtotle mentions others reſembling the conger. It is, therefore, very probable that ſome few of the genus may have been known to them, though it is not leſs likely they might have confounded the muræna with their ſea ſerpents, or perhaps even ſome of the terreſtrial kinds of ſerpents, as the uninformed among the moderns too frequently denominate all thoſe ſnakes "water ſnakes" which they happen to diſcover in the water; without reflecting that thoſe ſnakes may have only ſought ſhelter in the water in the moment of purſuit, or been diſcovered in the very inſtant of time when they have plunged into that element in ſearch of prey.

Boſc, and after him other writers of credit on the tribe amphibia, reject the name of hydrus, given by Schneider; that term having been previouſly aſſigned to a tribe of vermes, the polype or hydra of Linnæus. They, therefore, ſince it appears deſirable the genus ſhould be retained, adopt it by the name of *Hydrophis* inſtead of *Hydrus*, and under this appellation it is received by the beſt writers at this time. Daudin, it is true, eſteems the diſtinction too diffuſe, and with the exception of a few ſpecies continued under the name of enhydris, returns the hydrus genus of Schneider to the Linnæan coluber, but his example is not followed by his own countrymen, among whom the three genera, as before mentioned, ſeem very generally admitted at this period.

It ſhould be diſtinctly underſtood that Mr. Schneider does not include the whole of the water ſerpents under one genus; he conſiders their reſidence in the water as the characteriſtic only of a tribe, which he ſubdivides into two genera, the firſt of which he calls *Hydrus*, the other *Enhydris*. In both the form of the tail is alike, flat, broad, and formed for ſwimming, but in the ſhape of the ſcales and ſome other particulars they differ materially, thoſe of the hydrus correſponding with the viper (coluber), and the enhydrus with the ſnake (anguis). A third genus is conſtituted by ſtill later naturaliſts of the Hydrus colubrinus of that author, under the name of *Platurus*, this ſpecies being furniſhed by nature with venomous fangs like the poiſonous kinds of ſnakes. The genus laſt adverted to was ſuppoſed to conſiſt only of a ſingle ſpecies, but we find among the Indian ſerpents deſcribed by Dr. Ruſſel, ſome other poiſonous kinds, which perhaps belong to this particular genus.

Species.

* Genus *Hydrus*, Schneider. *Hydrophis.*

Laticauda. Pale yellowiſh, with tranſverſe brown bands; tail pointed. *Anguis laticauda*, Linn. *Hydrus faſciatus*, Schneider. *Tatta Pam*, Ruſſel.

The form of this ſpecies is long and ſlender; the head ſmall, not broader than the neck, and covered with large ſcales; the neck cylindrical; the back carinated; ſides declining, and belly roundiſh. The ſcales on the trunk, tail, and belly are orbicular, cloſe and not imbricated; thoſe on the under part of the body amount to two hundred, and are placed in two rows; thoſe beneath the tail fifty; the teeth ſmall. Schneider ſuppoſes this may be of the poiſonous kind, as he obſerved a large curved fang-like tooth on each ſide, concealed as it were in a kind of ſheath. The ſpecimen deſcribed by Dr. Ruſſel was found on the ſea beach at Vizagapatam, and appeared very alert in its motions, yet when put into a veſſel of ſea-water to be preſerved alive, in order to aſcertain the effects of its bite, it very ſoon died. The length of this was about two feet; according to Schneider it grows to a much larger ſize.

Bicolor. Body above black, beneath yellowiſh; tail ſpotted with black. *Hydrus bicolor*, Schneider. *Anguis platura*, Linn. *Nixboa Quauquecolla*, Seba. *Nalla Wahlagillee Pam*, Ruſſel.

A native of the Indian ſeas, and ſaid by Forſter to be very common near the coaſts of the iſland of Otaheite, where it is called by the natives *Etoona-toree*, and conſtitutes an article of food; it is about two feet ſix inches long, and feeds on fiſh and molluſcous animals, which, according to Forſter, it ſeizes with the utmoſt addreſs. The ſame ſpecies is found in various parts of the Pacific ocean.

Cæruleus. Blue, with numerous yellow bands. *Shootur*, Ruſſel.

Length three feet and a half; abdominal ſcales three hundred and thirty-two; caudal forty. Native of India.

Major. Livid, with brown decurrent bands, and hexagonal abruptly carinated ſcales. Shaw.

Deſcribed from a ſpecimen in the Britiſh Muſeum. Its length is more than three feet; its colour pale or livid, marked throughout the whole length of the back by a ſeries of large tranſverſe, ſemi-current duſky bands; the tail banded more deeply. The length of the tail is about four inches, and the ſcales which cover it are of a ſomewhat ſquare or lozenge form, and ſo diſpoſed as to reſemble in ſome degree thoſe of a fiſh; they are all marked by an abrupt middle carina; the ſcales on the body are chiefly hexagonal, and are carinated in the ſame manner. It appears to be of the poiſonous kind, as one of the teeth on each ſide in the upper jaw is larger than the reſt, and on being examined with a lens is evidently tubular, the ſlit towards the end being much longer in proportion than in that of the rattleſnake. The ſpecies is a native of the Indian ſeas.

Gracilis. Anterior part of the body ſlender, and covered with ſmooth ovate ſcales; the poſterior end thicker, and covered with ſmooth abruptly-carinated hexagonal ſcales. Shaw.

Length two feet; head very ſmall, and not of greater diameter than the neck; the tail about an inch and three-quarters in length, colour uncertain, but appears to have been banded all along the upper parts, from the head to the tail, with numerous, equidiſtant, brown, and ſomewhat obtuſely pointed bands reaching almoſt to the abdomen, thoſe on the ſmall or cylindrical part of the body being continued into annuli.

Cærulescens. Blueiſh with duſky blue decurrent bands, and white abdomen. Shaw.

A native of the Eaſt Indies, the length two feet; in appearance reſembles Hydrus major, but the abdomen has a ſingle and perfectly undivided row of hexagonal ſcales, from the throat to the beginning of the tail, of about the length of an inch in diameter, and forming a carina on that part; back marked by a carina alſo; tail two inches and a quarter long, and moderately broad. Colour above pale livid blue, beneath white, and marked throughout its whole length by decurrent bands of deeper blue.

Curtus. Short, yellowiſh, with duſky decurrent ſubacuminated bands, ſomewhat confluent above. Shaw.

A native of the Eaſt Indies; the length one foot, the body compreſſed, and conſiderably thicker in proportion to its length than the ſpecies cærulefcens; the head flattiſh; neck and anterior part but little thinner than the reſt of the body; tail about an inch long, and of the uſual form; back and abdomen carinated, the carina of the latter more obtuſe. The general colour is pale yellow, with a pretty cloſe ſeries of deeply decurrent duſky bands from head to tail, and which are ſo diſpoſed as to appear alternately confluent on the upper part of the back, more eſpecially near the head. Deſcribed from a ſpecimen in the Britiſh Muſeum.

Spiralis. Yellowiſh, with brown bands longitudinally confluent beneath; the body ſpirally contorted. Shaw.

An elegant ſpecies, of a ſlender form, and about two feet in length, the body much compreſſed throughout; the dorſal carina very acute, that of the abdomen with a flattened edge of ſcales ſomewhat wider than the reſt, and about the fifteenth of an inch in diameter; the head ſmall; mouth wide; ſcales on the head large, thoſe on the body moderately ſmall, ovate, and ſlightly carinated. The general colour is yellow, with bars of deep cheſnut brown, each dilating on the abdomen; and the back from about the middle nearly to the tail is marked with a ſeries of large, round, blackiſh ſpots. "The moſt remarkable circumſtance in this ſnake (ſays Dr. Shaw) is the ſingular obliquity of its form; the body in different parts being alternately flatter on one ſide than the other, and the pattern completely expreſſed on the flattened ſide only; the other, or more convex ſide, being unmarked by round ſpots, and lying as it were beneath; thus conſtituting ſeveral alternate ſpiral curves." Gen. Zool.

** Genus *Enhydris.*

Caspius. Cinereous olive with four rows of orbicular black ſpots diſpoſed in quincunx order down the back; abdomen yellow, teſſellated with black. *Coluber hydrus,* Pallas.

Inhabits the Caſpian ſea and alſo the Rhine, the length about three feet; tail almoſt black, and terminated by a ſmall double point, one beneath the other. The head is ſmall, the eyes ſurrounded by a yellow circle; teeth numerous, ſmall, and placed in two rows; the tongue very long and black.

Atrocæruleus. Black blue; abdomen yellow, with a central longitudinal line of blue. *Hydrus enhydris,* Schneid. *Mutta Pam,* Ruſſel.

Deſcribed by Dr. Ruſſel as being about twenty inches in length, the colour dark blue and changeable; the yellow of the abdomen inclining to white; head ſmall and covered with large ſcales; anterior part of the body ſlender, the circumference of the trunk, in the thickeſt part, about two inches and a quarter; and the tail ſhort, ſmall, taper and compreſſed. The ſpecimen mentioned by Dr. Ruſſel was taken in an Indian lake called Ankapilly in one of the traps placed there for catching eels. It is ſuppoſed to be harmleſs, having no viſible fangs.

Cinereus. Aſh colour; ſnout broad, obtuſe, and black; abdomen yellowiſh. *Hydrus rynchops,* Schneider. *Karoo Bokadam,* Ruſſel.

Inhabits India; the length three feet and a half, the thickneſs near the head three inches; in the middle of the body four inches and a half; the ſnout projecting, broader than the neck, and forming a kind of beak which is covered with ſmall laminæ, the remainder of the head, with the whole of the upper parts, beſet with ovate or ſub-orbicular carinated ſcales; eyes ſmall and vertical; mouth moderate; teeth cloſe ſet, ſmall, irregular, and not reflex. Colour of the ſcaly part of the ſnout pale cinereous. Tail rather compreſſed, eight inches in length, ſomewhat tapering, and obtuſe at the end.

Piscatorus. Yellowiſh brown, with numerous round black ſpots united by black lines, and diſpoſed in oblique rows. *Hydrus piſcator,* Schneider. *Neeli Koea,* Ruſſel.

Length two feet nine inches; circumference three inches and a half; head rather broad, ovate, and ſomewhat depreſſed, with the ſides compreſſed; covered with large ſcales; tail eleven inches in length, ſlightly carinated, tapering very gradually, and terminating acutely; the abdomen yellowiſh white. The ſpecies is a native of India, and is eſteemed a water ſnake, as it frequents the wet paddy fields; it moves ſwiftly, and carries its head high, with a menacing air, but is not a poiſonous ſpecies, and cannot eaſily be irritated. When provoked it would neither hiſs nor ſnap at a ſtick preſented to it; nor was it provoked to bite a chicken though pecked ſeveral times by the animal. It is known to feed on fiſh.

Palustris. Browniſh yellow, with rhomboid brown ſpots edged with black; abdomen pearl colour; tail above reddiſh white. *Hydrus paluſtris,* Schneider. *Paragoodoo,* Ruſſel.

Reſembles the laſt; the length more than two feet; trunk round; head broadiſh, oblong, and covered with large ſcales; tail round, about five inches and a half long and very taper; between each of the oblique rows of brown rhomboidal ſpots is a ferruginous line, the whole having a decuſſated appearance; the tail plain and immaculate. According to Dr. Ruſſel, this ſpecies is not uncommon in India, frequenting the damp grounds, and the borders of tanks, and growing to a ſize much ſuperior to the former.

Dorsalis. Dirty white, with a dorſal black band ſinuated at the edges. *L'Enhydre dorſale,* Boſc.

The length about one foot; head ovoid; abdomen carinated. Country unknown.

*** Genus *Platurus.* *Armed with venomous Fangs.*

Fasciatus. Lead colour, with broad black ſurrounding bands. *Coluber laticaudatus,* Linn. *Hydrus colubrinus,* Schneider. *Platurus faſciatus,* Latreille.

Native of the Indian and American ſeas; its general length two feet ſix inches, or more; the head is covered with large ſcales; the body cylindrical; tail flattened and ſomewhat dilated at the tip. This is a poiſonous ſerpent, but the fangs are remarkably ſmall in proportion to the ſize of the creature.

Lanceolatus. Back blue, under the belly yellowiſh; tail lanceolate and entirely blue.

A native of the Indian ſeas, and is called by the inhabitants

ants in the Engliſh ſettlements Hoglin; it is two feet and a half in length; the ſeries of abdominal ſcales three hundred and ſix, and thoſe of the tail forty-eight. This and the following ſpecies are extremely dangerous, their bite proving mortal in a few minutes.

Albus. White with numerous blue bands; tail obtuſe.

Deſcribed by Dr. Ruſſel as a native of India, under the name of Chittul. The length is three feet, the number of abdominal ſcales is three hundred and eight; and thoſe of the tail forty-eight.

HYELA, in *Ancient Geography*, a river of Aſia, in Bithynia, called by Pliny *Hylas*.—Alſo, a town of Arabia Felix. Ptol.

HYELLA, a maritime town of Magna Græcia, in Lucania, called alſo *Hyalé*. Strabo.

HYELLIUM, a town of Aſia, in Phrygia, upon the Meander.

HYEMAL Solstice, the ſame with *winter ſolſtice*. See Solstice.

HYEMANTES, in the *Primitive Church*, offenders who had been guilty of ſuch enormities, that they were not allowed to enter the porch of the churches with the other penitents, but were obliged to ſtand without, expoſed to all the inclemency of the weather.

HYES, in *Mythology*, a ſurname given to Bacchus, from the name Hye given to his mother Semele: or, according to others, becauſe her feaſt commonly happened in a rainy ſeaſon; from ὕω, *to rain*. The Athenians worſhipped Jupiter under the character Pluvialis, and erected an altar to him on mount Hymetta.

HYETUSSA, in *Ancient Geography*, a ſmall iſland ſituated on the coaſt of Ionia, over-againſt the mouth of the Meander, and ſouth of the promontory of Trogilium.

HYGEIA, or Hygieia, in *Mythology*, an epithet given to Minerva, as the goddeſs of health. Hygieia was repreſented as one of the four daughters of Eſculapius. She often accompanies her father in the monuments of him now remaining, and appears like a young woman, commonly holding a ſerpent in one hand, and a patera in the other; ſometimes the ſerpent drinks out of the patera; ſometimes he twines about the whole body of the goddeſs.

HYGIEINE, Ὑγιεινη, formed of ὑγιης, *ſound*, *healthy*, that branch of medicine which conſiders *health*, and diſcovers proper means and remedies, with their uſe in the preſervation of that ſtate.

The objects of this branch of medicine are, the non-naturals. See Air, Diet, Exercise, &c.

Hygieine, more largely taken, is divided into three parts; *prophylactice*, which foreſees and prevents diſeaſes; *ſynteritice*, employed in preſerving health; and *analeptice*, whoſe office is to cure diſeaſes, and reſtore health.

HYGINUS, pope, in *Biography*, is thought to have been a native of Athens, flouriſhed in the ſecond century, and was brought up as a philoſopher by profeſſion. He was elected to the office of biſhop of Rome upon the martyrdom of Teleſphorus about the year 140, and filled it till his death, which took place three years after. He was the zealous opponent of the doctrines propagated at that period by Valentine and Cerdo, but could not prevent them from making conſiderable progreſs. He ſettled and confirmed the ſeveral orders and degrees of the clergy; ordained the ſolemn conſecration of churches, and did many other acts which were regarded, at that period, as of great importance to the intereſts of the prevailing religion. Moreri.

Hyginus, Caius Julius, one of the ancient grammarians, is mentioned by Suetonius as a native of Spain, though ſome have ſuppoſed him an Alexandrian, and to have been brought to Rome after the capture of that city by Julius Cæſar. He was appointed keeper of the Palatine library, and received pupils for inſtruction. He was intimately acquainted with Ovid and other literary characters of the age: he was ſaid to be the imitator of Cornelius Alexander, a Greek grammarian; wrote the lives of illuſtrious men, which are referred to by Aulus Gellius; a volume of examples, and a copious treatiſe on the cities of Italy. Other works have been attributed to him: but the only pieces that have come down to us, are entitled "Poeticon Aſtronomicon, de Mundi et Spheræ, ac utriuſque Partium, Declaratione, lib. iv." and a book of fables. The beſt edition of theſe works in conjunction is contained in Munker's "Mythographi Latini." Gen. Biog.

HYGRA, of ὑγρος, *moiſt*, a name given by the ancients to what they called liquid plaſters, in oppoſition to thoſe called xeria, or dry ones. Theſe firſt were a ſort of liniments.

HYGROCIRSOCELE, compounded of ὑγρος, *moiſt*, and κιρσοκηλη, *ramex varicoſus*, in *Medicine*, a branch of a vein ſwelled with ill blood, or other humours; or a varicoſe tumour of ſome of the veins of the teſtes, attended with a gathering of water in the ſcrotum.

HYGROMETER, or Notiometer, compounded of ὑγρος, *moiſt*, and μετρεω, *I meaſure*, a machine, or inſtrument, whereby to meaſure the degrees of dryneſs, or moiſture, of the air. It is alſo called *Hygroſcope*. See the next article.

HYGROMETRY is the term uſed by Lambert, Sauſſure, and other writers to denote the ſcience concerning the nature and quantity of aqueous vapour in the atmoſphere, and its relation to certain inſtruments called *hygrometers*. This branch of meteorology has been greatly improved of late years, and is juſtly conſidered of importance, as being intimately connected with *hygrology*, or the ſcience of aqueous meteors in general.

The two great objects of hygrometry are, 1ſt, To find what quantity of water exiſts in ſolution, or in an elaſtic ſtate, in a given volume of the atmoſphere, or, which is ſtill better, in a given perpendicular column reaching to its ſummit; and, 2dly, To aſcertain the diſpoſition of the atmoſphere on any occaſion to depoſit water or to abſorb it, or, in more familiar language, its diſpoſition to rain or to be fair.

The earlier philoſophers had the ſecond object chiefly in view, on account of the more immediate benefit which ſeemed likely to be derived from the knowledge of it; but latterly both objects have engaged the attention of thoſe who have purſued this branch of phyſical inveſtigation. Various means have been applied and inſtruments uſed under the name of hygrometers or hygroſcopes, to indicate the fluctuations of moiſture exiſting in the atmoſphere. The detail of experimental enquiry may be conveniently digeſted under five heads; namely, 1. The alternate expanſion and contraction of animal and vegetable ſubſtances, by dryneſs and moiſture. 2. The quantity of water abſorbed from the air by chemical agents having an affinity for it. 3. The quantity of water evaporated under given circumſtances. 4. The cold produced by the evaporation of water; and, 5. The dew-point; or that point of temperature at or below which dew is depoſited from the atmoſphere upon glaſs or any other ſmooth ſubſtance.

1. *On the Expanſion and Contraction of Animal and Vegetable Subſtances by Dryneſs and Moiſture.*—It has been long known that animal and vegetable ſubſtances of different kinds are ſubject to contraction and dilatation by moiſture and dryneſs. Mr. Boyle made experiments on ropes, by ſuſpending weights of 50 or 100lb. to them, which he found were raiſed and

and lowered alternately by the moiſture and dryneſs of the air. Amongſt the hygrometrical ſubſtances of this kind, that have been more or leſs noticed, may be reckoned ropes and cords of various kinds, ſuch as whip-cord, eatgut, &c , wood, particularly deal, ivory, whalebone, hair, beard of a wild oat, and ſeveral other vegetable productions, &c. If theſe bodies retained the property of being affected by moiſture undiminiſhed, they would form comparable inſtruments for hygrometers or rather hygroſcopes ; but unfortunately they all in time become leſs ſenſible than at firſt.

We ſhall here give in brief detail an account of the manner in which hygrometers, conſiſting of the above-mentioned materials, have been conſtructed.

Stretch a hempen cord or a fiddle-ſtring, as A B (*Plate* XII. *Hydraulics*, *fig.* 1.) along a wall, bringing it over a truckle or pulley B, and to the other extreme D tie a weight E, into which fit a ſtyle, or index, F G. On the ſame wall fit a plate of metal H I, divided into any number of equal parts, and the hygrometer is complete.

For it is a matter of undoubted obſervation, that moiſture ſenſibly ſhortens the length of cords and ſtrings ; and that as the moiſture evaporates they return to their former length ; and the like may be ſaid of a fiddle-ſtring. The weight, therefore, in the preſent caſe, upon an increaſe of the moiſture of the air, will aſcend ; and upon a diminution of the ſame, it will deſcend.

Hence, as the index F G will ſhew the ſpaces of aſcent and deſcent, and thoſe ſpaces are equal to the increments and decrements of the length of the cord or gut A B D, the inſtrument will diſcover whether the air be more or leſs humid now than it was at another given time.

Or thus : if a more ſenſible and accurate hygrometer be required, ſtrain a whip-cord, or fiddle-ſtring, over ſeveral truckles, or pullies, A, D, E, F, and G (*fig.* 2.), and proceed with the reſt as in the former example. Nor does it matter whether the ſeveral parts of the cord A B, C D, D E, E F, F G, be parallel to the horizon, as expreſſed in the preſent figure, or perpendicular to the ſame. The advantage of this, above the former hygrometer, is, that we have a greater length of cord in the ſame compaſs ; and the longer the cord, the greater its contraction and dilatation.

Or thus : faſten a twiſted hempen cord, or fiddle-ſtring, H W, by one end, ſuſtaining a weight W (*fig.* 3.) to an iron hook ; and let the other end deſcend upon the middle of an horizontal board, or table, A B, and fit an index I. Laſtly, from the centre B deſcribe a circle ; which divide into any number of equal parts.

Now, it is matter of obſervation, that a cord or gut twiſts itſelf as it is moiſtened, and untwiſts again as it dries. Mr. Molyneux, ſecretary of the Dublin ſociety, writes, that he could perceive this alternate twiſting and untwiſting in a cord, by only breathing on it eight or ten times, and then applying a candle towards it. Hence, upon an increaſe or decreaſe of the humidity of the air, the index will ſhew the quantity of twiſting or untwiſting ; and, conſequently, the increment or decrement of humidity, or dryneſs.

Or thus, faſten one end of a cord or fiddle-ſtring, H I, (*fig.* 4.) to a hook H ; and to the other end faſten a ball K, of a pound weight. Draw two concentric circles on the ball, and divide them into any number of equal parts ; fit a ſtyle, or index, N O, into a proper ſupport, N, ſo as the extremity O may almoſt touch the diviſions of the ball.

Here the cord or gut twiſting or untwiſting, as in the former caſe, will indicate the change of moiſture, &c. by the ſucceſſive application of ſeveral diviſions of the circles to the index.

Or thus : provide two wooden frames, A B and C D, (*fig.* 5.) with grooves in them ; and between theſe grooves fit two thin leaves of aſh, A E F C and G B D H, ſo as they may eaſily ſlide either way. At the extremes of the frames A, B, C, D, confine the leaves with nails, leaving between them the ſpace E G H F, about an inch wide. On I faſten a ſlip of braſs dented, I K ; and in L a little dented wheel, upon whoſe axis, on the other ſide of the machine, an index is to be put. Laſtly, from the centre of the axis, on the ſame ſide, draw a circle, and divide it into any number of equal parts.

Now, it being found by experience, that aſhen wood readily imbibes the moiſture of the air, and ſwells with it ; and as that moiſture ſlackens, ſhrinks again ; upon any increaſe of the moiſture of the air, the two leaves A F and B H, growing turgid, will approach nearer each other : and, again, as the moiſture abates they will ſhrink, and again recede. Hence, as the diſtance of the leaves can neither be increaſed nor diminiſhed without turning the wheel L, the index will point out the changes in reſpect of humidity and dryneſs.

It is to be noted, that all the hygrometers above deſcribed become ſenſibly leſs and leſs accurate ; and, at length, undergo no ſenſible alteration at all from the humidity of the air. The following is much more laſting ; though no hygrometer will ſerve for years, like a barometer and thermometer ; but whatever be the ſubſtance of which it is made, will be ſo altered as to become in a great degree uſeleſs.

Take the manoſcope deſcribed under that article, and inſtead of the exhauſted ball E, (*fig.* 6.) ſubſtitute a ſponge, or other body which eaſily imbibes moiſture. To prepare the ſponge, it may be neceſſary to waſh it firſt in water ; and when dry again, in water or vinegar, wherein ſal ammoniac, or ſalt of tartar, has been diſſolved, and let it dry again.

Now, if the air become moiſt, the ſponge, growing heavier, will preponderate ; if dry the ſponge will be hoiſted up, and, conſequently, the index will ſhew the increaſe or decreaſe of humidity of the air.

In the laſt mentioned hygrometer, Mr. Gould, in the Philoſophical Tranſactions, inſtead of a ſponge, recommends oil of vitriol, which is found to grow ſenſibly lighter or heavier, in proportion to the leſſer or greater quantity of moiſture it imbibes from the air ; ſo that being ſatiated in the moiſteſt weather, it afterwards retains or loſes its acquired weight, as the air proves more or leſs moiſt. The alteration in this liquor is ſo great, that in the ſpace of fifty-ſeven days it has been known to change its weight from three drachms to nine ; and has ſhifted an index or tongue of a balance thirty degrees. A ſingle grain, after its full increaſe, has varied its equilibrium ſo ſenſibly, that the tongue of a balance, only an inch and a half long, has deſcribed an arch one-third of an inch in compaſs ; which arch would have been almoſt three inches, if the tongue had been one foot, even with ſo ſmall a quantity of liquor ; conſequently, if more liquor, expanded under a large ſurface, were uſed, a pair of ſcales might afford as nice an hygrometer as any kind yet invented. The ſame author ſuggeſts, that oil of ſulphur per campanam, or oil of tartar per deliquium, or the liquor of fixed nitre, might be ſubſtituted in lieu of the oil of vitriol.

This balance may be contrived two ways ; by either having the pin in the middle of the beam, with a ſlender tongue, a foot and a half long, pointing to the diviſions on an arched plate, as repreſented in *fig.* 6 :

Or, the ſcale with the liquor may be hung to the point of the beam near the pin, and the other extreme be made ſo long, as to deſcribe a large arch on a board placed for the purpoſe, as repreſented in *fig.* 7.

Mr. Arderon has propoſed ſome amendment in the ſponge hygrometer. He directs the ſponge A (*fig.* 8.) to be ſo cut as to contain as large a ſuperficies as poſſible, and to hang by a fine thread of ſilk, upon the beam of a balance B, and exactly balanced on the other ſide by another thread of ſilk at D, ſtrung with the ſmalleſt lead-ſhot, at equal diſtances, ſo adjuſted as to cauſe an index E, to point at G, the middle of a graduated arch, F G H, when the air is in a middle-ſtate, between the greateſt moiſture and the greateſt dryneſs. Under this ſilk ſo ſtrung with ſhot, is placed a little table or ſhelf I, for that part of the ſilk and ſhot which is not ſuſpended to reſt upon. When the moiſture imbibed by the ſponge increaſes its weight, it will raiſe the index, and alſo part of the ſhot, from the table, and *vice verſâ* when the air is dry. Phil. Tranſ. N° 479. vol. xliv. p. 96.

From a ſeries of hygroſcopial obſervations, made with an apparatus of deal wood, deſcribed in the Philoſophical Tranſactions, N° 480, Mr. Coniers concludes, 1. That the wood ſhrinks moſt in ſummer, and ſwells moſt in winter, but is moſt liable to change at ſpring and fall. 2. That this motion happens chiefly in the day-time, there being ſcarcely any variation in the night. 3. That there is a motion even in dry weather, the wood ſwelling in the morning, and ſhrinking in the afternoon. 4. The wood, by night as well as day, uſually ſhrinks when the wind is in the north, north-eaſt, and eaſt, both in winter and ſummer. 5. That by conſtant obſervation of the motion and reſt of the wood, with the help of a thermometer, one may tell the ſituation of the wind without a weather-cock.

He adds that the time of the year may be known by it; for in ſpring it moves quicker and more than in winter; in ſummer it is more ſhrunk than in ſpring; and has leſs motion in autumn than in ſummer.

See an account of the method of conſtructing theſe and other hygrometers in Lowthorp's Abridg. Phil. Tranſ. vol. ii. p. 30, &c. and plate 1. annexed. See alſo Phil. Tranſ. vol. xliii. N° 473. p. 6, &c. vol. xliv. p. 169, and p. 184.

Dr. Hooke's hygrometer was made of the beard of a wild oat, ſet in a ſmall box, with a dial plate and an index. See his Micrographia, p. 150, &c.

An hygrometer of this kind may be conſtructed in the following manner. Let A B C D (*fig* 9.) be a ſquare braſs plate, about four inches ſquare, with a ring or circle fixed to it, graduated on the flat and the inner edge. I C repreſents a very light index of braſs or ſteel, with a ſmall cylindric lump in its centre, into which is faſtened the top of the beard of a wild oat, by a little peg, and the other end of it in another lump, about an inch under the plate, which, having a little hole under C, allows the beard of the oat to come through, in order to carry the hand, and yet keep it in its place, without hindering it to twiſt and untwiſt. There are alſo two wires coming down under the middle of the plate, which hold a little croſs bar, making a ſmall frame to carry the lump that holds the bottom of the beard expoſed to the air. The four feet of this inſtrument, two of which are ſeen at C, D, muſt be about one inch and a quarter long, to keep the frame under the plate from touching any thing which the inſtrument is ſet upon. AB, in *fig.* 10, repreſents the plate, F and F two of its feet, C and D the little lumps to which the wild oat-beard, C D, is faſtened; *e f* and *g h* the wires ſupporting the piece *f h*, and all together form an open frame, to hold the lump D. The beard paſſes through the hole *i*, in order to carry the index I *i*, which points to the degrees on the graduated circle A B.

The following hygrometer was contrived by Dr. Hales and Deſaguliers. P *c p w* C, (*fig.* 11.) is a piece of lignum vitæ, cylindric at C *w* P, but from C *w* to *p* a truncated cone, and ſcrewed like the fuzee of a watch, but not ſo taper. The length of the inſtrument is about a foot, the cylindric part an inch in diameter, and half an inch long; the large part of the ſcrew about three quarters of an inch, and the ſmall part half an inch; at each end there are fine ſteel pivots, bearing on two fine conic holes in braſſes in the frame that carries the inſtrument, that it may turn eaſily. A ſponge, S, hangs by a ſilk from the cylinder of the inſtrument, ſo as to turn it by its riſing or falling; a weight W, hanging from another ſilk *u*, coiled upon the ſcrew C *p*, keeps the ſponge in equilibrio. When the ſponge becomes heavier, by imbibing moiſture from the air, it runs down, and draws up W; but as W comes up, its ſtrings muſt advance towards C *w*, where, hanging farther from its centre, its power will be ſo increaſed, that it will keep the ſponge in equilibrio, though its weight be increaſed. But as the weight riſes, it will ſhew on the ſcale, D D, how much the ſponge is heavier, and conſequently the air moiſter. This inſtrument will be made ſtill more ſenſible, when its pivots are ſupported by four friction wheels. Salt of tartar, or any other ſalt, or pot-aſhes, may be put into the ſcale of a balance, and uſed inſtead of the ſponge. Deſag. Exp. Phil. vol. ii. p. 300.

In an hygrometer invented and deſcribed by Mr. Ferguſon, A A A A (*fig.* 12.) is a frame of wainſcot or mahogany, grooved in the longeſt ſides, to hold the pannel B B B B of white deal board, without pinching it. The pannel is about the thickneſs of a crown-piece, and fifteen inches long croſs-wiſe to the grain of the wood. The middle part projects at C and C, where it is faſtened into the frame by two ſcrews; ſo that this part always remains in the ſame place, whilſt the reſt of the pannel expands by moiſt air towards both ends of the frame, and contracts towards the middle, when the air is dry. To a pin at F is faſtened one end of a ſmall flexible cord D E, and the other end goes round the pulley G, and is fixed into the bottom of its groove at *h*. One end of another ſmall cord, I K, is fixed into the groove of the large pulley H, at *a*, going round the part *a i* H, and paſſing round to M, round a ſmall pulley L, the axis of which turns in the piece O, lying above it, and ſcrewed to the frame at C. To the end of the cord is ſuſpended a flattiſh weight N. The diameters of the pullies G and L are equal, and about one-tenth of the diameter of H. The diſtance of the pullies, G, and pin F, will determine the expanſion of the pannel between F and G: which will cauſe the pulley, G, to turn backward, and any point in H ten times as much; and in this proportion will the weight N be raiſed: therefore, if the pannel extend one-tenth of an inch by moiſt air, the pulley L will be turned quite round. As the air grows dry, the pannel contracts, the weight N deſcends, and turns all the pullies the contrary way. The back of the plate A A, (*fig.* 13.) is ſcrewed to the other ſide of the frame, ſo that the ſtraight edge of the plate may be even with the uppermoſt ſide of the frame, and the centre B may be directly over the centre of the pulley L (*fig.* 12.), on whoſe axis the index B C (*fig.* 13.) is fixed, which, by moving on the graduated edge of the plate, indicates the moiſture or dryneſs of the air. The pannel ſhould be changed in three or four years. (Phil. Tranſ. vol. liv. art. 47.) Mr. Smeaton has given the conſtruction of an hygrometer of cord: it is, doubtleſs, the beſt that has been publiſhed conſtituted of that ſubſtance.

Mr. Smeaton's hygrometer is exhibited in (*Plate* XIII. *figs.* 1 and 2. A B C (*fig.* 1.) is an orthographic delineation of the whole inſtrument ſeen in front, with the box-cover H, which defends the index, &c. from injury, and by a glaſs expoſes the ſcale to view. F G in both figures repreſents a flaxen cord, about 35 inches long, ſuſpended by the turning peg F, attached to a loop of braſs wire at A. This cord is that which is called by net makers in London *flaxen three-threads laid*, and is between one 20th and one 30th of an inch in diameter. It is previouſly boiled in a ſolution of two pennyweights troy of common ſalt in one pound avoirdupoiſe of water, boiled till the whole is reduced to ſix ounces avoirdupoiſe. The cord ſoaked in this brine is dried, and then ſtretched, by tying three or four yards of it to two nails againſt a wall, in a horizontal poſition, and hanging a weight of a pound or two to the middle. When it has remained in this poſition for a week or more in a room, it will be fit for uſe. G, I, (*fig.* 2.) are two loops, or long links of braſs-wire, laying hold of the index K L, which is moveable on a ſmall ſtud or centre K. The cord F G is kept moderately ſtrained by a weight M, about half a pound avoirdupoiſe. As the cord lengthens or ſhortens, the end of the index paſſes over the ſcale N Q, diſpoſed in the arc of a circle, and containing 100 equal diviſions. This ſcale is attached to the braſs ſliding ruler Q P, which moves upon the directing piece R R, fixed by ſcrews to the board, which makes the frame or baſe of the whole; and the ſcale and ruler, N Q P, are retained in any place nearer to or farther from the centre K, by the ſcrew S. *Fig.* 3. repreſents in profile the ſliding piece and ſtud I, which traverſes on that part of the index next the centre K; and which can, by the two ſcrews of the ſtud, be retained upon any part of the index that is made parallel, and which is done for three or four inches from the centre, for that purpoſe. The ſtud is filed to the edges like the fulcrum of a ſcale-beam, one being formed on the under-ſide, and the other upon the upper, as near as poſſible to one another. A hook formed at the lower end of the wire loops, G, I, retains the index by the lowermoſt end of the ſtud, while the weight M hangs by a ſmall hook upon the upper edge. By theſe means the index is kept ſteady, and the cords ſtrained by the weight, with very little friction or burthen upon the central ſtud K. *Fig.* 4. is a parallelogram of plate braſs to keep out duſt, which is attached to the upper edge of the box-cover H, and ſerves to ſhut the part of the cover, neceſſarily cut away, to give leave for the wire, G I, to traverſe with the ſliding ſtud (*fig.* 3.) nearer to or farther from the centre of the index K. In this (*fig.* 4.) there is a hole *a*, about one-fifth of an inch diameter, for the wire G I to paſs through, in the motion of the index, without touching; *b* is a ſlit of a leſſer ſize, ſufficient for the wire to paſs, and allow the cover to come off without deranging the end of the index; *c, c*, are two ſmall ſcrews applied to two ſlits, by which the plate ſlides lengthways, in order to adapt the hole *a* to the wire G I, at any place of the ſtud I, upon the index K L. This index is 12 inches long, four inches of which, from the extreme end, are filed ſo narrow, that any part of them may ſerve for an index to the diviſions of the ſcale; the ſcale itſelf alſo ſlides four inches. The directing piece, R R, is parallel to a line drawn from 0 upon the ſcale to the centre, K, of the index; conſequently, as the attenuated part of the index forms a part of a right line drawn from the ſame centre, whenever the index points to 0 upon the ſcale, though the ſcale be removed nearer to or farther from the centre of the index, yet it produces no change in the place to which the index points. When the divided arc of the ſcale is at 10 inches from the centre, which is its mean diſtance, then the centre of the arc and the centre of the index are coincident. At other diſtances, the extremes of which are eight or 12 inches, the centre of the diviſions, and the centre of the index, pointing to them, not being coincident, the index cannot move over ſpaces geometrically proportionable to one another in all ſituations of the ſcale; yet the whole ſcale not exceeding 30 degrees of a circle, it will be found, on computation, that the error can never be ſo great as $\frac{1}{100}$dth part of the ſcale, or one degree of the hygrometer.

For adjuſting the inſtrument, take off the box-cover, and ſet the inſtrument nearly upright about a yard from a moderate fire; there let it remain, till the index ſinks as low as it will go, ſtroking the cord occaſionally between the thumb and finger downwards. When it is become ſtationary, raiſe or depreſs the index by means of the peg at top, till it lies over the point 0; then remove the inſtrument from the fire, and with a camel-hair pencil dipped in warm water, moiſten the cord, without ſuffering any drops of wet to fall from it till it is ſaturated, and the index becomes ſtationary. If the index lies over the degree marked 100, all is right; if not, ſlacken the ſcrew S, and ſlide the ſcale nearer to or farther from the centre, till the point 100 come under the index, and the inſtrument is adjuſted for uſe. The intermediate ſpace muſt then be divided into equal parts. The adjuſtment may be repeated two or three times a year, or as often as may be judged neceſſary to adapt the ſcale to the exiſting capacity of the cord. If the compaſs of the ſlide be not ſufficient to effect this, ſlacken the proper ſcrews, and move the ſliding ſtud I nearer to or farther from the centre of the index, as the angle, formed by the index between the points of dry and wet, happens to be too ſmall or too large for the ſcale. Mr. Smeaton was led by obſervation to mark the point of 0 *dry*, 20° the *mean*, 40° *moiſt*, 70° *very moiſt*, and 100° *wet*. Phil. Tranſ. vol. lxi. part i. art. 24.

Other inſtruments of a more delicate and portable nature have ſince been invented. We may form an idea of the ſlow and gradual manner by which a cord of this kind loſes its power, by the reſult of a ſeries of experiments made by Mr. Dalton, and publiſhed in his Meteorological Eſſays, 1793. A piece of whip-cord, ſix yards long, was hung up in a room and thrown over a pulley; it was then ſtretched by a weight of three ounces for ſome months; after which an index and a ſcale of inches and decimals were attached to the end having the weight. A regular ſeries of obſervations were made on it three times a day for two years, and once a day for three ſucceeding years. The room was without fire, but airy.

The reſults are below: the higher numbers denote greater dryneſs, all other circumſtances being the ſame.

	1788	1789	1790	1791	1792
Annual means	9.33	10.77	11.21	11.59	11.92
Drieſt - -	13.8	14	14.1	14.4	15
Moiſteſt - -	1.5	6.3	7.1	6 5	8.3

The general monthly means for the five years were,

January - - - - -	7.93
February - - - - -	8.52
March - - - - -	10.27
April - - - - -	11 39
May - - - - -	12.38
June - - - - -	13.10
July - - - - -	12.42
Auguſt - - - - -	12.68
September - - - - -	11.72
October - - - - -	11.15
November - - - - -	10.2
December - - - - -	9.75

Hence it appears that a cord, in theſe circumſtances, increaſes every year in length, but leſs and leſs each year, and that the range of variation diminiſhes each year. The quantity, however, is ſuch as to render inſtruments of Smeaton's conſtruction occaſionally adjuſted very comparable.

Another ſtill more ſimple form of this ſort of hygrometer conſiſts of a ſhort piece of cord or cat-gut, from four to ten inches, ſuſpended by a hook over a horizontal board; to the lower end of the cord is fixed a horizontal index having a circular graduated ſcale on the board. As the cord attracts moiſture or the contrary, it twiſts or untwiſts, and thereby turns the index. On this principle, the Dutch toys, called weather-houſes, are made; one end of the index ſupports a ſmall image of a man, and the other that of a woman; the former appears, or is brought out, in wet weather, and the latter in fair weather.

M. de Luc ſome time ago conſtructed an hydrometer of ivory. The part of his hygrometer which is affected by the moiſture of the air, is a hollow tube of ivory *a a b* (*fig*. 5.) two inches eight lines long, and internally two lines and a half in diameter. This tube is open at the end *a a*, and cloſed at *b*, terminating in a point; and the thickneſs of its ſides, for the length of two inches ſix lines from the bottom, is but three ſixteenths of a line: it is this thin part which does the office of an hygrometer; the remaining part of the cylinder, towards its orifice *a a*, muſt be kept a little thicker, in order to bear the preſſure of a tube of glaſs, about fourteen inches long, the lower end of which is ſeen at *d d e e*. The internal diameter of this tube is about three-eighths of a line, and the outſide diameter about two lines, in order that the part *g g* of a braſs piece *f f g g*, through which it paſſes, and which is to enter into the ivory pipe, be as thick as poſſible. In order to hinder that part of the tube which incloſes the braſs piece from being affected by the variations of moiſture, it is covered with a braſs ferril *h h i i*. Theſe pieces are united together with gum lac or maſtich, which melts by the heating of the glaſs and braſs. M. de Luc's reaſon for chuſing ivory for his hygrometer, is, that this matter appeared to him more proper than any other for receiving the impreſſion of the moiſture of the air, without ſuffering thereby any material change. The cylinder made of it becomes more capacious, in proportion as it grows moiſter; and this is the fundamental principle of the inſtrument. M. de Luc has alſo found, that upon letting this cylinder lie for ſome time in water of an uniform temperature, it ſwells to a certain point, after which it dilates no farther. This circumſtance furniſhed him with a *maximum* of humidity; and, conſequently, with one point of compariſon in the ſcale of the hygrometer; and this point he has fixed at the temperature of melting ice. For meaſuring the differences in the capacity of this ivory cylinder, and thereby diſcovering its different degrees of moiſture, M. de Luc makes uſe of quickſilver, with which he fills the cylinder, and a part of the communicating glaſs tube. The more capacious this cylinder is, or, which is the ſame, the moiſter it is, the lower does the mercury ſtand in the glaſs tube, and *vice verſâ*. Now M. de Luc has found, that the loweſt point to which it can ſink, is that where it ſtands when the ivory cylinder is ſoaked in melting ice: he therefore names or graduates this point 0 in the ſcale of his hygrometer; and, conſequently, the degrees of this ſcale are degrees of dryneſs, counted from below upwards, as the quickſilver riſes in the glaſs tube. To give theſe degrees a determinate length, and thus to render the hygrometers capable of being compared with each other, M. de Luc employs in conſtructing them ſuch glaſs tubes as have been previouſly prepared, by being made into thermometers, and filled with mercury, ſo as to aſcertain upon them the points of melting ice and boiling water, and to take exactly the diſtance between theſe points by any ſcale at pleaſure. When this is done, the bulb of this preparatory thermometer muſt be broken, and the quickſilver it contains exactly weighed. It is by knowing the weight of this, together with the diſtance between the fixed points of the thermometer, that the ſcale of the hygrometer is determined. *E. gr.* Let the weight of the quickſilver be one ounce, and the diſtance between the above-mentioned points one thouſand parts of a certain ſcale; then ſuppoſe that the quickſilver in the hygrometer to which this tube is to be applied, weighs only half an ounce; this will give a fundamental line, conſiſting of 500 parts of the ſame ſcale. The fundamental line, thus found, is applied to the ſcale of the hygrometer, beginning at 0, and meaſuring it off about four times over, that the whole variation of the inſtrument may be comprehended. Each of thoſe ſpaces being afterwards divided into 40 equal parts, gives ſuch degrees as M. de Luc has found moſt convenient. In general terms, the length of the fundamental line of the hygrometer muſt be to the interval between the two fixed points of the preparatory thermometer, as the weight of the quickſilver in the hygrometer is to the weight of the quickſilver in that thermometer. This proportion between the ſcale of the hygrometer, and that of the preparatory thermometer, furniſhes an eaſy method of correcting in this inſtrument the effects of heat upon the mercury which it contains. It will eaſily be conceived, from the conſtruction of the ſcale of this hygrometer, that if its cylinder of ivory was ſuddenly changed into glaſs, the inſtrument would become a true thermometer, in which the interval between the points, anſwering to melting ice and boiling water, would be divided into 40 parts. If, therefore, a thermometer with a ſcale ſimilarly divided into 40 parts between the fixed points, be placed near the hygrometer, it will ſhew immediately the correction to be made on that inſtrument for its variations as a thermometer, under particular reſtrictions, which M. de Luc has ſtated.

The part of the frame of the inſtrument on which the ſcale is marked is immoveable; ſo that, before obſerving the point at which the mercury ſtands, it may be puſhed upwards or downwards, according as the thermometer has riſen or fallen with reſpect to the point of melting ice; and thus the indications of the hygrometer can at once be freed from the errors which would ariſe from the difference in the volume of the quickſilver, on account of the different degrees of heat.

For this purpoſe, at the top of this ſcale, there is an index over-againſt another ſmall ſcale, marked upon the unmoveable part of the frame: the degrees of this ſmall ſcale are eightieth parts of the fundamental line, and anſwering to the degrees of the thermometer on the ſame frame. When the index points to 0 of the ſmall ſcale, the thread which indicates upon the tube of the hygrometer the point to which the mercury ſunk in the melting ice, anſwers likewiſe to 0 in the ſcale of the hygrometer. See an elaborate account of the principles and advantages of this hygrometer, the particular proceſs of its conſtruction, and obſervations made with it by M. de Luc, in the Phil. Tranſ. vol. lxiii. part ii. art. 38.

The inſtrument, with its frame, is ſeen in *fig*. 6. It is mounted on deal, becauſe this wood ſuffers the leaſt change in the length of its fibres. The lower part of the frame is ſlit through the whole length of the ivory pipe, in order that the air may circulate freely round this pipe, and the bulb of an annexed thermometer. The hygrometer is faſtened in three parts, *viz*. at bottom on a ſmall bracket, at top by a tube paſſing through a piece either of hard wood or of metal faſtened by ſcrews, and chiefly by means of a braſs wire on the neck of the braſs piece, which unites the glaſs with the ivory pipe. This piece is laid in a ſmall plate of a hard wood, which in that place fills a groove originally made through the whole length of the board. To prevent duſt from getting through the opening of the tube, it is ſhut up in a ſmall ivory caſe. The ſcale of the hygrometer is marked upon a deal ſlip, which ſlides along the groove juſt mentioned. This and all the other parts of the frame muſt be lined with paper, for marking the neceſſary ſcales, and this paper is afterwards varniſhed over. The ſcale of the hygrometer is carried to the upper point, by means of a knob fixed on a ſmall piece of hard wood or metal ſcrewed to the bottom of the board, and which affords a free paſſage to the tube of the hygrometer.

Meſſrs. Sauſſure and De Luc have both ſucceſsfully proſecuted their inveſtigations in the ſcience of hygrometry. The former of theſe gentlemen wrote an eſſay on hygrometry, which was publiſhed in 1783. In this elaborate, and in many reſpects excellent work, Sauſſure contends for the ſuperiority of human *hair*, for the purpoſe of hygrometers. Hair, he finds, after it has been boiled in a weak alkaline lixivium, will expand by moiſture nearly $\frac{1}{40}$th of its length, and contract again by dryneſs; and that it is leſs liable to loſe this effect by time than moſt other ſubſtances, and is moreover, from its tenuity, very quickly reduced to the preſent ſtate of the atmoſphere. On theſe accounts he gives it the preference to other ſubſtances, and conſtructs his hygrometer with it accordingly. The principle of the conſtruction is to faſten one end of the hair to a fixed point, and the other to the arbor of a ſmall wheel, which carries a fine needle at one extremity; this needle points out, upon a graduated circular arch, the hygrometric degrees. The hair is ſtretched by a counterpoiſe of three or four grains, ſuſpended from the ſame arbor by a fine ſilk thread. A more particular deſcription of the conſtruction is given by the author, in reference to plate 1, fig. 1, of the eſſays. See *Plate* XIII. *Hydraulics*, *fig.* 7.

“ The inferior extremity of the hair, *a b*, is held by the mouth of the ſcrew-pincers, *b*; theſe pincers, repreſented ſeparately in B, terminate in a ſcrew, which enters into the female ſcrew at C: this ſcrew turns continually in its ſupporter, and ſerves to raiſe or depreſs B at pleaſure. The other extremity, *a*, of the hair is held by the inferior mouth of the double moveable pincers, repreſented ſeparately in A. Theſe pincers, at their lower mouth, take hold of the hair, and at their upper a fine well tempered ſilver wire, which is wound round the arbor *d*, which is repreſented ſeparately in D F. This arbor, which carries the needle *e e*, marked E in the ſeparate figure, is cut like a ſcrew, and the bottom of the thread is flat and cut ſquare to receive the ſilver wire faſtened to *a*, and connected to the hair. I was forced to uſe a ſilver wire, becauſe, when the hair was fixed to the cylinder and wound round it, it grew rough, and contracted a ſtiffneſs, which the counterpoiſe could not overcome; whereas, a well tempered ſilver wire always keeps the ſame flexibility. It was neceſſary to cut the arbor like a ſcrew, in order that this wire might not be wound upon itſelf and thicken the arbor, nor take a ſituation too oblique and variable. The wire is fixed to the arbor by a ſmall pin F. The other end of the arbor, D, has the form of a pulley, flat at the bottom, to receive a fine flexible ſilk thread, to which is ſuſpended the counterpoiſe marked *g* in the great figure, and G in the ſeparate figure. This counterpoiſe, intended to ſtretch the hair, acts in a direction contrary to that of the hair, and of the moveable pincers to which it is faſtened. If then it is deſired the hair ſhould be ſtretched with a weight of four grains, it is neceſſary the counterpoiſe ſhould weigh four grains more than the pincers. The ſame arbor paſſes on one end through the centre of the dial, and turns in a very ſmall hole upon a true and well poliſhed pivot. The other end has a ſimilar pivot, which is recieved in a hole made at the end of the arm *h* of the double ſquare *h i*, H I. This double ſquare is fixed behind to the dial by the ſcrew I. The dial *k e e k*, divided into 360 degrees, is ſupported by two ears *l*, *l*; theſe are ſoldered to two tubes, which ſurround the cylindric columns *m m*, *m m*. The ſcrews of preſſure, *n*, *n*, paſs through theſe tubes, and ſerve to fix the dial, and the arbor attached to it, to any deſired height. Theſe two columns which ſupport the dial, are firmly fixed to the baſe of the hygrometer, which reſts on the four ſcrews *o*, *o*, *o*, *o*, by which it may be placed in a vertical poſition. The ſquare column *p p*, which reſts upon the farther croſs bar of the baſe of the hygrometer, carries a box *q*, to which is fixed a kind of pencil caſe *r*, the vacuity of which is of the ſame diameter as the cylindric counterpoiſe *g*. When the hygrometer is to be tranſported from one place to another, and ſome fear may be entertained that the vibrations of the counterpoiſe may do harm, the caſe is raiſed to receive the counterpoiſe which is then fixed by the ſcrew preſs *s*, and the box itſelf is fixed by another ſcrew *t*. When the hygrometer is to act, the counterpoiſe is diſengaged and the box lowered, as in the figure. Laſtly, there is ſeen on the top of the inſtrument a piece of crooked metal *x y z*, which binds together the three columns juſt deſcribed. This piece is pierced in *y* with a ſquare hole, which is convenient when the hygrometer is to be ſuſpended.”

M. de Luc, however contends, in his “ Idées ſur la Meteorologie, 1786,” that hairs, and all other animal or vegetable hygrometric ſubſtances taken lengthwiſe, or in the direction of their fibres, undergo contrary changes from different variations of humidity; that when immerſed in water they lengthen firſt and then ſhorten; that when they are neareſt the extreme of humidity, they ſhorten with an increaſe and lengthen with a diminution of humidity. Theſe obſervations may be juſt; but the irregularities happening only in or near one extreme, and being ſmall, may be neglected. Sauſſure takes his point of extreme moiſture from the air confined under a glaſs bell, the ſides of which are kept moiſt: De Luc objects to this as not exhibiting the maximum of moiſture, and obſerves, that ſteam in an elaſtic ſtate does not render bodies moiſt, as is proved by the experience of Mr. Watt, who found that wood, expoſed to the ſteam of a ſteam-engine, was conſtantly dried and cracked as if expoſed to the fire. This objection can ſcarcely apply, however, to the caſe. For the ſteam in an engine is generally ſome degrees warmer than the temperature neceſſary for its ſupport as an elaſtic fluid, and a degree or two in temperature at the heat of the boiling water, have an infinitely greater effect in drying than they have at the ordinary temperature of the atmoſphere. Beſides, the point of extreme moiſture in a hygrometer ſhould moſt evidently indicate that ſtate of the atmoſphere when evaporation is at a ſtand, or the air is ſaturated with moiſture without any viſible depoſition of water. It cannot be ſuppoſed that there is any interval between ſaturation and precipitation. De Luc prefers whale-bone upon the whole for an hygrometer, and of that a ſmall thin ſlip cut acroſs the grain. The deſcription of his whale-bone hygrometer is given in the 81ſt vol. of the Philoſ. Tranſac. part ii. as follows.

The frame will be ſufficiently known from the figure (*fig.* 8.) therefore, we ſhall confine ourſelves to the deſcription of ſome particulars. “ The *ſlip of whale-bone* is repreſented by *a b*, and at its end, *a*, is ſeen a ſort of pincers made only of a flattened bent wire, tapering in the part that holds the ſlip, and preſſed by a ſliding ring. The end *b* is fixed to a moveable bar *c*, which is moved by a ſcrew for adjuſting at firſt the index. The end *a* of the ſlip is hooked to a thin braſs wire, to the other end of which is alſo hooked a very thin ſilver gilt *lamina*, that has at that end pincers ſimilar to thoſe of the ſlip, and which is fixed by the other end to the axis, by a pin in a proper hole. The ſpring *d*, by which the ſlip is ſtretched, is made of ſilver-gilt wire; it acts on the ſlip as a weight of about 12 grains, and with this advantage over a weight (beſides avoiding ſome other inconveniences) that in proportion as the ſlip is weakened with lengthenings by the penetration of moiſture, the ſpring, by unbending at the ſame time, loſes a part of its power. The axis has very ſmall pivots, the ſhoulders of which are prevented from coming againſt the frame, by the ends being confined, though freely, between the flat bearings of the heads of two ſcrews, the front one of which is ſeen near *e*." The ſection of that axis, of the ſize that belongs to a ſlip of about eight inches, is repreſented in fig. 9, the ſlip acts on the diameter *a a*, and the ſpring on the ſmaller diameter *b b*.

The point of extreme dryneſs is obtained in both inſtruments by incloſing them in a receiver of air, in which is a quantity of quicklime, which abſorbs the moiſture from the air and inſtrument; that of extreme moiſture is found by De Luc, by immerſing the inſtrument in water, or at leaſt by wetting the whale-bone with water; but it is found by Sauſſure as above deſcribed.

The mean height of De Luc's hygrometer, for the whole year, in London, is about 79°. The mean height of Sauſſure's at Paris, (according to Bouvard's obſervations) for 1807, was 81° 5′, the drieſt 53° and the moiſteſt 100°. The monthly means ſhew the air to be much drier in March, April, May, June, July, and Auguſt, than in the ſix ſucceeding months, every where in high north latitude.

2. *On the quantity of water abſorbed from the air by chemical agents having an affinity for it.*—Though the action of animal and vegetable fibres on the atmoſphere or the vapour in it muſt be of a chemical nature, yet in the inſtruments above noticed the *quantity* of waters abſorbed by them makes no part of their hiſtory. In ſome ſort of bodies however, the quantity of water they abſorb from the atmoſphere or part with into it, is the meaſure of their hygrometric action, and is determined by actually weighing the body expoſed to the atmoſphere. A ſponge, ſuſpended from the extremity of a balance beam, is heavier or lighter according to the hygrometrical ſtate of the air; ſulphuric acid, carbonate of potaſh, and other bodies, attract moiſture from the air in great abundance, and when ſaturated according to the exiſting ſtate of the atmoſphere, will give or take moiſture with the changes of the air, which of courſe may be determined by the balance. This ſort of inſtrument however, being leſs portable than the other, and ſubject to other inconveniencies, has been very generally abandoned.

3. *On the quantity of water evaporated under given circumſtances.*—Some philoſophers, conceiving that the beſt way to aſcertain the diſpoſition of the atmoſphere to receive moiſture, is to find by actual experiment how much water is evaporated from a given ſurface of water in a given time, have adopted this ſort of experience as the moſt direct and accurate method of obtaining one object of hygrometry. Suppoſing the labour to be no objection, the method would anſwer the purpoſe completely, were not the influence of a greater or leſs current of air of ſo much conſequence in evaporation. When the hygrometers, ſuch as have been deſcribed, indicate dry, there can be no doubt that the air is diſpoſed to quick evaporation; and it may be concluded converſely, that when evaporation is quick, an hygrometer would point to conſiderable dryneſs. It would be deſireable to aſcertain whether a direct ratio ſubſiſts between theſe two effects in any given temperature; and alſo whether a change of temperature would diſturb the ratio. Some account is given of a ſeries of experiments on evaporation under that head, and their application to the preſent ſubject is obvious; but it is unneceſſary to repeat them here.

4. *On the cold produced by the evaporation of water.*—Mr. Leſlie has propoſed a new hygrometer, or rather a new method of finding the rate of evaporation of water in the air; it may be ſeen in Nicholſon's Journal, 4to. vol. 2. or in the 35th vol. of the Annales de Chimie. It is founded on the principle that evaporation produces cold, and conſiſts of a kind of air-thermometer nicely adjuſted, the bulk of which, by being moiſtened with water, immediately cools to a lower degree in conſequence of the evaporation of the water, and the more the quicker the evaporation. Hence a law might be found to indicate, from the degree of cold produced, the rapidity of evaporation. If ſo, it would be a convenient ſubſtitute for the method pointed out in the preceding diviſion. The author has not yet developed the advantages of this inſtrument ſo as to bring it into general uſe.

5. *On the dew-point; or that point of temperature at or below which dew is depoſited from the atmoſphere upon glaſs or any other ſmooth ſubſtance.*—M. Le Roi was the firſt, according to Sauſſure, who made a practice to find the dew-point of the air with hygrometrical views; he uſed to take a glaſs nearly full of water; then he gradually put into it ice-cold water, till a dew was depoſited on the outſide of the glaſs, and noted the temperature of the water. This temperature may be called the dew-point. Inſtead of ice-water, Sauſſure uſed pounded ſal-ammoniac to cool the water; and a mixture of nitre and ſal-ammoniac is ſtill better. Sauſſure, however, conceives this expedient inſufficient to anſwer the purpoſes of an hygrometer; though he allows the value of it taken in conjunction with the others previouſly deſcribed. Of late Mr. Dalton has revived the practice of Le Roi, ſhewn the rationale of the experiment, and founded upon it a new ſyſtem of hygrometry. See Mancheſter Memoirs, vol. 5. part 2. pages 535 and 671: alſo vol. 1. *ſecond ſeries*, page 252. Some account of his views may be ſeen under EVAPORATION.

Mr. Dalton firſt eſtabliſhes the fact, which indeed had been ably maintained before by De Luc, that the extreme quantity and force of vapour, in a vacuum of given dimenſions, are the ſame as the extreme quantity of force of vapour in the ſame volume of any kind of air, *provided the temperature is the ſame in both caſes*. That is, aqueous vapour exiſts juſt the ſame whether air is preſent or abſent, and its maximum is regulated ſolely by the *temperature*, ſuppoſing water as a ſource always to be preſent. He finds experimentally the utmoſt force of ſteam in a vacuum for each temperature, from 0° to 212° of Fahrenheit or upwards. This force is expreſſed in inches and decimals of mercury, which it can ſupport in a barometer. When the force of ſteam in the air is required, it may be found from the dew-point; as this manifeſtly ſhews the temperature at which the ſteam of the air begins to be condenſed. For inſtance, ſuppoſe the dew-point is at 45°: then the extreme force of vapour of that temperature, in a vacuum or in air, is per table, .316 of an inch of mercury, or $\frac{1}{95}$th of the force of the atmoſphere. Or, in a given volume of air, the *weight* of the vapour is $\frac{1}{136}$th of the weight of the whole, allowing .7 for the ſpecific gravity of pure ſteam. Hence we ſee the great importance of the dew-point, as from it the quantity of ſteam in any given volume of atmoſpheric air may be determined. Mr. Dalton extends his principles ſtill farther than this; he not only determines the quantity of vapour in a given volume of air, as above, for the dew-point, but he finds the whole quantity of ſteam in a column reaching to the top of the atmoſphere; he argues, that as in an atmoſphere of pure ſteam the force of it at the earth's ſurface would be its weight, ſo in a mixture of atmoſphere, ſtill the elaſtic force of each at the earth's ſurface is the weight of the whole atmoſphere of that kind. Hence, in the above inſtance, the weight of the incumbent aqueous vapours in the atmoſphere is $\frac{1}{95}$th of the whole weight of the atmoſphere, and is equal to 4.3 inches of water. That is, if a perpendicular column of air to the top of the atmoſphere had the whole of its ſteam (or water) precipitated to the bottom, leaving the air perfectly dry, the depth of the water ſo precipitated would be $4\frac{1}{3}$d inches nearly.

Thus it appears of what uſe is the dew-point in finding the quantity of water actually exiſting in the atmoſphere at any time in the form of ſteam or elaſtic vapour, which is the firſt great object of hygrometry. But the uſe of the dew-point in aſcertaining the other great object of hygrometry may be eaſily ſhewn. Mr. Dalton has proved, in the Eſſays above-mentioned, that the quantity of water evaporated from any given ſurface is proportional to the maximum force of vapour at the temperature which the ſurface has, the vapour being always underſtood to be in contact with water. But that if the force of ſteam be ſmall, as in low temperatures, then the force of the ſteam already exiſting in the atmoſphere muſt be deducted from the former, as having great influence in this laſt caſe, but very little in other caſes where the evaporating force is comparatively large. Thus for inſtance, taking the dew-point at 45° as before, and aſſuming the temperature of the air at the ſame time to be 50°; we have .375 − .316 = .059 for the evaporating force; but if the temperature was 54°, 58°, or 62°, the evaporating force would be 2.3, or four times as great reſpectively. This force does not, however, increaſe directly with the temperature; as 5° above 45 only produce the ſame evaporating force as 3° above 65 would produce, or as $\frac{1}{4}$th of a degree above 162 would produce. Hence principally ariſes the much greater evaporation in ſummer than in winter.

In the Eſſays above referred to, Mr. Dalton has given an abſtract of a ſeries of obſervations on the dew-point for Mancheſter, lat. 53° 20′ N., which it may be proper to ſubjoin.

1800. July. Mean dew-point for 21 days = 53°, higheſt 62°, loweſt 40°.
Aug. Mean for 11 days = 56°, but too high for the monthly mean; higheſt 60°.
Sept. Dew-point above 50° for 6 days; higheſt 60°.
Oct. Dew-point moſtly below 52°, higheſt 59°.
1801. May. Dew-point above 50° for 4 days; higheſt 55°.
June. Mean for 10 days 49°½; higheſt 57°½; loweſt 30°.*
July. Mean for 8 days 53°; higheſt 56°.
Aug. Mean for 22 days 54°½; higheſt 61°.
Sept. Mean for 14 days 54°; higheſt 60°.
Oct. Dew-point for 5 days above 50°; higheſt 57°.
Nov. Higheſt 54°; loweſt 22°.
Dec. Higheſt 44°; loweſt 18°.

* On the 13th, great damage done to potatoes, &c. by the cold which accompanied this remarkably low ſtate of vapour for the ſeaſon. The dew-point was 46° on the 12th, and 40° on the 14th.

In order to make the obſervations on the dew-point ſubſervient to the purpoſe of a complete hygrometer, that is, one to denote both the actual quantity of vapour in the air, and the rate at which evaporation is going on, it is neceſſary to notice the temperature of the air at the time of obſervation. In a ſeries of meteorological obſervations this would be almoſt matter of courſe. Then the rate of evaporation obtained as above would indicate the drying power of the air at the time. A ſeries of hygrometrical obſervations might then be thrown into the following form. The numbers in the laſt column are all multiplied by 100, to make them more ſuitable to common notation.

Temperature of the Air.			Hygrometer.		
			Dew-point.	Correſponding quantity of Water in a vertical Column of the Atmoſphere.	Evaporating force.
				Inches in depth	
June 1.	Morn.	50°	45°	4.30	5.9
	Noon	70	45	4.30	40.5
	Even.	60	45	4.30	20.8
2.	Morn.	50	48	4.77	2.4
	Noon	65	50	5.10	24.1
	Even.	54	49	4.92	6.6

Sauſſure determined by ſome very important experiments the quantity of water in a cubic foot of air at the temperature 66°, both by abſtracting the vapour from ſaturated air, and by ſaturating previouſly dried air. The reſults agree very nearly with the above theory. But when he attempted to aſcertain the quantity of vapour in other temperatures, above and below, by means of his hygrometer, not by direct experiment, he did not ſucceed; at leaſt the reſults will not agree with thoſe deduced as above. He finds the quantities of water too large in the lower temperatures, and too ſmall in the higher. This will be ſhewn by the following table.

TABLE of the Quantity of aqueous Vapour in the Atmoſphere at different Temperatures.

Dew-point. Temperature.	Water in a cubic Foot of air, in Grains, according to		Whole Quantity of Vapour in a vertical Column to the Top of the Atmoſphere, being condenſed into Water, according to Dalton, amounts to
	Sauſſure.	Dalton.	
			Inches in Depth.
0°	—	.81	.88
5	—	.96	1.04
10	2.6	1.13	1.22
15	2.8	1.36	1.56
20	3.1	1.62	1.74
25	3.4	1.97	2.11
30	3.7	2.34	2.53
32°	3.9	2.52	2.72
35	4.1	2.78	3.00
40	4.5	3.33	3.57
45	5.0	3.98	4.30
50	5.5	4.77	5.15
55	6.1	5.58	6.02
60	6.7	6.60	7.13
65	7.4	7.76	8.38
70	8.0	9.08	9.80
75	8.7	10.72	11.58
80	9.5	12.60	13.62

In the conſtruction of this table, the force of vapour is taken from the table in the Mancheſter Memoirs, vol. v. part 2, and it is ſuppoſed to reſult from the preſſure of an atmoſphere of ſteam, when the fourth vertical column is calculated. The ſpecific gravity of ſteam is ſuppoſed to be .7, that of common air being 1. Sauſſure's table in his Hygrometry, 8vo, page 261, is reduced from French grains and feet to Engliſh, by multiplying by two, and dividing by three; the grains which he gives as contained in ſaturated air. A reduction is alſo made from Reaumur's ſcale to Fahrenheit's.

Mr. B. M. Forſter has favoured us with the following deſcription of the winding oat-beard *hygrometer*.

The principal differences in this hygrometer from thoſe uſually made of oat-beards are the following.

The graduated circle (*Plate* XIII. *Hydraulics*, *fig.* 2.) is numbered *completely round* inſtead of *half round* each way, as uſual. On the top of the oat-beard, (the *avena ſterilis* of Linnæus, preferred on account of its ſize to the common oat,) is cemented a circular piece of paper A, on which is fixed a tubular piece of ſtraw B, which is capped with another piece of paper C: D is a ſupport to keep the beard upright, made of card paper. On the ſtraw tube, or little cylinder, is faſtened a piece of fine ſilken ſtring, on which is hung a pea, to ſerve as a weight to keep the ſtring ſtretched.

As the oat-beard untwiſts with moiſture, the index (made of ſtraw) moves the ſame way round as the hand of a watch, and thus moving coils the ſtring round the ſtraw tube or axis, by which means the number of revolutions from any time obſerved may be known, and thus the confuſion will be avoided, which is occaſioned by the index moving more than once round, which it does in paſſing from extreme dryneſs to wet.

The ſpring may be ſo placed as to wind *up* when the index moves the contrary way, that is, from moiſt to dry, if the maker ſo chuſes; and in this caſe the circle muſt be numbered the contrary way from the above. The oat-beard is *fixed*, and the index is not to be turned or ſet to a certain point, as is the caſe with the common hygrometer, by a contrivance behind the caſe. The method of keeping a regiſter of this hygrometer will be thus.

When on the upper part of the axis there is one coil, and
the index points at - - - 6, ſet down 1 – 6.
two coils - - - - 6, ——— 2 – 6. &c.

If the circle be divided into 100 diviſions, the reckoning
will be no coil, and the hand at 10 ſet down 10,
1 Coil - - 10 ——— 110,
2 Coils - - 10 ——— 210, &c.
which, if the circle be large enough, will be a very convenient mode of regiſtering. An account of this inſtrument was communicated by the inventor to the editor of the Philoſophical Magazine. See vol. xi. p. 167.

Kater's *hygrometer*, as conſtructed by Mr. Thomas Jones, of Kenton-ſtreet. (See *fig.* 3.) The ſubſtance of which this hygrometer is compoſed, was diſcovered in India by captain Kater about the year 1800; and is the Andropogon contortum of Linnæus, a ſpecies of graſs, and is called in the Myſore country, in the Canareſe language, "Oobeena Hooloo." It is beſt when gathered in the month of January, and ſhould be thoroughly dried in the ſun (in India) before it is uſed. While captain Kater was in India he had one made, which he uſed with great effect, for the refraction, during a ſeries of obſervations, which he was then officially employed in making. The inſtrument was deſcribed in the Aſiatic Reſearches, and was afterwards brought to England in the year 1806. Mr. Thomas Jones then made ſeveral on that plan; but it is now laid aſide in conſequence of a ſuperior method which he has contrived. It may be proper to remark, that this hygrometric ſubſtance acts in the ſame manner as our beard of the Engliſh oat, but it poſſeſſes much greater durability, and is exceedingly ſenſible, making from eight to twelve revolutions from extreme dry to extreme moiſt, ſimply of itſelf, without the means of an increaſed ſcale, by wheels and pinions. Each of thoſe revolutions being divided into one hundred parts, gives the obſerver a ſcale of from 800 to 1200 parts from dry to moiſt, being an extent of ſcale which no other hygrometer poſſeſſes. The revolutions and parts are ſeen on a dial plate by means of two ſmall hands. The inſtrument is of a cylindrical form, one inch and a half in diameter, and two inches long, extremely portable, and not in the leaſt liable to injury in travelling in a carriage. Its ſenſibility is ſo great, that it may be truly ſaid to be hardly ever at reſt in the open air, particularly in the ſummer ſeaſon, when the opening or ſhutting a door or window, or the approach of a perſon, is ſure to be indicated. Perhaps it may not be amiſs to remark, that it is ſenſibly affected in the hand of a perſon who may be in health or otherwiſe. The great ſenſibility of this inſtrument makes it particularly valuable where ſmall quantities of moiſture, &c. are required to be meaſured, in chemical or philoſophical experiments; likewiſe for agricultural operations, and iron, ſteel, and cotton manufactories, &c. &c.

HYGROPHILA, in *Botany*, ſo named by Mr. Brown, from ὑγρος, *wet*, and φιλεω, *to love*, or *delight in*, becauſe of the attachment of this genus to a moiſt, marſhy ſoil. Brown. Prodr. Nov. Holl. v. 1. 479.—Claſs and order, *Didynamia Angioſpermia*. Nat. Ord. *Perſonatæ*, Linn. *Acanthi*, Juſſ.

Eſſ. Ch. Calyx tubular, half five-cleft, equal. Corolla ringent. Cells of the anthers parallel, unarmed. Seeds ſeveral in each cell. Partition attached to the valves.

This genus is removed from *Ruellia* on account of the ringent corolla and tubular calyx, which latter ſeparates moreover into five deep ſegments, in conſequence of the ſwelling of the capſule. R. *ringens* of Linnæus is one ſpecies, for which the Flora Zeylanica of that author, and the Hortus Malabaricus of Rheede, are, according to Mr. Brown, improperly quoted in the Species Plantarum. Another ſpecies, very nearly allied to the former, is

H. *anguſtifolia* of Brown. "Leaves lanceolate-linear, approximated in pairs, with hairy axillas. Upper joints of the ſtem ſhorter than the corolla. Found by ſir Joſeph Banks in the tropical part of New Holland.

Theſe are cauleſcent plants, with narrow leaves, and axillary, crowded, nearly ſeſſile flowers. The bracteas are ſmall and fringed. Capſule ſeſſile, its valves compreſſed at the back. Each ſeed is ſupported by a ſmall prop, or elaſtic appendage.

HYGROPHOBIA, in *Medicine*, is ſometimes uſed in the ſame ſenſe with hydrophobia.

HYGROSCOPE, compounded of ὑγρος, *moiſt*, and σκοπεω, *I obſerve*, or *conſider*, is commonly uſed in the ſame ſenſe with *hygrometer*, which ſee.

Wolfius, however, regarding the etymology of the word, makes ſome difference. According to him, the hygroſcope only ſhews the alterations of the air in reſpect of humidity and dryneſs; but the hygrometer meaſures them. A hygroſcope, therefore, is a leſs accurate hygrometer.

HYIOTES, Ὑιοτης, *Filiation*. See Adoption.

HYKES, a ſort of blankets, in great uſe among the natives of Barbary. They are woven by the women, who make no uſe of a ſhuttle therein, but conduct every thread of the woof with their fingers. One of theſe hykes is uſually ſix yards long, and five or ſix broad, ſerving the Kabyle as well as Arab, both male and female, for a complete dreſs in the day, and for his bed and covering in the night. It is a looſe and troubleſome kind of garment, being frequently diſconcerted, and falling on the ground, ſo that the wearer is every moment to be taking it up, and folding it anew round his body. Dr. Shaw (Trav. p. 286.) takes it to be much the ſame with the peplus, if not with the toga, of the ancients.

HYLÆA, in *Ancient Geography*, a country of Europe, in Scythia.

HYLARCHIUS, formed of ὑλη, *matter*, and αρχη, *government*, or *hylarchic principle*, a word by which ſome authors expreſs what they call a ruling and preſiding ſpirit, which governs and actuates all matter. See Plastic.

HYLAS, in *Ancient Geography*, a river, fountain, and lake in Bithynia.

Hylas, in *Biography*, a muſician and a dancer, brought up at Rome, under Pylades the Pantomime, and paſſionately beloved by him. He was ſo vain of his talents, that he arrogantly challenged his maſter. The challenge was accepted, the day fixed, and all Rome thronged to the theatre.

The two actors had to repreſent Agamemnon. The young Hylas, to add to his ſtature, had buſkins on, which made him taller than uſual, and he ſtood a tip-toe on the ſtage with all his might. The Roman youth were in raptures, and applauded with unbounded fury, crying out that he was divine!

Pylades then appeared, with a noble and dignified countenance, expreſſing by his ſteps and geſtures, all the different ſentiments which occupied the mind of the great king. The ſpectators, unanimouſly impelled by an irreſiſtible approbation, rapturouſly cried out that he had obtained the victory. "Young man," ſays Pylades to Hylas, "we had to repreſent a king who commanded twenty kings; you have made him tall, and I have made him great."

HYLE, or Hylec, from ὑλη, which ſignifies *matter*, among *Alchemiſts*, is their firſt matter, or it is matter conſidered as produced by nature herſelf; called alſo chaos.

HYLEG, or Hylech, in *Aſtrology*, an Arabic term for a planet, or for a point of the heavens, which in a man's nativity becomes, as is pretended, the moderator and ſignificator of life.

HYLEGIAL Places, among *Aſtrologers*, are thoſe wherein a planet being found, is qualified to have the government of life attributed to it.

HYLLEHROG, in *Geography*, a very narrow iſland, about three miles long, on the Baltic, near the S. coaſt of Lapland. N. lat. 54° 36′. E. long. 11° 32′.

HYLLIS, in *Ancient Geography*, a peninſula, called alſo the "Promontory of Diomedes," a cape of Liburnia, on the Adriatic ſea.

HYLOBII, or Hylobians, compounded of ὑλη, which, beſides *matter*, ſignifies alſo *wood*, *foreſt*, and βιος, *life*, a ſect of Indian philoſophers, thus denominated by the Greeks, becauſe they retired to foreſts, to be more at leiſure for the contemplation of nature

HYLOPATHIANS, formed of ὑλη, *matter*, and παθος, of πασχω, *I ſuffer*. See the following article, and Anaximandrians.

HOLOZOISTS, formed of ὑλη, *matter*, and ζωη, *life*, the name of a ſect of atheiſts among the ancient Greek philoſophers, who held matter to be animated; maintaining that matter had ſome natural perception, without animal ſenſation, or reflection, in itſelf conſidered; but that this imperfect life occaſioned that organization, whence ſenſation and reflection afterwards aroſe. Of theſe, ſome held only one life which they called a *plaſtic* nature, preſiding regularly and invariably over the whole corporeal univerſe, which they repreſented as a kind of large plant or vegetable: theſe were called the coſmoplaſtic and ſtoical atheiſts, becauſe the Stoics held ſuch a nature, though many of them ſuppoſed it to be the inſtrument of the Deity. Others thought that every particle of matter was endued with life, and made the mundane ſyſtem to depend upon a certain mixture of chance and plaſtic or orderly nature united together. Theſe were called the Stratonici, from Strato Lampſacenus, a diſciple of Theophraſtus, called alſo Phyſicus, (Cicero, De Nat. Deor. lib. i. cap. 13.) who was firſt a celebrated Peripatetic, and afterwards formed this new ſyſtem of atheiſm for himſelf. Beſides theſe two forms of atheiſm, ſome of the ancient philoſophers were Hylopathians, or Anaximandrians, deriving all things from dead and ſtupid matter, in the way of qualities and forms, generable and corruptible; and others again adopted the anatomical or Democritical ſyſtem, who aſcribe the production of the univerſe to atoms and figures. See on this ſubject Cudworth's Intellectual Syſtem, vol. i. book i. chap. 3. Birch's edit. 1743.

HYLOGYNÆ and Hylophagi, in *Ancient Geography*, a people of Ethiopia, who lived near one another, and were diſtinguiſhed by ſimilar manners; they made their habitations in the trees during the night for fear of wild beaſts. Diodorus has deſcribed them.

HYMÆAS, in the *Ancient Greek Muſic*. See Epiaulia.

HYMEN, in *Anatomy*, from ὑμην, *a membrane*, a fold of membrane of various ſizes in different individuals, cloſing to a greater or leſs degree the entrance of the vagina in the virgin, but not found after marriage. See Generation.

Hymen, *Imperforate*. See Vagina, *Imperforate*.

Hymen, in *Botany*, is uſed for a fine, delicate ſkin, wherewith flowers are incloſed while in the bud, and which burſts as the flower blows or opens.

The term hymen, in this ſenſe, is particularly uſed in ſpeaking of roſes.

Hymen, in *Mythology* and *Poetry*, a term of invocation. Hymen, or Hymenæus, is properly a fabulous divinity, ſuppoſed by the ancients to preſide over marriages; and who accordingly was invoked in epithalamiums, and other matrimonial ceremonies, under the formula, *Hymen o Hymenæe!*

The poets generally crown this deity with a chaplet, ſometimes of roſes, at other times of ſweet marjoram; and repreſent him, as it were, diſſolved and enervated with pleaſures; dreſſed in a yellow robe, and ſhoes of the ſame colour, with a torch in his right-hand, and a flame-coloured veil in his left. Catullus, in one of his epigrams, addreſſes him thus:

> "Cinge tempora floribus,
> Suaveolentis amaraci."

It was for this reaſon, that the new married couple bore garlands of flowers on the wedding day; which cuſtom alſo obtained among the Hebrews, and even among the Chriſtians during the firſt ages of the church, as appears from Tertullian, De Corona Militari, where he ſays *Coronant et nuptæ ſponſos*. St. Chryſoſtom likewiſe mentions theſe crowns of flowers; and to this day the Greeks call marriages ςεφανωμα, in reſpect of this crown or garland.

HYMENÆA, in *Botany*, from Hymen, the god of marriage, becauſe, as Linnæus informs us, its younger leaves cohere together in pairs throughout the night. This genus is the *Courbaril* of Plumier, who adopted that barbarous term from the inhabitants of South America, where the plant grows ſpontaneouſly. May not the ſimilitude which its gum, when burnt, bears to the torch of Hymen, by emitting a clear flame, and grateful ſmell, be another ſatisfactory explanation of the above name?—Linn. Gen. 206. Schreb. 276. Willd. Sp. Pl. v. 2. 512. Mart. Mill. Dict. v. 2.

v. 2. Ait. Hort. Kew. v. 2. 49. Juſſ. 351. Lamarck. Illuſtr. t. 330. Gærtn. t. 145.—Claſs and order, *Decandria Monogynia*. Nat. Ord. *Lomentaceæ*, Linn. *Leguminoſæ*, Juſſ.

Gen. Ch. *Cal.* Perianth of one leaf, leathery; tube ſhort, turbinate, compreſſed, permanent, having an oblique mouth; limb four-cleft, nearly equal, erect, deciduous; ſegments ovate, obtuſe, two oppoſite ones flattiſh, a little broader; the two others concave, with one ſide narrower. *Cor.* ſomewhat papilionaceous, of five, nearly equal petals, inſerted into the neck of the calyx; ſtandard, the two uppermoſt petals obliquely ovate, obtuſe, ſeſſile, at the upper concave ſegment of the calyx; wings, two petals, ſimilar, lateral, a little narrower; keel, the bottom petal, channelled or hollowed out, approximating to the wings, within the lower concave ſegment of the calyx. *Stam.* Filaments ten, diſtinct, awl ſhaped, erect, deflexed nearly half way down, very long, within the keel and wings, inſerted into the neck of the calyx; anthers linear, affixed to the back. *Piſt.* Germen ſabre-ſhaped, compreſſed, ſtanding on a ſtalk; ſtyle very long, taper, deflexed; ſtigma thickened, obliquely truncated. *Peric.* Legume very large, ovate-oblong, obtuſe, of one cell, filled with a powdery pulp. *Seeds* many, ovate, imbedded in duſt and fibres.

Obſ. Schreber has paid great attention to the above generic character, which is conſiderably dilated beyond the Linnæan deſcription.

Eſſ. Ch. Calyx five-cleft. Petals five, nearly equal. Style twiſted inwards. Legume filled with a farinaceous pulp.

1. *H. Courbaril.* Locuſt-tree. Linn. Sp. Pl. 537. (Courbaril; Plum. Gen. 49. t. 36. Ceratia diphyllos; Pluk. Phyt. t. 82. f. 3.)—Native of the Weſt India iſlands, and the continent of America. A large ſpreading tree, its thick *ſtem* being covered with a ruſſet *bark*. It is eſteemed an excellent timber-tree if ſuffered to be old before it is felled. *Leaves* in pairs, pointed. *Flowers* in looſe panicles at the end of the branches, of a yellow colour, ſtriped with purple. *Pods* fleſhy, brown, ſhaped like the common garden bean, about ſix inches long and half as broad, of a purpliſh brown colour and woody conſiſtence, each containing a few ſeeds ſeparated by tranſverſe partitions, and incloſed in a whitiſh ſubſtance, intermixed with filaments, as ſweet as honey, which is eaten by the Indians with great avidity. Between the principal roots of the tree exudes a fine tranſparent reſin, yellowiſh or red, which is the *Gum Anime* of our ſhops. This is the fineſt varniſh known, when diſſolved in rectified ſpirits of wine. It has been remarked that the wild-bees are very fond of building their neſts in the branches of this tree. Its wood is in great requeſt for wheel-work in the ſugar-mills, particularly for cogs to the wheels, being extremely hard and tough, as well as capable of a fine poliſh. It is ſo heavy that a cubic foot of it weighs about a quarter of an hundred weight. The *Hymenæa* is a very tender ſtove-plant, and muſt conſtantly remain in the tan-bed. In growth it is very like the *Anacardium*, or Caſhew-nut.

Willdenow has deſcribed two other ſpecies, *H. venoſa* of Vahl, and *H. verrucoſa* of Gærtner; the former brought from Cayenne, the latter from Madagaſcar, but they both nearly reſemble the Courbaril, nor have we materials ſufficient to decide concerning them.

HYMENÆUM, in the *Ancient Greek Muſic*, the nuptial ſong or epithalamium.

HYMENIUM, in *Botanical* phraſeology, from ὑμην, a *membrane*, is uſed by Perſoon for the membranous ſmooth expanded ſurface in which the ſeeds of Fungi are imbedded. See Fungi.

HYMENODES, of ὑμην, *membrane*, and ειδος, *form*, an epithet applied by the old authors to ſuch urine as is found to be full of little films and pellicles. Hippocrates alſo applies it to the menſtrual diſcharges, when they are mixed with a tough viſcid phlegm.

HYMENOPAPPUS, in *Botany*, from ὑμην, *a film* or *membrane*, and παππος, *the ſeed-down*, ſo called by l'Heritier from the crown of its ſeed being compoſed of membranous leaves or ſcales.—Willd. Sp. Pl. v. 3. 1776. L'Herit. Monograph.—Michaux Boreal. Amer. v. 2. 103. (Rothia; Lamarck. Illuſtr. t. 667.) Claſs and order, *Syngeneſia Polygamia Æqualis*. Nat. Ord. *Compoſitæ diſcoideæ*, Linn. *Corymbiferæ*, Juſſ.

Gen. Ch. *Common calyx* of many leaves, ſet in a double row, theſe leaves are looſely ſpreading, oblong, obtuſe, green and downy at the baſe, white above, permanent. *Cor.* compound, tubular, uniform; florets all ſimilar, perfect, fertile, longer than the calyx, funnel-ſhaped, hairy on the outſide; tube thread-ſhaped; limb five-cleft, lanceolate, acute, revolute. *Stam.* Filaments five, capillary, erect; united anthers cylindrical, tubular, five-toothed, as long as the florets. *Piſt.* Germen inferior, turbinate, hairy, crowned with the ſeed-down, and terminated by a roundiſh body which the thread-ſhaped ſtyle perforates; ſtigma on the outſide, bifid, revolute. *Peric.* none, except the permanent calyx. *Seeds* ſolitary, angulated, truncated, elevated by the diſk in two concentric rows, umbilicated, villoſe, brown; down of 12 or 15 approximating, erect, ovate, concave, ſomewhat torn or entire, membranous, pellucid ſcales. *Recept.* naked, rather ſmall.

Eſſ. Ch. Receptacle naked. Seed-down of many ſcales, chaffy. Calyx of many leaves, ſpreading.

1. *H. ſcabioſæus.* L'Heritier Monog. cum icone.—Native of Carolina, flowering towards the end of autumn. *Root* annual, ſomewhat tapering, and fleſhy, a little branched at the ſides, of a cheſnut colour. *Stem* erect, branching, angulated, rather woolly, two feet high. *Leaves* alternate; radical ones on footſtalks; ſtem-leaves gradually ſeſſile, bipinnatifid; ſegments lanceolate, acute, green above dotted with little tubercles; downy and grey beneath; ſpreading. *Flowers* forming a corymbus, white, very fragrant.

The publication of l'Heritier, in which this new genus is founded and delineated, is one of thoſe monographs, of which twelve copies only were printed, mentioned in our account of that author. See L'Heritier.—Lamarck has deſcribed the ſame plant under the name of *Rothia caroliniensis*, in the Journal d'Hiſt. Nat. vol. i.

HYMENOPHYLLUM, from ὑμην, *a film*, or *membrane*, and φυλλον, *a leaf*, becauſe the foliage of this fern is remarkable for its filmy texture. Sm. Mem. of the Turin Acad. v. 5. 418. t. 9. f. 8. Tracts on Nat. Hiſt. 256. Fl. Brit. v. 3. 1141. (Trichomanes; Linn. Gen. 560. Juſſ. 16.)—Claſs and order, *Cryptogamia Filices*. Nat. Ord. *Filices*, Linn. Juſſ.

Gen. Ch. Fructifications inſerted into the margin of the frond, diſtinct. *Involucrum* two-valved, flattiſh, ſtraight, opening outwards, including the column.

Eſſ. Ch. Fructifications placed at the edge of the frond. Involucrum of two valves, opening outwardly.

Obſ. "The bivalve involucrum and ſhort column ſo diſtinct from the urn-ſhaped undivided involucrum, and long column or ſtyle, of the true Trichomanes," have induced Dr. Smith to eſtabliſh this new genus in his diſſertation on Ferns, printed by the academy of Turin.

1. *H. Tunbridgenſe.* Tunbridge Filmy-leaf. Sm. Fl. Brit. 1141. Engl. Bot. t. 162. (Trichomanes Tunbridgenſe; Linn. Sp. Pl. 1561.)—"Fronds alternately bipinnate, decurrent, ſharply ſerrated as well as the involucrum. Fructifications ſolitary at the upper edge of the baſe of each general diviſion of the frond."—A native of moiſt and ſhady

rocks which it clothes in large tufts in Wales, Weſtmoreland, and the north of Yorkſhire, and alſo by Powers-court caſcade near Dublin, but more eſpecially about Tunbridge, which is its original habitat. It flowers in May and June.—*Root* creeping, capillary, wiry, throwing out fibres occaſionally and producing numerous upright *fronds*, which curl backwards from drought. Their ſubſtance is extremely membranous and pellucid, appearing finely reticulated under a microſcope; their ſegments linear, ſharply ſerrated and furniſhed with a ſtrong central rib. *Fructifications* in the place of the firſt ſegment, each terminating its appropriate nerve and pointing upwards. *Involucrum* ariſing from the ſubſtance of the leaf, of two ſlightly concave valves, between which is a ſhort column, beſet with ſmall, round, bivalve capſules, each embraced with an elaſtic ring as in the more common ferns.

2. *H. alatum.* Wing-ſtalked Filmy-leaf. Engl. Bot. t. 1417. (H. Tunbridgenſe β. Sm. Fl. Brit. 1142.)—"Fronds tripinnate, lobed, decurrent; ſegments linear, bluntiſh, entire. Main ſtalk and branches winged. *Fructifications* oblong, crenate, ſolitary at the upper edge of the baſe of each ſubdiviſion of the frond."—Gathered in the county of Kerry, by Mr. Mackay, gardener to the botanic garden at Dublin.—This rare fern manifeſtly differs from the laſt in having a larger and more compound frond, and in its *main ſtalk* being winged from the very bottom; but more eſpecially in the margin of the ſegments being always entire, and in the *involucrum* or *calyx* being oblong and cylindrical, not obovate and compreſſed, except towards the ſummit; neither is its margin ſerrated or toothed, but ſlightly and obtuſely crenate. Dr. Smith remarks of this ſpecies, "Few of our Britiſh plants have been more enveloped in doubt than this; very few could better repay the ſcrutiny of the curious botaniſt." We are now competent to deſcribe it as a new ſpecies, for it does not agree with the character of any *Hymenophyllum* in Dr. Swartz's Eſſay on Ferns in Schrader's Journal. Dr. Swartz has there deſcribed 20 ſpecies, but the only two Britiſh ones known may ſerve as a ſufficient epitome of the genus. We muſt not omit to mention that Mr. Brown, in his Prodr. Nov. Holl. v. 1. 159, refers the *H. alatum* to *Trichomanes*.

HYMENOPTERA, in *Entomology*, an order inſtituted by Linnæus for the reception of thoſe inſects which have four membranaceous wings, and the abdomen of the female moſtly armed with a ſting. The genera are cynips, tenthredo, ſirex, ichneumon, ſphex, ammophila, ſcolia, thynnus, leucopſis, tiphia, chalcis, chryſis, veſpa, apis, formica, and mutilla.

HYMETTIUM Marmor. See Marble.

HYMETTUS, in *Ancient Geography*, a mountain of Attica, S.W. of Athens, and of the Iſſus, extending from the S.W. to the N.E., at the diſtance of a league from the city. It was celebrated for the excellent quality of its honey, which is highly extolled by Strabo, l. ix. It was alſo famous for its marble. On this mountain were altars, one conſecrated to Jupiter, and the other to Apollo. See Pauſanias, in Attica, c. 32.

HYMN, a ſong, or ode in honour of God; or a poem proper to be ſung, compoſed in honour of ſome deity. See Ode and Song.

The word is Greek, ὑμνος, *hymn*; formed of the verb ὑδω, *celebro*, *I celebrate*.

Iſidore, on this word, remarks, that hymn is properly a ſong of joy, full of the praiſes of God; by which, according to him, it is diſtinguiſhed from *threna*, which is a mourning ſong, full of lamentation.

The hymns, or odes, of the ancients, generally conſiſted of three ſtanzas or couplets; the firſt called *ſtrophe*; the ſecond, *antiſtrophe*; and the laſt, *epode*.

St. Hilary, biſhop of Poitiers, is ſaid to have been the firſt that compoſed hymns to be ſung in churches; he was followed by St. Ambroſe. Moſt of thoſe in the Roman breviary were compoſed by Prudentius. They have been tranſlated into French verſe by Meſſieurs De Port Royal. The Te Deum is alſo commonly called a hymn, though it be not in verſe; ſo alſo is the *Gloria in excelſis*.

In the Greek Liturgy there are four kinds of hymns; but then the word is not taken in the ſenſe of a praiſe offered in verſe, but ſimply of laud, or praiſe. The angelic hymn, or *Gloria in excelſis*, makes the firſt kind; the *triſagion*, the ſecond; the cherubic hymn, the third; and the hymn of victory and triumph, called επινικιος, the laſt.

Hymn *of Caſtor*, in the *Muſic of the Ancients*. The Lacedemonians, in marching to battle, played on the flute what they called *Caſtoreum Melos*. Some authors pretend that Caſtor himſelf invented this hymn, and that from him it had its name; others that Minerva invented the hymn of Caſtor, and that this air ſerved at firſt for the Pyrrhic dance.

Hymn of Ariſtotle to Hermias.

Ariſtotle honoured his friend and kinſman, Hermias, prince of Atarnea, with a hymn, or canticle, which is preſerved in Athenæus, and in Diogenes Laertius, for which he is ſaid to have been arraigned at a court of juſtice, where he was accuſed of impiouſly laviſhing upon a mortal ſuch honour and praiſe, as were due only to the gods.

Ariſtotle's Hymn to Hermias.

"Virtue! thou ſource of pure delight,
Whoſe rugged mien can ne'er affright
The man with courage fir'd;
For thee the ſons of Greece have run
To certain ills, which others ſhun,
And glorioully expir'd.

"When'er thy ſacred ſeeds take root,
Immortal are the flow'rs and fruit,
Unfading are the leaves;
Dearer than ſmiles of parent kind,
Than balmy ſleep, or gold refin'd,
The joys thy triumph gives.

"For thee the Twins of mighty Jove,
For thee divine Alcides ſtrove
From vice the world to free;
For thee Achilles quits the light,
And Ajax plunges into night,
Eternal night, for thee.

"Hermias, the darling of mankind,
Shall leave a deathleſs name behind
For the untimely ſlain;
As long as Jove's bright altars blaze,
His worth ſhall furniſh grateful praiſe,
To all the Muſe's train."

The offence given by Ariſtotle in this poem, which his enemies denominated a Pæan, ſeems to have been the ſaying that the actions of his friend would be ſung by the Muſes, as long as the worſhip of Jupiter Hoſpitalis continued. Athenæus, however, did not regard it as a true Pæan, becauſe the characteriſtic exclamation *Io Pæan* did not occur in any part of it.

Hymn *of Battle*, a kind of air which was ſung by the Greeks when they advanced to battle, and began to charge inſtead of the ſhout, which was uſed at other times. Traces of this cuſtom are ſtill found amongſt the Arnauts, inhabitants

ants of Macedonia, now ſubject to the Turks. Theſe people, ſtout and bold, like their anceſtors, engage with a rapid pace; the chief ſings, and his troops anſwer, whilſt they preſs forward with an accelerated velocity. Theſe hymns ought to be ſhort, and conſiſt of ſhort verſes, ſet to a lively air. Horace ſpeaks in one of his odes of a poet called Tyrtæus, who, in the wars of Meſſina, animated by his verſes the Lacedæmonians to ſuch a degree, that they thus gained a complete victory. In the time of Thucydides, however, the Lacedæmonians marched in ſilence to the ſound of flutes, and by its cadence regulated their ſteps, the better to preſerve their ranks. It was this, without doubt, which gave marſhal Saxe the firſt idea of marching to time; one of the beſt plans that could be deviſed to perfect the military art.

HYMNIA, in *Mythology*, a ſurname given to Diana, under which appellation ſhe was worſhipped, and had a temple in Arcadia.

HYMNUS, *Lat.* ὑμνος, *Gr.* a ſong in honour of gods or heroes. The difference between a *hymn* and a *canticle* conſiſts in this, that the canticle more generally relates to actions, and the hymn to perſons. The firſt ſongs of all nations have been canticles or hymns. Orpheus and Linus paſſed among the Greeks for the authors of the firſt hymns, and there remain among the works of Homer a collection of hymns to the gods.

We have a fine tranſlation of the hymn of Callimachus to Apollo, by Prior, and of Homer's hymn to Venus, by Congreve.

HYNE-Lough, in *Geography*, the name given to a ſmall bay on the ſouth coaſt of Ireland, in the county of Cork, which lies weſt of Toe-head, between it and Baltimore.

HYNNERY, a town of Sweden, in the province of Smaland; 45 miles W.S.W. of Wexio.

HYOBANCHE, in *Botany*, from ὑς, ὑος, *a hog*, and αγχω, to *choke* or *ſtrangle*; at leaſt ſo it appears by the analogy of *Orobanche*, which Linnæus certainly had in view.

Schreb. 421. Willd. Sp. Pl. v. 3. 354. Mart. Mill. Dict. v. 2. Juſſ. 101. Lamarck Dict. v. 3. 158.—Claſs and order, *Didynamia Angioſpermia*. Nat. Ord. *Perſonatæ*, Linn. *Pediculares*, Juſſ.

Gen. Ch. *Cal.* Perianth of ſeven, linear, pointed, erect leaves, as long as the corolla. *Cor.* of one petal, ringent; upper lip vaulted, emarginate; lower lip none. *Stam.* Filaments four, in pairs, inſerted at the baſe of the corolla, of a middling length; anthers ovate, drooping, burſting on the upper ſide. *Piſt.* Germen ſuperior, ovate; ſtyle thread-ſhaped, curved at the top; ſtigma thickiſh, obtuſe, emarginate. *Peric.* Capſule roundiſh, two-celled. *Seeds* numerous, ſmall.

Obſ. This genus is ſeparated from *Orobanche* on account of the ſtructure of its calyx and corolla.

Eſſ. Ch. Calyx of ſeven leaves. Corolla ringent, having no lower lip. Capſule of two cells and many ſeeds.

1. *H. ſanguinea.* Linn. Mant. 253. (Orobanche mauritanica, flore purpureo; Pet. Gaz. t. 37. f. 4.)—Found at the Cape of Good Hope growing paraſitically on other roots. *Stem* about ſix inches high, quite ſimple, woody, imbricated with *leaves* which are formed of ovate, thickly imbricated, outwardly convex, ſmooth, obtuſe ſcales. *Spike* terminal, villoſe, imbricated with *bracteas* and *flowers*, which latter are ſolitary and ſeſſile. In habit and ſtructure this genus is nearly allied to *Orobanche*, but is of a blood-red colour throughout.

HYO-GLOSSUS, in *Anatomy*, a muſcle of the tongue. See Deglutition.

HYOIDES, from υ, and ειδος, *form*, a bone reſembling the Greek letter upſilon in its ſhape, and connected to the root of the tongue. See Deglutition.

HYO-PHARYNGEUS, a name ſometimes given to the middle conſtrictor pharyngis muſcle. See Deglutition.

HYOSCYAMUS, in *Botany*, from ὑς, ὑος, *a hog*, and κυαμος, *a bean*. Ælian relates that if this plant be devoured by ſwine its effects are extremely noxious, and that the animals which partake of it will die, unleſs they are well drenched with water both internally and externally.—Linn. Gen. 98. Schreb. 133. Willd. Sp. Pl. 1010. Mart. Mill. Dict. v. 2. Sm. Fl. Brit. 254. Ait. Hort. Kew. v. 1. 240. Tournef. t. 42. Juſſ. 124. Lamarck Dict. v. 3. 327. Illuſtr. t. 117. Gærtn. t. 76.—Claſs and order, *Pentandria Monogynia*. Nat. Ord. *Luridæ*, Linn. *Solaneæ*, Juſſ.

Gen. Ch. *Cal.* Perianth of one leaf, tubular, ventricoſe below, with a five-cleft, acute mouth, permanent. *Cor.* of one petal, funnel-ſhaped; tube cylindrical, ſhort; limb ſtraight and ſpreading, five-cleft half way down, its ſegments obtuſe, one broader than the reſt. *Stam.* Filaments five, awl-ſhaped, inclining; anthers roundiſh. *Piſt.* Germen roundiſh; ſtyle thread-ſhaped, as long as the ſtamens; ſtigma capitate. *Peric.* Capſule ovate, obtuſe, marked with a line on each ſide, two-celled, ſeeming to be formed of two capſules cloſely approximating, with a lid opening horizontally; receptacles half-ovate, affixed to the partition. *Seeds* numerous, rugged.

Eſſ. Ch. Corolla funnel-ſhaped, obtuſe, irregular. Stamens inclined. Capſule with a lid, two-celled.

1. *H. niger.* Common Henbane. Linn. Sp. Pl. 257. Engl. Bot. t. 591. Woodv. Med. Bot. t. 52.—"Leaves ſinuated, embracing the ſtem. Flowers ſeſſile."—Common in waſte ground by the road ſide throughout England, more eſpecially on a dry calcareous ſoil, flowering in July. *Root* annual, ſpindle-ſhaped. *Stem* branched, round. *Leaves* alternate, ſeſſile, oblong, ſharply ſinuated. *Spikes* terminal, ſimple, recurved, accompanied with leaves. *Flowers* ſeſſile, erect. *Calyx* pitcher-ſhaped, reticulated with veins. *Corolla* yellow, very gracefully pencilled with a net-work of purple veins. The whole plant is hairy, viſcous, poiſonous, and narcotic, except its ſeeds, whoſe oil counteracts their noxious properties. "The ſeeds and capſules together, ſmoked as tobacco, are in ſome places a popular remedy for the toothache, but convulſions and temporary inſanity ſometimes follow its uſe."

2. *H. reticulatus.* Ægyptian Henbane. Linn. Sp. Pl. 257. (H. flore rubello; Ger. em. 355. f. 5.)—"Stem-leaves on footſtalks, ſinuated, acute; floral-leaves entire. Flowers ventricoſe." Native of Crete, Syria and Egypt.—It flowers in July.—This annual is very ſimilar to the common Henbane, but differs in having its ſtem-leaves ovate, bent upwards, and ſmoother on the upper ſide; the floral-ones ſeſſile and entire. *Flowers* on a very ſhort ſtalk, bell-ſhaped, red, beautifully reticulated with dark veins; their tube ſwollen.

3. *H. albus.* White Henbane. Linn. Sp. Pl. 257. Ger. em. 353.—"Leaves on footſtalks, ſinuated, obtuſe. Flowers ſeſſile."—Native of the ſouth of Europe, flowering in Auguſt.—This alſo reſembles *H. niger* in habit and ſtructure, but the leaves are more rounded or obtuſe, very ſoft, clothed with white hairs, as is alſo the *ſtem*. *Flowers* fewer; lower ones on longer ſtalks than the upper. *Capſule* membranaceous, ventricoſe at the bottom. *Seeds* numerous, ſmall, kidney-ſhaped, of a whitiſh aſh-colour.

Linnæus obſerved a variety of this ſpecies having the throat of the corolla coloured with dark purple and green.

4. *H. aureus.* Golden-flowered or ſhrubby Henbane. Linn. Sp. Pl. 257. Curt. Mag. t. 87.—"Leaves on footſtalks,

ſtalks, lobed, dentate, acute. Flowers on ſtalks. Fruit pendulous."—A native of Crete and other parts of the Eaſt. It is very commonly cultivated in this country, as it flowers almoſt through the ſummer, and is extremely ornamental — *Root* biennial (perhaps perennial.) *Leaves* roundiſh, acutely indented on their edges, hairy. *Flowers* at each joint of the ſtem, of a bright yellow colour with a dark purple baſe. *Style* much longer than the corolla. Alpinus and other authors make two varieties of this, differing only in ſize and the ſhade of colour in the corolla.

5. *H. muticus.* Smooth or beardleſs Henbane. Linn. Mant. 45. Willd. n. 5. Schmidel. Ic. t. 71.—Leaves on footſtalks, ovate, acutely angled. Calyx without awns. Bracteas undivided.—Native of Egypt and Arabia.—*Stem* a foot high, erect, roundiſh, ſomewhat pubeſcent. *Branches* axillary, ſhorter. *Leaves* alternate, obtuſely ſinuated, acute, entire, paliſh. *Raceme of flowers* all directed one way, curved in at the top. *Calyx* bell-funnel-ſhaped, not at all ſpinous. *Flowers* campanulate; at firſt green on the outſide, then whitiſh; on the inſide very dark purple, but finally, the whole flower becomes white and unſpotted. *Stamens* declining, purple, a little longer than the corolla. *Piſtil* longer, declining.

6. *H. puſillus.* Dwarf Henbane. Linn. Sp. Pl. 258. (H. puſillus aureus americanus; Pluk. Phyt. t. 37. f. 5.)—"Stem-leaves lanceolate, toothed; floral-leaves in pairs, entire. Calyx furniſhed with ſpines."—Native of Perſia.—*Root* annual. *Stem* ſix inches in height, brittle, hairy. *Leaves* alternate, on long hairy ſtalks. *Calyx* turbinate, ten-angled, nearly the length of the corolla, and broader than its tube, ſpiny at top. *Corolla* yellow with a black throat, divided on the lower ſide beyond the limb. *Stamens* declining.

7. *H. phyſalodes.* Purple-flowered Henbane. Linn. Sp. Pl. 258. Amœn. Acad. v. 7. t. 6. f. 1. Curt. Mag. t. 852.—"Leaves ovate, quite entire. Calyx inflated, ſub-globular."—A native of Siberia, flowering in March and April. *Root* perennial. *Stems* a foot high, ſimple, erect, round, rough with hairs. *Leaves* alternate, heart-ſhaped, entire, dark-green, hairy underneath, the upper ones gradually larger. *Flowers* in bundles, terminal, of a purple colour, funnel-ſhaped, erect. *Stamens* a little ſhorter than the corolla, converging. *Style* as long as the corolla. *Stigma* capitate, emarginate, whitiſh. This plant ſeems to be *Pulmonaria hirta*, Linn. Sp. Pl. App. 1667.

8. *H. Scopolia.* Night-ſhade leaved Henbane. Linn. Mant. 46. Willd. n. 8. Curt. Mag. t. 1126.—"Leaves ovate, entire. Calyx inflated, campanulate."—A native of Carniola, flowering in May.—*Root* perennial; *ſtem* nearly a foot high, forked. *Leaves* alternate, occaſionally oppoſite, lanceolate-ovate, naked, entire. *Stalks* axillary, ſingle-flowered. *Flowers* pendulous. *Calyx* ſmooth, beardleſs. *Corolla* bell-ſhaped, very ſimilar to that of *Atropa Belladonna*, the deadly night-ſhade. *Filaments* hairy, ſtraight. *Capſule* globoſe, of two cells.

Obſ. Theſe two laſt ſpecies *H. phyſalodes* and *Scopolia* differ from the reſt in having the fruit ſeldom opening, and a more regular corolla.

HYOSCIAMUS *Peruvianus*, *henbane of Peru*, a name by which Dodonæus and many other authors have called the tobacco plants, more uſually known by the name nicotiana.

HYOSERIS, from ὑς, ὑος, *a ſwine*, and σερις, *a kind of lettuce*, whence its Engliſh appellation ſwine's lettuce, or ſwine's ſuccory. Linn. Gen. 404. Schreb. 531. Willd. Sp. Pl. v. 3. 1612. Mart. Mill. Dict. v. 2. Sm. Fl. Brit. 839. Ait. Hort. Kew. v. 3. 130. Juſſ. 169. Lamarck. Dict. v. 3. 158. Illuſtr. t. 654. Gærtn. t. 160. (Taraxaconaſtrum; Vaill. Mem. Acad. des Sc.—ann. 1721.) Claſs and order, *Syngeneſia Polygamia Æqualis.* Nat. Ord. *Compoſitæ Semifloſculoſæ*, Linn. *Cichoraceæ*, Juſſ.

Gen. Ch. *Common calyx* cylindric-angular, about eight or ten-cleft, permanent; ſcales lanceolate, erect, acute, ſomewhat keeled, equal, calycled at the baſe with very ſhort cloſe ſcales. *Cor.* compound, ſomewhat imbricated, uniform; each flower hermaphrodite; proper, of one petal, tongue-ſhaped, linear, truncated, five-toothed. *Stam.* Filaments five, capillary, very ſhort; anthers united, tubular. *Piſt.* Germen oblong; ſtyle thread-ſhaped, the length of the ſtamens; ſtigmas two, reflexed. *Peric.* none; common permanent calyx cloſe or ſpreading. *Seeds* ſolitary, oblong, membranaceous, ſtreaked on one ſide along the middle, almoſt the length of the calyx; the marginal ones broadeſt; down ſeſſile, chaffy. *Receptacle* naked.

Eſſ. Ch. Calyx almoſt equal. Down ſimple, chaffy. Receptacle naked.

1. *H. minima.* Swine's ſuccory. Linn. Sp. Pl. 1138. Engl. Bot. t. 95. (H. maſcula; Ger. em. 288.)—"Stem divided, deſtitute of leaves. Flower-ſtalks ſwelling upwards."—Found in barren ſandy gravelly fields, but rather ſparingly, flowering in June.—*Root* annual, ſmall, ſpindle-ſhaped. *Leaves* radical, depreſſed, oblong, toothed, now and then entire, rough, particularly at their edges. *Stems* three, four, or more, round, ſmooth, taper, and purpliſh at the bottom, under the flowers hollow and inflated, with here and there a few ſcattered, pointed, erect bracteas. *Flowers* ſolitary, ſmall, lemon-coloured; florets very obtuſe, and toothed. *Seeds* crowned with an elevated chaffy border.

Several ſpecies of this genus, of which Willdenow reckons eight in all, require reviſion, nor are the generic characters well defined. In ſome inſtances the crown of the ſeed is encompaſſed with hairs.

HYOSYRIS, a name given by Pliny and ſome other authors to the common knapweed, or *jacea nigra.*

HYO-THYROIDEUS, in *Anatomy*, a muſcle paſſing between the os hyoides and the thyroid cartilage, and deſcribed in the article DEGLUTITION.

HYPACARIS, or HYPACYRIS, in *Ancient Geography*, a river of Scythia, which ſprung, according to Herodotus, from a lake, and paſſing through the middle of the country of the Scythian Nomades, diſcharged itſelf into the Euxine ſea, near the town of Carcinites, forming on the right Hylæa and the Curſus Achilles.

HYPACTIC MEDICINES, formed of ὑπαγω, *I take away*, a term uſed by ſome authors for cathartic medicines.

HYPÆA, in *Ancient Geography*, one of the iſlands called Stæchades, now Hieres, ſituated on the coaſt of Gallia Narbonnenſis.

HYPÆPA, a town of Lydia, between the Tmolus and the Cayſter.

HYPÆSIA, a country of the Peloponneſus, in Triphylia.

HYPÆTHROS, or HYPÆTHRION, Ὑπαιθριον, formed of ὑπο, *under*, and αιθρα, *air*, in the *Ancient Architecture*, a kind of temple, open at the top, and thereby expoſed to the air.

The hypæthron, according to Vitruvius, is an open building or portico, ſuch as anciently were certain temples that had no roof or covering. Of this we have an inſtance, in the temple of Jupiter Olympius, built by Coſſutius, a Roman architect at Athens.

Of hypæthrons, ſome were decaſtyle, others pycnoſtyle; but they had all rows of columns within-ſide, forming a kind of periſtyle; which was eſſential to this ſort of temple.

HYPALLAGE, IMMUTATION, a grammatical figure, whereby, of different expreſſions which give the ſame idea, we make choice of that which is leaſt natural and obvious; or, when there is a mutual permutation or change of caſes, moods, regimens, &c.

The term is formed of ὑπαλλαττω, *I change*, compoſed of ὑπο and αλλαττω, *I change;* of αλλος, *another*.

As in this inſtance, *Dare claſſibus auſtros;* inſtead of *Dare claſſes auſtris.*

HYPANA, in *Ancient Geography*, a town of Triphylia, E. of Acheron and N. of Typanæa.

HYPANIA, a town of the Peloponneſus in the Elide; probably the ſame with Hypana.

HYPANIS, a river of European Scythia, ſince named the *Bog*. According to the ancients it originated in a large lake, called the "Sea of the Hypanis."

HYPAPANTE, or HYPANTE, a name which the Greeks give to the feaſt of the purification of the holy Virgin, or the preſentation of Jeſus in the temple.

The words are Greek, ὑπαντη, and ὑπαπαντη, which properly ſignify *humble*, and *lowly meeting;* being compounded of ὑπο, *under, beneath*, and ανταω, or απανταω, *I meet*, of αντι, *contra, againſt*. The denominations are taken from the meeting of old Simeon, and Anna the propheteſs, in the temple, at the time the child Chriſt Jeſus was brought thither.

HYPARNA, in *Ancient Geography*, a town of Aſia, in Lycia, according to Arrian.

HYPATA, a town of Greece, and one of the principal towns of Theſſaly, according to Apuleius, Aſin. Aur. l. i. —Alſo, a country of Aſia, on the river Sangar.

HYPATE, ὑπατη, in the *Greek Muſic*, an epithet by which the Greeks diſtinguiſhed the loweſt tetrachord, and the loweſt ſtring of each of the two loweſt tetrachords.

HYPATE *Hypaton*, was a tone higher than the *proſlambanomenos*. See *Greek* SCALE and NOTATION.

HYPATE *Meſon*, υπατη μεσων, the loweſt ſtring of the ſecond tetrachord, which was alſo the moſt acute of the firſt, as theſe tetrachords were conjoint. See CONJOINT.

HYPATE *Prima*, in *Muſic*, is an interval, ſo called by M. Henſling, whoſe ratio is $\frac{2}{3} = 358\,\Sigma + 7f + 31\,m$, or the FIFTH, which ſee.

HYPATIA, in *Biography*, a female philoſopher of the Eclectic ſect, was the daughter of Theon, a celebrated mathematician of Alexandria, who flouriſhed in the fourth and fifth centuries. The talents of his daughter were cultivated with great aſſiduity, and ſhe was made miſtreſs of the different branches of polite learning, and became intimately converſant in the ſciences of geometry and aſtronomy, as they were at that day underſtood. She next applied herſelf to philoſophy, and is ſaid to have excelled all the philoſophers of her time. So high was her reputation, that ſhe was ſtrongly ſolicited to become a public preceptreſs in the ſchool where Ammonius, Hierocles, and other celebrated philoſophers taught: and ſuch was her attachment to ſcience, that ſhe yielded to the public voice, and became an inſtructor in the ſchools. Here ſhe explained the principles of philoſophy, and endeavoured to reconcile the ſyſtems of Plato, Ariſtotle, and other maſters. The celebrity of her name attracted ſcholars from all parts, and ſhe gained the reſpect and admiration not only of thoſe who formed her auditories in the ſchools, but the moſt eminent characters in Alexandria, and was even conſulted by the magiſtrates in caſes of importance. She is ſaid, however, not to have been intoxicated by the reſpect which was paid to her from all quarters; that though ſhe excelled moſt of the philoſophers of the age in mathematical learning and ſcience, ſhe diſcovered no pride, and though ſhe was in perſon exceedingly beautiful, ſhe never yielded to the impulſe of vanity, nor ever gave occaſion to the ſlighteſt ſuſpicion againſt her chaſtity. Poſſeſſed of ſuch extraordinary accompliſhments and virtues, her houſe became the reſort of perſons of learning and diſtinction; but her talents excited the jealouſy of mean and little minds, and the attainments to which ſhe was indebted for her celebrity proved the occaſion of her deſtruction. Oreſtes, a man of liberal education, and intimately acquainted with Hypatia, whom he frequently conſulted, was governor of Alexandria; and Cyril, a biſhop of great authority, but haughty, violent, and intolerant in the higheſt degree, filled the patriarchal chair of that city. This prelate, who perhaps did not wiſh to appear the avowed perſecutor, inſtigated the populace to plunder the property of the Jews, by forcibly expelling them from Alexandria. Oreſtes, reſenting his conduct, laid the affair before the emperor; who, declining to interfere in the diſpute, the city became a ſcene of frequent tumults and conteſts between the partizans of the prelate and governor. The intimacy of Oreſtes with Hypatia now became a ground of jealouſy to Cyril, who felt indignant that his rival ſhould have it in his power to be benefited by her ſage advice, on which account ſhe was calumniated by the biſhop's friends among the monks and Chriſtian populace, and at length ſhe fell a ſacrifice to their malignity. Not ſatisfied with her life, they put her to the moſt extreme torture, and then treated her dead body with the utmoſt indignity. Hypatia was murdered in the year 415, under the reign of Theodoſius II. by the conſent and wiſhes, if not by the direct inſtigation, of Cyril, a biſhop of what was falſely called Chriſtianity. The Chriſtian religion teaches every thing that is excellent, kind, and praiſeworthy, and the actions of malignant prieſts are not to be imputed to the creed which they profeſs, but to the rancour of heart, which is but too frequently found in the tyrants of the world, in eccleſiaſtical as well as civil polity. Moreri. Enfield's Hiſt. Phil.

HYPATOIDE, in *Muſic*, a nome, or air, in a low pitch.

HYPATOIDES, grave ſounds. See LEPSIS.

HYPATON, DIATONOS. See DIATONUS and SYSTEM.

HYPÆLYPTUM, in *Botany*, a name of whoſe meaning we can diſcover nothing. Can it have been corrupted from the *Hypolytrum* of Richard and Perſoon, which has a great appearance of being the ſame genus? For this ſuggeſtion we are indebted to Mr. Brown.—Vahl. Enum. v. 2. 283. Brown. Prodr. Nov. Holl. v. 1. 219—Claſs and order, *Triandria Monogynia*. Nat. Ord. *Calamariæ*, Linn. *Cyperoideæ*, Juſſ.

Gen. Ch. *Cal.* Spike cloſely imbricated on all ſides, with obovate concave ſcales, one of them to each flower; perianth of two membranous linear valves, nearly as long, and oppoſite to each ſcale. *Cor.* none. *Stam.* Filaments three; anthers linear. *Piſt.* Germen ſuperior, oblong-ovate; ſtyle one, cloven, deciduous; ſtigmas two or three, undivided. *Peric.* none. *Seed* ſolitary, naked, obſcurely triangular, without any hairs at the baſe.

Eſſ. Ch. Scales imbricated every way, ſingle-flowered. Perianth of two valves, oppoſite to each ſcale. Corolla none. Seed one, naked, beardleſs.

This genus is allied to *Kyllingia*, with which it agrees in habit. The ſpecies in Vahl are four;

1. H. *pungens* "Spikes ovate-oblong. Scales obtuſe. Involucrum ſpinous-pointed."—Suppoſed to be a native of South America. *Stems* two feet high.

2. H. *argenteum.* "Spikes ovate. Scales acute. Style three-cleft. Leaves linear."—Native of the Eaſt Indies and of Senegal. *Stem* a foot high. *Flowers* very white.

3. H. *ſphacelatum.* "Spikes ovate. Styles two-cleft.

Leaves linear."—Found at Tranquebar. A foot high. *Spikes* whitiſh, brown when old.

4. H. *filiforme*. "Spikes oblong. *Stem* thread-ſhaped. Leaves briſtle-ſhaped."—Native of Guinea. Glaucous, ſix inches or more in height. *Spikes* dark brown when old.

The *roots* of all are fibrous and purple. *Stems* triangular, erect, without joints. *Leaves* two or three, channelled, rigid, rough-edged, ſheathing. *Involucrum* moſtly two-leaved. *Spikes* terminal, ſeſſile.

To theſe Mr. Brown adds a fifth.

5. H. *microcephalum*. "Spikes ternate, nearly globoſe. Scales linear-wedge-ſhaped, awned. Involucrum of two very long leaves."—Native of the tropical part of New Holland. The *ſtem* is ſlender, triangular.

HYPECOUM, appears to be derived from υπηχεω, *to reſound*, becauſe its ſeed-veſſels when touched by the hand burſt with a crackling noiſe. This genus is the ὑπηκοον of Dioſcorides, and Hypecoum of Pliny.—Linn. Gen. 66. Schreb. 90 Willd. Sp. Pl. v. 1. 704. Mart. Mill. Dict. v. 2. Ait. Hort. Kew. v. 1. 168. Sm. Prodr. Fl. Græc. v. 1. 107. Juſſ. 236. Lamarck Dict. v. 3. 160 Illuſtr. t. 88. Gærtn. t. 115. (Hypecoon; Tournef. t. 115.) Claſs and order, *Tetrandria Digynia*. Nat. Ord. *Corydales*, Linn. *Papaveraceæ*, Juſſ.

Gen. Ch. *Cal.* Perianth ſmall, of two, ovate, acute, erect, oppoſite, deciduous leaves. *Cor.* of four petals, the two exterior ones oppoſite, broader, trifid, obtuſe; the two inner alternate with the others, trifid half way down; the middle ſegment concave, compreſſed, erect. *Stam.* Filaments four, awl-ſhaped, erect, covered by the middle ſegment of the inner petals; anthers erect, oblong. *Piſt.* Germen ſuperior, oblong, cylindrical; ſtyles two, very ſhort; ſtigmas acute. *Peric.* Pod long, curved inwards, jointed. *Seeds* globoſe, compreſſed, a ſingle one in each articulation of the ſeed-veſſel.

Obſ. The ſtamens of *H. erectum* appear to be tetradynamous.

Eſſ. Ch. Calyx of two leaves. Petals four, the two outer ones broader. Fruit a pod.

1. *H. procumbens*. Linn. Sp. Pl. 181. (Cuminum corniculatum, ſive Hypecoum Cluſii; Ger. em. 1067. 3.)—"Pods curved, compreſſed, jointed. The two larger petals obtuſely three-lobed." Native of the ſouth of Europe, and cultivated, by Gerarde, in this country, before 1597. It flowers in June and July, ripening ſeed in Auguſt.—*Root* ſimple, annual, fibrous. *Leaves* chiefly radical, much divided, pale green, with a greyiſh or glaucous tinge. *Stems* ſeveral, ſlender, compreſſed, naked at bottom, but furniſhed with a few leaves at the upper part, amongſt which the flower-ſtalks appear, each ſupporting a ſmall yellow flower. *Pod* grooved with longitudinal ſtreaks. *Seeds* from ten to twenty, dark brown.—H. *patens*, Willd. Hort. Berol. t. 5, ſeems not different from this.

2. *H. littorale*. Willd. n. 2. Jacq. Collect. v. 2. 205. Ic. Rar. v. 2. t. 309.—"Pods jointed, compreſſed, curved. Petals entire, the outer ones longer and linear-ſpatulate."—A native of dry ſand on the ſhores of Germany.—This is ſcarcely more than a variety of the laſt, as it differs only in the leaves being ſhorter and more acutely toothed, with entire and paler petals.

3. *H. pendulum*. Linn. Sp. Pl. 181. (Cuminum ſiliquoſum; Ger. em. 1067. 2.)—"Pods drooping, round, cylindrical. The larger petals obtuſely three-lobed."—A native of the ſouth of France, flowering in June and July.—*Stem* more ſlender, and ſtanding more erect than in *H. procumbens*. Leaves alſo longer and narrower. *Flowers* ſmaller, appearing at the diviſions of the branches, they are yellow like thoſe of the greater Celandine, but leſs.

4. *H. erectum*. Linn. Sp. Pl. 181. Amm. Ruth. 58. t. 9. "Pods erect, round, toruloſe. The larger petals emarginate, three-lobed." Amman received ſeeds of this plant from Dauria, and Miller from Iſtria; the latter cultivated it here before 1759. This has much the appearance of the laſt in *leaf* and *flower*, but its *pods* grow erect, and are writhed and twiſted about.

5. H. *imberbe*. Sm. Prodr. Fl. Græc. n. 378.—Pods curved, compreſſed, jointed. All the petals beardleſs.—Found by Dr. J. Sibthorp in the iſle of Cyprus. A figure of this ſpecies is deſtined for the Fl. Græca, t. 156. It has the hahit of the reſt.

Obſ. The juice of theſe plants is of a yellow colour, reſembling that of Celandine, and is ſaid to have the ſame narcotic effect as opium.

HYPELATE, from ὑπο, *under*, and ελατη, *a fir-tree*, ſo named by Dr. Patrick Browne. Schreb. 730. Browne Jam. 208. Swartz Prodr. 61. Claſs and order, *Polygamia Monœcia*. Schreb. rather *Octandria Monogynia*.

Gen. Ch. Perfect Flowers, *Cal.* Perianth of five (ſeldom four) ovate, concave, ſpreading, deciduous leaves, two of which are leſs than the reſt. *Cor.* Petals five, ovate, a little leſs than the calyx, deciduous, with a nectariferous cell about the germen. *Stam.* Filaments eight, ſpreading, placed round the baſe of the germen, the length of the corolla; anthers ovate-cordate. *Piſt.* Germen globoſe, ſuperior; ſtyle ſhort, erect; ſtigma deflexed, triangular, three-furrowed, acute. *Peric.* Drupa pulpy, roundiſh. *Seed.* Nut oval, very ſmooth; kernel ſolitary. Male Flowers on the ſame tree, but in a diſtinct panicle. *Cal. Cor.* and *Nect.* the ſame as in the perfect flowers, from the middle of which laſt ariſe the *Stam.* Filaments eight, converging at the baſe, either erect, reflexed or aſcending, broader at the baſe; anthers ovate-cordate. *Piſt.* The triangular rudiment of a germen; ſtyle awl-ſhaped, very ſmall.

Eſſ. Ch. Calyx five-leaved. Corolla of five petals. Stigma bent down, triangular. Drupa ſingle-ſeeded.

1. *H. trifoliata*. Swartz Prod. 61. Browne Jam. 208. (Cytiſus arboreus, foliis obtuſis glabris; Sloane Jam. v. 2. 33.) Found at Jamaica by the river-ſide under the town and on the red hills very plentifully. This *tree* has many trunks, each about four or five inches in diameter, covered with a ſmooth cinnamon-coloured bark. *Branches* upright. *Leaves* always three together at the end of a common footſtalk, of a yellowiſh green colour, very ſmooth, having one middle rib, and ſome tranſverſe ones. Dr. Browne obſerves that it is full of ſlender branches, and furniſhed with many leaves of the ſame texture and grain with thoſe of *Lignum Vitæ*, but remarkably different in form and diſpoſition. He never ſaw the fruit in a perfect ſtate.

HYPENEMIUS, an epithet applied by authors to barren eggs, or ſuch as a hen lays before ſhe has been trod by the cock. They are alſo called *zephyria ova*, and had both theſe names from the winds being ſuppoſed to generate them.

HYPER, a Greek word uſed in the compoſition of divers terms derived from that language.

The Greek prepoſition ὑπερ, *hyper*, literally ſignifies *above*, *beyond*; and in compoſition it expreſſes ſome exceſs, or ſomething beyond the ſignification of the ſimple word it is joined with.

HYPER, *Supra*, below. See EPI.

HYPER-ÆOLIAN, the penultima in the acute of the fifteen modes in Greek muſic, of which the fundamental or key-note was a fourth above the Æolian mode. Neither the hyper-æolian, nor the hyper-lydian mode was ſo ancient as the reſt; nor is either of them mentioned by

Ariſtoxenus; and Ptolemy, who admitted only ſeven modes, comprehended neither of them in his liſt.

HYPERANTHERA, in *Botany*, from ὑπερ, *upon*, and *ανθηρα, an anther*, ſo named by Forſkall, in alluſion to the ſuperior length or projection of two of the ſtamens. Forſk. Egypt. Arab. 67. Willd. Sp. Pl. v. 2. 535. Vahl. Symb. v. 1. 30. (Anoma; Loureir. Cochinch. v. 1. 278. Moringa; Schreb. 741. Burmann. Zeylan. t. 75. Juſſ. Gen. 348. Lamarck. Illuſtr. t. 337.) Claſs and order, *Decandria Monogynia.* Nat. Ord. *Lomentaceæ*, Linn. *Leguminoſæ*, Juſſ.

Gen. Ch. *Cal.* Perianth of one leaf, in five deep ſegments, inferior. *Cor.* irregular, of five obovate petals, inſerted betwixt the ſegments of the calyx: the upper one largeſt. *Stam.* Filaments 10, awl-ſhaped, unequal; anthers roundiſh, ſome of them often imperfect. *Piſt.* Germen linear, ſuperior; ſtyle longer than the ſtamens; ſtigma ſimple. *Peric.* Pod long, ſtraight, pulpy, of one cell, and three rugoſe, ſpongy valves. *Seeds* numerous, roundiſh, with three wings.

Eſſ. Ch. Calyx in five deep ſegments. Petals unequal, inſerted into the calyx. Legume long, ſtraight, of three valves. Seeds winged.

Obſ. The laſt ſpecies has a bivalve legume, and ſeeds without wings.

1. *H. decandra.* Willd. n. 1. (Anoma Moringa; Loureir. Cochinch.)—"Flowers decandrous. Leaves bipinnate; lower leaflets ternate. *Legumes* ſomewhat octagonal."—A native of many parts of India; obſerved by Loureiro at Bengal. This *tree* is of a middling ſize. *Branches* ſpreading. *Leaves* alternate, unequally bipinnate; leaflets obovate, ſmooth, entire. *Flowers* white, in ſcattered panicles. *Legume* awl-ſhaped. *Seeds* furniſhed with three membranous wings, and arranged in a ſtraight and ſimple order along the valves.

2. *H. Moringa.* Willd. n. 2. (Anoma Moringa; Loureir. Cochinch. Guilandina Moringa; Linn. Sp. Pl. 546. Jacq. Ic. Rar. v. 3. t. 461.)—"Flowers ſemi-decandrous. Leaves bipinnate, lower leaflets ternate. Legumes triangular."—A native of Ceylon and Egypt. This ſpecies very nearly approaches the laſt in ſize and habit, but its *leaves* are oppoſite, and *flowers* leſs brilliant. *Legume* more than a foot long, triangular, ſometimes ſquare. *Seeds* triangular and winged, diſpoſed in a ſingle row; theſe are the "Ben-nuts," formerly much uſed by perfumers for their oil, which abſorbs and retains ſcents very powerfully.

3. *H. ſemidecandra.* Willd. n. 3. Vahl. Symb. v. 1. 30.—"Flowers ſemi-decandrous. Leaves bipinnate, ſimply pinnate at the top."—A native of Arabia. *Leaves* unequally bipinnate, conſiſting of ſix or eight pair of oppoſite leaflets, on ſhort ſtalks, larger by degrees towards the top, remote, ſmooth. *Flowers* in panicled cluſters. The common and partial flower-ſtalks alternate.

4. *H. cochinchinenſis.* Willd. n. 4. (Anoma cochinchinenſis; Loureir. Cochinch.)—"Flowers ſemi-decandrous. Leaves bipinnate, downy. Legumes two-valved. Seeds naked."—Found in the woods of Cochinchina. A *tree* about ten feet high with aſcending *branches*. *Leaves* oppoſite, unequally bipinnate; leaflets nearly ovate, downy. *Flowers* white, in ſcattered panicles. *Legume* oblong, ſomewhat compreſſed, attenuated at either end.

HYPERBATON, or HYPERBASIS, in *Grammar* and *Rhetoric*, is a tranſpoſition, or a figurative conſtruction, inverting the natural and proper order of the terms of a diſcourſe.

The word is ὑπερβατον, or ὑπερβασις, derived of ὑπερβαινω, *tranſgredior, I go beyond*; formed of ὑπερ, *ultra, beyond*, and *βαινω, eo, I go.*

The hyberbaton, Longinus obſerves, is no other than a tranſpoſal of ſentiments, or words, out of the natural order and method of diſcourſe, and always implies great violence, or ſtrength of paſſion, which naturally hurries a man out of himſelf, and diſtracts him variouſly. Thucydides is very liberal in hyperbatons.

Quintilian calls the hyberbaton *verbi tranſgreſſio.* It is of uſe to enliven and animate the diſcourſe: it is very proper to expreſs a violent paſſion, and repreſent an agitation of mind in the livelieſt manner.

HYPERBIBASMUS, Ὑπερβιβασμος, in *Rhetoric*, a figure which inverts the order of conſtruction. Cornelius Nepos gives an inſtance of it in his life of Chabrias: "Athenienſes diem certam Chabriæ præſtituerunt, quam ante domum niſi rediſſet, &c. for ante quam."

HYPERBOLA, in *Geometry*, one of the Conic Sections, is formed by the common ſection of a plane and a conic ſurface, when the cutting plane neither meets the whole contour of the cone, nor is parallel to a plane that touches the conic ſurface.

A plane, ſuch as we have juſt deſcribed, being indefinitely extended, will likewiſe cut the oppoſite conic ſurface, and the common ſection will be another hyperbola perfectly ſimilar to the former one. The two curves, formed by the interſection of the ſame plane, with two oppoſite conic ſurfaces, are called oppoſite ſections, or oppoſite hyperbolas.

For the definitions relating to the hyperbola, and oppoſite hyperbolas, we muſt refer to the article CONICS; as we muſt likewiſe do for the chief properties which theſe curves have in common with the other conic ſections: in this place we intend to treat of the more noted properties peculiar to the particular curves under conſideration.

1. If a parallelogram be completed by drawing parallels to the aſymptotes of an hyberbola from any point in the curve, that parallelogram will be conſtantly of the ſame magnitude.

Let C A, C B (*Plate* X. *Conics*, *fig.* 1.) be the aſymptotes of an hyperbola, and let two parallelograms C P M Q, C $p\,m\,q$, be formed by drawing parallels to C A, C B, through M and m, any two points in the curve: theſe parallelograms are equal. Let two lines, G F and H K, parallel to one another, be drawn through M and m to cut the aſymptotes. Then by ſimilar triangles,

$$GM : MP :: Hm : mp,$$
$$FM : MQ :: Km : mq.$$

Therefore, $GM \times MF : PM \times MQ :: Hm \times Km : mp \times mq$.

But (Cor. 27. Con.) $GM \times MF = Hm \times Km$.

$$\text{Therefore } MP \times MQ = mp \times mq.$$

Therefore the parallelograms C P M Q, C $p\,m\,q$, are equal (23. 6. E.)

Cor.—If M P, a parallel to one aſymptote, meet the other aſymptote in P, then the rectangle $CP \times PM$ is conſtantly of the ſame magnitude.

2. A triangle formed by two aſymptotes of an hyperbola, and a tangent of the curve which meets them, is conſtantly of the ſame magnitude.

Let a tangent of a hyperbola cut the aſymptotes C A, C B (*fig.* 1.); from the point of contact M, draw M P parallel to C B, and M Q parallel to C A; then the line T S will be biſected in M (21. Con.); hence it is plain that the triangle C T S is the double of the parallelogram C P M Q, and conſequently the triangle is conſtantly of the ſame magnitude (1).

3. *Lemma.*—Let D E (*fig.* 2.) be parallel to A C, one ſide of a triangle, then the line B F, drawn from the angle

oppoſite to AC, through O, the interſection of AE and DC, will biſect AC.

Let BF cut DE in G. Then, becauſe the parallels DE and AC are cut by three lines drawn through B,

$$DE : EG :: AC : CF.$$

And becauſe the ſame parallels are cut by three lines drawn through O,

$$DE : EG :: AC : AF.$$

Therefore (11. 5. E.)

$$AC : CF :: AC : AF.$$

Conſequently (9. 5. E.) $AF = FC$.

4. A ſtraight line drawn from the interſection of two tangents of an hyperbola (*figs.* 3. and 4.), or oppoſite hyperbolas, through the centre, will biſect the line drawn between the points of contact.

Let TM and TN be two lines touching an hyperbola, or oppoſite hyperbolas in M and N; then TC, drawn through the centre, will biſect MN. Let the line which touches the curve in M meet the aſymptotes in G and H; and the line touching in N, meet the ſame lines in K and L; join HK and GL. Then the two triangles GCH and LCK are equal (2); take away, or add, the triangle KCH, and the two triangles KGH and KLH will likewiſe be equal: therefore KH is parallel to LG (39 1. E.); and MN, which biſects HG and KL (21. Con.), will likewiſe be parallel to KH and GL (2. 6. E.) Now TC will biſect GL (Lem.), therefore it will alſo biſect MN parallel to GL.

5. If a tangent of an hyperbola meet a diameter, and an ordinate be applied to the ſame diameter from the point of contact; then the ſemi-diameter will be a mean proportional between the ſegments lying between the centre and the tangent, and the centre and the ordinate.

Firſt let a tangent HB (*figs.* 5. and 6.) meet a tranſverſe diameter CA, and let HF be an ordinate to the ſame; draw AM a tangent of the curve to meet BH in M; draw HA and CM cutting AH in O, and HF in N; join AN. Becauſe AH is biſected in O (4), and AM parallel to HF (1. Cor. 16. Con.), it is manifeſt that AMHN is a parallelogram. Becauſe AM is parallel to HF, therefore

$$CM : CN :: BA : BF.$$

And becauſe AN is parallel to BH, therefore

$$CM : CN :: CB : BA.$$

Conſequently (11. 5. E.)

$$CB : BA :: BA : BF.$$

Secondly, let the tangent HB and ordinate HF be drawn to a ſecond diameter CA; draw the diameter CD, conjugate to CA, and therefore parallel to HF; draw alſo HT parallel to CA, and therefore an ordinate to CD; let HB cut CD in S.

Then (29. Con. et alternando)

$$CA^2 : CA^2 + CF :: CD^2 : HF^2.$$

But, on account of ſimilar triangles,

$$CB : BF :: CS : HF, \text{ or } CS \times HF : HF^2.$$

But, by the firſt caſe, $CS \times HF = CS \times CT = CD^2$; therefore (11. 5. E.)

$$CA^2 : CA^2 + CF^2 :: CB : BF.$$

Convertendo $CA^2 : CF^2 :: CB : CF$, or $CB \times CF : CF^2$;

$$\text{therefore } CA^2 = CB \times CF.$$

6. The difference of the ſquares of any two conjugate diameters of an hyperbola, is equal to the difference of the ſquares of the two axes.

Let CD (*fig.* 7.) be the tranſverſe axis of an hyperbola, and CM any other tranſverſe diameter, and draw the tangents BDE, PMQ, limited by the aſymptotes; alſo draw CR from the centre perpendicular to PQ. Then becauſe the triangles BCE and PCQ are equal (2), the rectangles $BC \times CE$ and $PC \times CQ$ will alſo be equal (23. 6. E.); but,

$$\left.\begin{array}{l} 2BC.CE = BC^2 + CE^2 - BE \\ 2PC.CQ = PC^2 + CQ^2 - PQ^2 \end{array}\right\} (12 \;\&\; 13.\ 2.\ E.)$$

therefore $BC^2 + CE^2 - BE^2 = PC^2 + CQ^2 - PQ^2 =$

(becauſe BE and PQ are biſected in D and M (21. Con.))

$$2CD^2 - 2BD^2 = 2CM^2 - 2MP^2. \text{ Therefore}$$

$$CD^2 - BD = CM^2 - MP^2,$$

and BD is half the conjugate axis, and MP half the diameter conjugate to CM.

7. If a parallelogram be completed by drawing ſtraight lines through the extremities of two conjugate diameters of oppoſite hyperbolas, ſo as to be parallel to the diameters themſelves, that parallelogram will be conſtantly of the ſame magnitude, and equal to the rectangle contained by the two axes.

Let MN and PQ (*fig.* 8.) be two conjugate diameters of oppoſite hyperbolas, and let the parallelogram FHKG be formed by drawing parallels to MN and PQ through the extremities of the ſame lines; then, becauſe HM and MK, as well as FN and NG, are all equal to PC or CQ (Def. 16. Con.); and HK and FG, both parallel to PQ, are tangents of the hyperbolas; it is plain that the four angular points of the parallelogram will be upon the aſymptotes of the curves (Def. 16. Con.); therefore the triangle HCK is always of the ſame magnitude (2); and conſequently the parallelogram FHKG, which is quadruple of the triangle, is likewiſe conſtantly of the ſame magnitude. And the ſame parallelogram is equal to the rectangle contained by the axes; becauſe the parallelogram becomes a rectangle when the conjugate diameters MN and PQ become the two axes of the hyperbolas.

8. If NE and MF (*fig.* 9.), two tangents of oppoſite hyperbolas, be both parallel to the ſemi-diameter CP, and be interſected by a third tangent DEF, which cuts them in E and F; then $CP^2 = NE \times MF$: and if the ſemi-diameter CQ be parallel to the tangent DEF; then $CQ^2 = DE \times DF$.

Join MN, which will paſs through the centre C (Cor. 18. Con.), and draw DO parallel to NE and MF, and DR parallel to MN. Then MC and CP are conjugate ſemi-diameters, and DO is an ordinate to MC, and DR an ordinate to PC; therefore

$$OC : CN :: CN : CL \ (5)$$

Convertendo et Alternando, $ON : NL :: CN : CL$

Componendo $OL : LN :: ML : CL$

therefore, by ſimilar triangles

$$OD, \text{ or } RC : NE :: MF : CS;$$

Conſequently $MF \times NE = RC \times CS = CP^2$ (5).

Again,

$$DE : EN :: CQ : CP \quad (\text{Cor. 1. 28. Con.})$$

$$DF : MF :: CQ : CP;$$

therefore $DE \times DF : MF \times EN :: CQ^2 : CP^2$

and becauſe $MF \times EN = CP^2$

therefore $DE \times DF = CQ^2$.

9. Two ſtraight lines MF and M*f* (*fig.* 10.), drawn from any point in the curve of an hyperbola, make equal angles with the tangent MT drawn from the ſame point.

Let MT meet the tranſverſe axis in T, and draw MK perpendicular to the ſame axis produced. Then

$$Mf^2 - MF^2 = fK^2 - KF^2 \quad (47.\ 1.\ E.)$$

that is, $(Mf + MF) \times (Mf - MF) = Ff \times (fK + KF)$:

but $Mf - MF = 2AC$ (42. Con.), $fK + KF = 2CK$;

$$\text{therefore } AC \times \frac{Mf + MF}{2} = CF \times CK:$$

$$\text{Conſequently, } AC : CF :: CK : \frac{MF + Mf}{2};$$

$$\text{but (5), } CT : CA :: CA : CK,$$

$$\text{ex æquo, } CT : CF :: CA, \text{ or } \frac{Mf - MF}{2} : \frac{Mf + MF}{2}:$$

and, componendo et dividendo

$$fT : TF :: Mf : MF.$$

Therefore (3. 6. E.) M T biſects the angle F M *f*.

10. If M P (*fig.* 10.) touch an hyperbola, and M F be drawn from the point of contact to either focus; then C P, drawn from the centre parallel to M F, and limited by the tangent, will be equal to A C, half the tranſverſe axis.

Draw M*f* to the other focus, and draw *f* P meeting M F, produced if neceſſary, in H: becauſe $fC = FC$, and C P is parallel to F H, therefore $fP = PH$: conſequently, ſince M P biſects the angle *f* M F (9), $MH = Mf$ (3. 6. E.): therefore $FH = Mf - MF = AB$ (42. Con.); and $CP = \frac{1}{2} FH = AC$.

Cor. 1.—The line *f* P will be perpendicular to the tangent M P.

For M P, which biſects the vertical angle of the iſoſceles triangle *f* M H, will cut the baſe M H at right angles.

Cor. 2.—If *f* P and F*p* be drawn from the two foci perpendicular to a tangent of the hyperbola, the points P and *p* will be in the circumference of the circle deſcribed upon the tranſverſe axis as a diameter.

11. The rectangle under F P and *f p* (*fig.* 10.), two perpendiculars drawn to any tangent of the curve, is equal to the ſquare of half the conjugate axis.

For the points P and *p* are in the circumference of the circle deſcribed upon the greater axis A B; therefore if *f* P meet the circle again in O, the ſegment O P *p*, which contains a right angle, will be a ſemi-circle, and O C and C *p* will be one ſtraight line, and the triangles *f* C O and F C *p* will be equal, and $AO = pF$. But $Pf \times fO = Pf \times Fp = fA \times fB = fC^2 - CA^2 =$ ſquare of half the conjugate axis (Def. 23. Con.).

12. A ſtraight line T F, (*fig.* 11.) drawn from the interſection of two tangents of an hyperbola, or oppoſite hyperbolas, to one of the foci, will make equal angles with the lines M F and N F drawn from the points of contact to the ſame focus.

Draw M*f*, N*f* to the other focus, and in M F, N F, produced, if neceſſary, take $MQ = Mf$, and $NP = Nf$; and join T*f*. Becauſe T N biſects the angle *f* N F (9), and $Nf = NP$, therefore $TP = Tf$ (4. 1. E.): for a like reaſon $TQ = Tf$: therefore $TP = TQ$; becauſe $PF = NF - Nf$, and $FQ = Mf - MF$, therefore $PF = FQ$ (42. Con) Hence it is plain that the angle $TFN = = TFQ$ (8. 1. E.)

Cor. 1.—The angles which T F makes with one tangent, are equal to the angles which T*f* makes with the other tangent.

For the triangles M T*f* and M T Q are equal, and the angle $MTf =$ the angle M T Q; alſo, the angle F T P = the angle F T Q.

And taking the differences of theſe equals,

$$fTP - MTF = MTF;$$

$$\text{therefore } fTP = 2NTf = 2MTF.$$

$$\text{And } NTf = MTF$$

$$MTf = NTF.$$

Cor. 2.—If two tangents of an hyperbola, drawn from the extremities of a chord paſſing through the focus, meet in T (*fig.* 12.); then T F will be perpendicular to the chord M N. For the angles M F T, N F T, are in all caſes equal; and when M F and F N become one right line, each of the angles is a right angle.

13. If M N (*fig.* 12.) be any chord drawn through the focus of an hyperbola, and P Q, likewiſe drawn through the focus, be ordinately applied to the tranſverſe axis, then $4MF \times FN = MN \times PQ$.

Draw M S, N R, perpendicular to the tranſverſe axis, and N G, P H, M K, perpendicular to the directrix that correſponds to the focus F. Then (43. Conics)

$$PF : PH, \text{ or } FL :: MF : MK \text{ or } LS$$

(17. 5. E.) $PF : PH :: MF - PF : FS$;

in like manner, $PF : PH :: PF - FN : FR$

(11. 5. E.) and alternando, $MF - PF : PF - FN :: FS : FR$.

By ſimilar triangles, $FS : FR :: MF : FN$;

therefore $MF - PF : PF - FN :: MF : FN$;

and $(MF - PF) \times FN = (PF - FN) \times MF$;

whence $2MF \times FN = MN \times PF$,

and $4MF \times FN = MN \times PQ$.

14. If a tangent of an hyperbola, as D E (*Plate* XI. *fig.* 13.), interſect two perpendiculars drawn from the extremities of the tranſverſe axis in the points D and E; then two right lines, drawn from theſe points to one of the foci, as F, will contain a right angle.

Draw F M to the point in which D E touches the curve, and produce F M to S: then, becauſe D B and D M are tangents, therefore the angle $DFM =$ angle D F B (12). And, in like manner, becauſe A E and E M are tangents, the angle $AFE =$ angle E F S: therefore the angle E F D is half the ſum of the angles A F S and A F M, or a right angle.

Of Conjugate Hyperbolas.—It has been proved, that if M N (*fig.* 14.), limited by the aſymptotes of an hyperbola, touch the curve in P, then M N will be biſected in P (21. Con.), and the triangle M C N will be conſtantly of the ſame magnitude: whence it follows that, ſuppoſing M N to be drawn ſo as to make the triangle M C N always of one conſtant magnitude, the middle point P of M N will be conſtantly in the curve of an hyperbola, of which C P and C Q (C Q being parallel and equal to P M) are conjugate ſemidiameters, and the lines C M and C N are the aſymptotes. Draw M G, in the angle adjacent to M C N, to paſs through Q; then the triangle M C G will be equal to the triangle M C N, and Q will be the middle of M G: therefore, according to what has been obſerved, Q will always be found in the curve of an hyperbola, of which M G is a tangent, and M C and C G are the aſymptotes: and this hyperbola is ſo related to the firſt one, that the terminations of the ſecond ſemidiameters of the one curve are in the other curve, as is plain from what has already been ſaid. Four hyperbolas, comprehending the two we have been deſcribing, and their correſponding oppoſite hyperbolas are called *conjugate hyperbolas:* ſuch curves lie in oppoſite angles of the ſame aſymptotes, and the extremities of the ſecond diameters of two of the oppoſite hyperbolas are in the two remaining oppoſite hyperbolas.

The moſt remarkable properties of conjugate hyperbolas are as follows:

1. The ſecond diameters of two of the oppoſite hyperbolas are all tranſverſe diameters of the other two.

2. Two conjugate diameters of two of the oppoſite hyperbolas are alſo conjugate diameters of the other two curves.

3. If a parallelogram F H C L be completed, by drawing parallels to the aſymptotes through any point in one of

four conjugate hyperbolas, as F, that parallelogram will be conſtantly of one and the ſame magnitude.

For ſuch a parallelogram will be equal to one-fourth of the triangle M C N, or to one-fourth of the triangle M C G, which is equal to M C N.

4. And hence, if from any point F, in one of the curves, F H be drawn parallel to one aſymptote to meet the other; then C H × H F will be conſtantly of the ſame magnitude.

5. A line F K, terminated by two adjacent hyperbolas, and parallel to one aſymptote, is biſected by the other aſymptote.

For C H × H F = C H × H K.

It may be remarked, that while oppoſite hyperbolas muſt be regarded as two different branches of the ſame curve, conjugate hyperbolas are two different curves, poſſeſſing, indeed, ſome analogous properties, but really unconnected by the law of continuity. For, in the firſt place, when a plane cuts two oppoſite conic ſurfaces, it produces no more than two oppoſite hyperbolas, without the ſmalleſt trace of the conjugate hyperbolas. And in the next place, if we conſider the hyperbola as it is determined by an algebraic equation, no ſuch equation can be found that, preſerving the ſame ſyſtem of the co-ordinates, will comprehend all the four conjugate hyperbolas. Let the curves be defined by two rectangular co-ordinates x and y, parallel to the two axes; then if, in the equation which belongs to two oppoſite hyperbolas, the ordinate x be neceſſarily greater than y, in the equation of the two conjugate hyperbolas, the ſame ordinate x will neceſſarily be leſs than y; a circumſtance which plainly excludes the two latter curves from the equation that defines the two firſt. Again, if we define the curves by means of two co-ordinates x and y, parallel to the aſymptotes, which leads to this equation, $a \times b = x \times y$; then, making x and y both poſitive in one of the angles of the aſymptotes, they will become $-x$ and $-y$ in the oppoſite angles; and in the two angles adjacent to theſe, they will be x and $-y$, and $-x$ and y: now, the equations $a \times b = x \times y$, and $a \times b = -x \times -y$, which belong to the two oppoſite hyperbolas, are conſiſtent with one another, but they are both inconſiſtent with the equations $a \times b = x \times -y$, and $a \times b = -x \times y$, which would belong to the conjugate hyperbolas, if the ſame ſyſtem of the co-ordinates were preſerved.

Of the Deſcription of a Hyperbola in Plano.—1. When the tranſverſe axis and the two foci are given (*fig.* 15.), any number of points in the oppoſite hyperbolas may be thus found: Take any point O, in the tranſverſe axis produced beyond the foci, and deſcribe a triangle upon F f (22. 1. E.), that ſhall have its ſides reſpectively equal to the diſtances of O from A and B, the vertices of the tranſverſe axis; then the vertex of this triangle, M or m, will be in one of the hyperbolas: and in this way, may as many points in both curves be found as ſhall be thought neceſſary.

When the two axes are given, the foci may be readily found (Cor Def. 23. Con.), and then the curves may be deſcribed by this method.

2. A hyperbola that has its two axes equal to one another, and the angle of the aſymptotes equal to a right angle, is called an equilateral hyperbola: ſuch a curve may be thus deſcribed, by finding an indefinite number of points. Let A B = D d be the two ſemi-axes; in A B, produced either way, aſſume any point O, and, having drawn an indefinite perpendicular through O, cut C O in L with a circle deſcribed from the centre D with the radius C O, and ſet off O P, $o\,p$ upon the perpendicular, each equal to C L; then will P and p be points in one of the oppoſite curves.

3. When the two foci f and F, and the tranſverſe axis A B (*fig.* 16.) are given, the hyperbola may be deſcribed by the following mechanical contrivance. Provide a ſtraight ruler, and let it be made to turn round one focus f, ſo as to have its ſtraight edge fE always directed to f; take a thread, which is ſhorter than the whole length of the ruler, by the length of the tranſverſe axis A B, and having fixed one end of the thread in the other focus F, attach the other end to the extremity of the ruler at E: then if the ruler be turned round about f, while the thread is ſtretched tight by a pin P which ſlides along the ſtraight edge of the ruler, the point of the pin will trace the hyperbola required. For the exceſs of fp above P F is equal to the exceſs of the whole ruler above the whole length of the thread; that is, to the tranſverſe axis A B.

4. When the directrix A M (*fig.* 17.), the correſponding focus F, and the vertex V are given; from V, as a centre with the diſtance V F, deſcribe a circle, and it will cut the directrix in a point, as H; for F V A cuts the directrix at right angles, and V F is greater than V A (43. Con.): join V H, and provide a ruler M E N, with two ſtraight edges, making an angle equal to the angle V H A, and place it on the ſame ſide of the directrix M A with the focus F, ſo that the edge M E may be in the direction of M A, and the other edge E N may be turned toward F; fix one end of a thread, which is equal in length to E N in F, and attach the other end to N: then, if the thread be ſtretched tight by a pin P, which ſlides along E N, the point of that pin will deſcribe the hyperbola required. For, draw P R perpendicular to the directrix, then P E = P F; and, becauſe the angles M E N and A H V are equal, by ſimilar triangles

P E or P F : P R :: V H or V F : V A.

Therefore P deſcribes the hyperbola required (43. Con.).

Of the Area of the Hyperbola.—In the treating of the ellipſe we have ſhewn that the area of a whole ellipſe, or of any ſegment of it, has to the area of the whole circle deſcribed on the tranſverſe axis, or to the correſponding ſegment of that circle, the ſame proportion that the conjugate axis has to the tranſverſe axis; and the ſame reaſoning by which this was proved will apply equally to any two curves whatever which have their ordinates anſwering to the ſame abſciſs every where in the ſame proportion: whence it follows, that the conſtant proportion of the co-ordinates will be that of the areas taken between the ſame limits. Now, if we ſuppoſe any number of hyperbolas to be deſcribed upon the ſame tranſverſe axis, then, as it is eaſy to prove, the ordinates of theſe curves drawn to the common axis, and anſwering to the ſame abſciſs, will be proportional to the ſecond axis of the ſeveral curves: and therefore, according to what has been obſerved, the hyperbolic areas cut off by the ordinates will be proportional to the ſecond axis. This propoſition does not, indeed, enable us to ſquare the hyperbolic ſpaces: but we learn from it that the problem will be accompliſhed generally for all hyperbolas, if we can find the quadrature of any one in particular, as the equilateral hyperbola, which is the ſimpleſt of all.

In farther treating of the quadrature of the hyperbola, we ſhall conſider the area contained between the curve and its aſymptote, and ſhall begin with ſhewing that the ſpaces comprehended between the ordinates are the meaſures of the ratio of the abſciſſes taken on the aſymptotes; in other words, that the aſymptotic ſpaces are the logarithms of the abſciſſes.

1. If through F and G (*fig.* 18.) two points aſſumed in a hyperbola, two ordinates T H and G K be drawn parallel to

to one aſymptote to cut the other in H and K; then the hyperbolic ſector F C G will be equal to the mixtilineal ſpace F H K G.

For the triangle C F H will be equal to the triangle C G K, and when theſe are taken from the ſpace C F G K, the remainders, which are the ſector F C G and the ſpace F H K G, will likewiſe be equal.

2. If the abſciſſes C H, C K, C M, be taken in continued proportion, the aſymptotic ſpaces F H K G, G K M L will be equal.

Draw F L, C F, C G, C L, and let C G cut F H in N, F L in O, and M L produced in P. Becauſe C H, C L, C M are in continued proportion, therefore H N, G K, and P M will alſo be in continued proportion. Again,

L M : K G :: C K : C M (Cor. 1.)

by ſimilar triangles, G K : M P :: C K : C M;

therefore L M : K G :: G K : M P.

And, becauſe H N, K G, and P M were before ſhewn to be in continued proportion, therefore L M = H N. In like manner, it may be ſhewn that F H = P M. Therefore P L = F N, and F L will be biſected in O. Therefore every line drawn in the hyperbola parallel to F L will be biſected by the diameter C G (15. Con.): and hence it is eaſy to infer that the hyperbolic ſegment cut off by F L will be biſected by G O. And becauſe C O likewiſe biſects the triangle F C L, it is plain that the ſectors F C G and G C L are equal; and conſequently ſo are the ſpaces F H K G and G K M L, which are equal to the ſectors.

3. If the ratio of the abſciſſes C G and C H (*fig.* 19.) be equal to the ratio of the abſciſſes C D and C F; then will the aſymptotic ſpaces K G H L and E D F I, comprehended between the ordinates, be equal.

For if we take C S a mean proportional between C G and C F, it will alſo be a mean proportional between C H and C D. Therefore the ſpace K G R S = ſpace R S F I, and the ſpace L H R S = ſpace R S E D: conſequently the ſpace K G H L = ſpace E D F I.

4. The aſymptotic ſpaces comprehended between the ordinates are the meaſures of the ratios of the abſciſſes.

Let the ratio of C B to C *m* be a ſmall ratio, and ſuppoſe that of C G to C F to be an exact multiple of the ratio of C B to C *m*: then, according to what has been ſhewn, it is plain that the aſymptotic ſpace K G F I will be the like multiple of the ſpace A B *m n*. Now, the ratio of C B to C *m* may be taken ſo ſmall that all other ratios may be conſidered as exact multiples of it; and then the correſponding hyperbolic ſpaces will be the like multiples of the area A B *m n*: which proves what was propoſed.

What has here been demonſtrated of the abſciſſes and the aſymptotic ſpaces is exactly the ſame relation that ſubſiſts between numbers and their logarithms: and therefore if the abſciſſes be taken to repreſent the ſeries of natural numbers, the hyperbolic ſpaces comprehended between the ordinates will be proportional to the logarithms of the numbers.

5. Suppoſing the abſciſs to be given, it is propoſed to inveſtigate a ſeries for the aſymptotic ſpace in the equilateral hyperbola.

The vertex of the hyperbola being at A, let the ordinate A B = B C = 1, B F = x, and put z to repreſent the hyperbolic area A B F I: between C B and C F interpoſe as many mean proportionals C *m*, C *p*, &c. as there are units in the whole number denoted by i: then, according to what has been proved, all the ſpaces A B *m n*, *m n* G K, &c. of which the number is i, will be equal; and therefore, the ſpace A B *m n* $= \frac{z}{i}$: but, becauſe C F $= 1 + x$, therefore C *m* $= (1 + x)^{\frac{1}{i}}$; and B *m* × B A $= (1 + x)^{\frac{1}{i}} - 1$: now when i is a very great number, and conſequently B *m* very ſmall, the rectangle B *m* × B A may be conſidered as equivalent to the hyperbolic ſpace A B *m n*; therefore $\frac{z}{i} = (1 + x)^{\frac{1}{i}} - 1$; and $z = i \times \left\{ (1 + x)^{\frac{1}{i}} - 1 \right\}$; and by expanding the radical by the binomial theorem, we get

$$z = x - \frac{i - 1}{2\,i} \cdot x^2 + \frac{i - 1}{2\,i} \cdot \frac{2\,i - 1}{3\,i} \cdot x^3 - \&c.$$

This expreſſion of the value of z is greater than the truth for all values of i, but it differs leſs and leſs from the truth as i is taken greater and greater; and therefore, by taking the limit to which the expreſſion conſtantly approaches as i increaſes, we ſhall have accurately

$$z = x - \frac{1}{2}\,x^2 + \frac{1}{3}\,x^3 - \frac{1}{4}\,x^4 + \&c.$$

This is the ſeries which Mercator invented for the quadrature of the hyperbola, and which he publiſhed (in 1667) in his Logarithmotechnia. If the area denoted by z lie on the other ſide of A B, and B $f = x$, then it may be ſhewn, in the ſame manner as before, that $z = i \times \left\{ 1 - (1 - x)^{\frac{1}{i}} \right\}$: and, by expanding and taking the limit we ſhall get

$$z = x + \frac{1}{2}\,x^2 + \frac{1}{3}\,x^3 + \frac{1}{4}\,x^4 + \&c.$$

This ſeries, which may appear to be a very eaſy extenſion of Mercator's invention, was firſt given by Dr. Wallis of Oxford, in a letter to lord Brouncker, publiſhed in the third volume of the Philoſophical Tranſactions.

The ſame inveſtigation will apply to any hyperbola (*fig.* 20.): for preſerving the ſame denominations as before, we ſtill have the ſpace A B *m n* $= \frac{z}{i}$; and if m denote the ſine of the angle of the aſymptotes, then the ſpace A B *m n* $= m \times$ A B $\times\ m$B $= m \times \left\{ (1 + x)^{\frac{1}{i}} - 1 \right\}$; therefore $z = m \times i \times \left\{ (1 + x)^{\frac{1}{i}} - 1 \right\}$; whence

$$z = m \times \left\{ x - \frac{1}{2}\,x^2 + \frac{1}{3}\,x^3 - \frac{1}{4}\,x^4 + \&c. \right\}$$

And in like manner when the area is on the other ſide of the ordinate A B, we ſhall have

$$z = m \times \left\{ x + \frac{1}{2}\,x^2 + \frac{1}{3}\,x^3 + \frac{1}{4}\,x^4 + \&c. \right\}$$

It readily follows from what has been proved, that, in different hyperbolas (*figs.* 19 and 20.), if we take C F to C B in the ſame proportion, the aſymptotic ſpaces A B F I, or the equivalent ſectors A C I, will be proportional to the ſines of the angles formed by the aſymptotes: this ſuppoſes that B C is unit in all the hyperbolas; when this is not the caſe, the ſpace of every hyperbola will be proportional to the ſquare of B C multiplied by the ſine of the angle of the aſymptotes, or, which is an equivalent ſpace, to half the product of the two axes of the curve.

It has already been remarked that the hyperbolic trapeziums, or ſectors, bear the ſame relation to the correſponding abſciſſes, that the logarithms of numbers do to the numbers themſelves; and by taking m, or the ſine of the angle contained by the aſymptotes of a proper magnitude, the hyperbolic trapeziums or ſectors will be meaſured by the very ſame numbers as the logarithms in any propoſed ſyſtem. Thus in the equilateral hyperbola, when $m = 1$, the hyperbolic ſpaces agree in numerical value with the logarithms of Napier's ſyſtem; and if $m = .434294$, the hyperbolic ſpaces will be equivalent to the logarithms of Briggs's ſyſtem, which are thoſe contained in the tables in common uſe. From what has now been ſaid we derive an eaſy rule for computing the area of any hyperbola by means of a table of logarithms. Let the ſemi-tranſverſe axis of an hyperbola $= a$ (*fig.* 20.), the ſemi-conjugate $AY = b$, the abſciſs of the tranſverſe $CX = y$; then the ordinate $XI = \frac{b}{a}\sqrt{y^2 - a^2}$; and if X I cut the aſymptotes in O and E, then $XO = \frac{b}{a} \times y$; therefore $IO = \frac{b}{a} \times (y + \sqrt{y^2 - a^2})$: now

$$IE : EF :: AY : BY, \text{ or } BC :: OI : CF;$$

therefore $\frac{OI}{AY} = \frac{OI}{b} = \frac{y + \sqrt{y^2 - a^2}}{a} = \frac{CF}{BC} =$ value of C F when B C is unit: then the hyperbolic trapezium A B F I, or the equivalent ſector A C I, will be equal to

$$\frac{a \times b}{2} \times \text{Napier's logarithm of } \frac{y + \sqrt{y^2-a^2}}{a};$$

or if $M = .434294$, the ſame ſpace will be equal to

$$\frac{a \times b}{2\,M} \times \text{Briggs's logarithm of } \frac{y + \sqrt{y^2-a^2}}{a}.$$

With regard to the area X A I, it is the difference of the triangle I C X and the ſector A C I.

Napier's logarithms, which are expreſſed by the ſectors, or aſymptotic trapeziums of an equilateral hyperbola, in which C B is unit, have obtained the appellation of hyperbolic logarithms: but they do not ſeem to be better entitled to this name than Briggs's logarithms, which are equivalent to the ſectors, or aſymptotic trapeziums of the hyperbola, in which B C is unit, and the ſine of the angle of the aſymptotes $= .434294$. Nay, what is more, the latter ſort of logarithms may be expreſſed by the areas of an equilateral hyperbola, as well as the former: for this purpoſe we have only to make $BC = \sqrt{.434294}$; and the ſector A C I, or the trapezium A B F I, will be equal to Briggs's logarithm of the number equal to $\frac{CF}{BC}$.

6. We ſhall now finiſh what we have to ſay on the quadrature of the hyperbola with conſidering the inverſe problem, for determining the abſciſs when the hyperbolic area is given; or, which is the ſame thing, for determining the number when the logarithm is given. Now, according to what has already been ſhewn, we have, in a hyperbola that has the ſine of the angle of the aſymptotes $= m$, $z = m \times i \times \left\{(1 + x)^{\frac{1}{i}} - 1\right\}$: therefore $1 + x = \left(1 + \frac{1}{i} \cdot \frac{z}{m}\right)^i$; and, by expanding by the binomial theorem, we get $1 + x = 1 + \frac{z}{m} + \frac{i-1}{2i} \cdot \frac{z^2}{m^2} + \frac{i-1\,.\,i-2}{2i\,.\,3i} \cdot \frac{z^3}{m^3} + \frac{i-1}{2i} \cdot \frac{i-2}{3i} \cdot \frac{i-3}{4i} \cdot \frac{z^4}{m^4} +$ &c. This equation is not rigorouſly exact for any value of i, but it is the more nearly true, the greater is the number that i ſtands for; and therefore when we take the limit to which the ſeries continually approaches, we ſhall have accurately $1 + x = 1 + \frac{z}{m} + \frac{1}{1.2} \cdot \frac{z^2}{m^2} + \frac{1}{1.2.3} \cdot \frac{z^3}{m^3} + \frac{1}{1.2.3.4} \cdot \frac{z^4}{m^4} +$ &c. And if the area z be taken on the other ſide of the ordinate A B, then, in like manner, $1 - x = 1 - \frac{z}{m} + \frac{1}{1.2} \cdot \frac{z^2}{m^2} - \frac{1}{1.2.3} \cdot \frac{z^3}{m^3} + \frac{1}{1.2.3.4} \cdot \frac{z^4}{m^4} +$ &c.

Of the Rectification of the Hyperbola.—1. Let C B (*fig.* 21.) the ſemi-tranſverſe axis of an hyperbola, be unit, the diſtance of the focus from the centre $CF = e$; and conſequently the ſemi-conjugate axis $= \sqrt{e^2 - 1} = CD$: let C P, an abſciſs of the tranſverſe axis, $= x$; the correſponding ordinate $MP = y$; and draw M T a tangent of the curve: then, by the property of the curve, we have

$$CB^2 : CD^2 :: CP^2 - CB^2 : PM^2;$$
$$\text{or } 1 : e^2 - 1 :: x^2 - 1 : y^2;$$

hence $y = \sqrt{e^2 - 1\,.\,x^2 - 1}$. Let the length of the arc B M of the hyperbola be denoted by H; then

$$\dot{H} = \sqrt{\dot{x}^2 + \dot{y}^2} = \dot{x}\sqrt{1 + \frac{x^2(e^2-1)}{x^2-1}} = \frac{\dot{x}\sqrt{e^2x^2-1}}{\sqrt{x^2-1}}.$$

If the tangent M T cut the tranſverſe in T, then $CT \times CP = CB^2$; hence $CT = \frac{1}{x}$; and $TP = x - \frac{1}{x} = \frac{x^2-1}{x}$; therefore $MT = \sqrt{TP^2 + MP^2} = \frac{\sqrt{(x^2-1)(e^2x^2-1)}}{x}$: Put $\tau = MT$, then by taking the fluxions in the value of τ, we ſhall get

$$\dot{\tau} = \frac{\dot{x}\sqrt{e^2x^2-1}}{\sqrt{x^2-1}} + \frac{\dot{x}\sqrt{x^2-1}}{x^2\sqrt{e^2x^2-1}};$$

$$\text{therefore } \dot{\tau} - \dot{H} = \frac{\dot{x}\sqrt{x^2-1}}{x^2\sqrt{e^2x^2-1}}:$$

thus the rectification of the hyperbola is reduced to the inveſtigation of the fluent of $\frac{\dot{x}\sqrt{x^2-1}}{x^2\sqrt{e^2x^2-1}}$, generated while the abſciſs increaſes from unit to any indefinite value; for it is clear from what has been proved, that this fluent will expreſs the difference between the hyperbolic arc M B and its tangent M T. And becauſe a tangent of the hyperbola approaches indefinitely to the aſymptote as the point of contact recedes from the vertex, we may likewiſe infer from what has been ſaid, that the whole fluent generated while x increaſes from being equal to unit to be infinitely great, is equivalent to the exceſs of the aſymptote above the curve, when both are indefinitely extended: this laſt caſe being the moſt intereſting one of the problem, we ſhall principally have it in view in what we have farther to add on this ſubject.

Let $\sqrt{x^2 - 1} = \tan.\, \phi$, and while x increaſes from 1 to be infinitely great, the arc ϕ will increaſe from 0 to be a quadrant, or $\frac{\pi}{2}$ (π denoting 3.14159, &c.): then $x = \frac{1}{\text{coſ.}\, \phi}$. $\sqrt{e^2x^2 - 1} = \frac{\sqrt{e^2 - \text{coſ.}^2\phi}}{\text{coſ.}\,\phi}$; and $\dot{x} = \frac{\dot{\phi}\, \text{ſin.}\, \phi}{\text{coſ.}^2\, \phi}$: therefore by ſubſtitution

$$\tau - H = \int . \frac{\dot{x}\sqrt{x^2-1}}{x^2\sqrt{e^2x^2-1}} = \int . \frac{\dot{\phi}\, \text{ſin.}^2\, \phi}{\sqrt{e^2 - \text{coſ.}^2\, \phi}};$$

and, becauſe $\text{ſin.}^2\, \phi = \frac{1}{2} - \frac{1}{2}\, \text{coſ.}\, 2\,\phi$, and $\text{coſ.}^2\, \phi = \frac{1}{2} + \frac{1}{2}\, \text{coſ.}\, 2\,\phi$, therefore

$$\tau - H = \tfrac{1}{2} \cdot \int . \frac{\dot{\phi}\,(1 - \text{coſ.}\, 2\,\phi)}{\sqrt{e^2 - \frac{1}{2} - \frac{1}{2}\, \text{coſ.}\, 2\,\phi}}:$$

aſſume, $a^2 + b^2 = e^2 - \frac{1}{2}$, $2\,a\,b = \frac{1}{2}$; then $a + b = e$, $a - b = \sqrt{e^2 - 1}$; and $a = \frac{e + \sqrt{e^2 - 1}}{2}$,

$b = \frac{e - \sqrt{e^2 - 1}}{2}$; conſequently, $\sqrt{e^2 - \frac{1}{2} - \frac{1}{2}\,\text{coſ.}\,2\,\phi}$ $= \sqrt{a^2 + b^2 - 2\,a\,b\,\text{coſ.}\,2\,\phi} = \left(\text{putting } f = \frac{b}{a}\right)$ $a \times \sqrt{1 + f^2 - 2\,f\,\text{coſ.}\,2\,\phi}$: again, let $\Delta = \sqrt{1 + f^2 - 2\,f\,\text{coſ.}\,2\,\phi}$, then $\text{coſ.}\,2\,\phi$ $= \frac{1 + f^2 - \Delta^2}{2\,f}$; and $(1 - \text{coſ.}\,2\,\phi) = \frac{1}{2}\cdot\frac{\Delta^2}{f}$ $- \frac{1}{2}\cdot\frac{(1-f)^2}{f}$: therefore $\tau - \mathrm{H} = \frac{1}{2\,a}$.

$$\int\!.\,\frac{\dot{\phi}\,(1 - \text{coſ.}\,2\,\phi)}{\sqrt{1 + f^2 - 2f\,\text{coſ.}\,2\,\phi}} = \frac{1}{4af}\,\cdot$$

$$\left\{ \int\!.\,\Delta\,.\,\dot{\phi} - (1-f)^2 \cdot \int\!.\,\frac{\dot{\phi}}{\Delta} \right\}$$

: and, becauſe $\frac{1}{4\,a\,f} = \frac{e + \sqrt{e^2 - 1}}{2}$, and $\frac{(1 - f)^2}{4\,a\,f} = \frac{2\,(e^2 - 1)}{e + \sqrt{e^2 - 1}}$, therefore

$$\tau - \mathrm{H} = \frac{e + \sqrt{e^2 - 1}}{2} \times \int\!.\,\Delta\,.\,\dot{\phi} - \frac{2\,(e^2 - 1)}{e + \sqrt{e^2 - 1}}\,.\;\int\!.\,\frac{\dot{\phi}}{\Delta}.$$

Now, let Δ and $\frac{1}{\Delta}$ be developed into ſeries containing the coſines of the multiples of $2\,\phi$; as thus,

$$\Delta = \mathrm{A}^{(0)} + \mathrm{A}^{(1)}\,\text{coſ.}\,2\,\phi + \mathrm{A}^{(2)}\,\text{coſ.}\,4\,\phi + \&\text{c.}$$

$$\frac{1}{\Delta} = \mathrm{B}^{(0)} + \mathrm{B}^{(1)}\,\text{coſ.}\,2\,\phi + \mathrm{B}^{(2)}\,\text{coſ.}\,4\,\phi + \&\text{c.};$$

then, taking the whole fluents from $\phi = 0$ to $\phi = \frac{\pi}{2}$, we have $\int \Delta\,.\,\dot{\phi} = \mathrm{A}^{(0)} \times \frac{\pi}{2}$, and $\int \frac{\dot{\phi}}{\Delta} = \mathrm{B}^{(0)} \times \frac{\pi}{2}$: with regard to $\mathrm{A}^{(0)}$ and $\mathrm{B}^{(0)}$, they will be found by theſe ſeries, *viz.*

$$\mathrm{A}^{(0)} = 1 + (\tfrac{1}{2})^2.f^2 + \left(\frac{1\,.\,1}{2\,.\,4}\right)^2.f^4 + \left(\frac{1\,.\,1\,.\,3}{2\,.\,4\,.\,6}\right)^2.f^6 + \&\text{c.}$$

$$\mathrm{B}^{(0)} = 1 + (\tfrac{1}{2})^2.f^2 + \left(\frac{1\,.\,3}{2\,.\,4}\right)^2.f^4 + \left(\frac{1\,.\,3\,.\,5}{2\,.\,4\,.\,6}\right)^2.f^6 + \&\text{c.}$$

and thus we get the following value of the exceſs of the aſymptote above the hyperbolic curve, when both are infinitely extended, *viz.*

$$\frac{\pi}{2} \times \left\{ \frac{e + \sqrt{e^2 - 1}}{2}\,.\,\mathrm{A}^{(0)} - \frac{2\,(e^2 - 1)}{e + \sqrt{e^2 - 1}}\,\cdot\,\mathrm{B}^{(0)} \right\};$$

and this expreſſion is, in moſt caſes, very commodious for computation, becauſe, on account of the ſmallneſs of $f^2 = \left(\frac{e - \sqrt{e^2 - 1}}{e + \sqrt{e^2 - 1}}\right)^2$, the ſeries for $\mathrm{A}^{(0)}$ and $\mathrm{B}^{(0)}$ converge very rapidly.

Hyperbola, *Acute*, an hyperbola whoſe aſymptotes make an acute angle.

Hyperbola, *Ambigenal*, is that which has one of its infinite legs inſcribed, and the other circumſcribed. See Ambigenal.

Hyperbola, *Equilateral* or *Rectangular*, is that wherein the conjugate axes are equal, and whoſe aſymptotes make a right angle. Since the parameter is a third proportional to the conjugate axis, it is alſo equal to the axis: wherefore if in the equation $y^2 = b\,x + \frac{b\,x\,x}{a}$, expreſſing the nature of the hyperbola, you ſuppoſe $b = a$; the equation $y^2 = a\,x + x^2$ will expreſs the nature of the equilateral hyperbola. And hence the ſquares of the ordinates y^2 and z^2 are to each other as $a\,x + x^2$ and $a\,v + v^2$: that is, as the rectangles of the abſciſſes into right lines compoſed of the abſciſs and parameter. See Hyperbola, *ſupra.*

Hyperbolas, *Infinite*, or Hyperbolas *of the higher kind*, are thoſe defined by the equation $a\,y^{m+n} = b\,x^m\,(d + x)^n$. Hence in the infinite hyperbolas $a\,y^{m+n} : a\,v^{m+n} = b\,x^m\,(a + x)^n : b\,z^m\,(a + z)^n$; that is $y^{m+n} : v^{m+n} :: x^m\,(a + x)^n : z^m\,(a + z)^n$. See Hyperboloid.

As the hyperbola of the firſt kind, or order, has two aſymptotes; that of the ſecond kind, or order, has three; that of the third four, &c.

In reſpect of theſe, the hyperbola of the firſt kind is called the *Apollonian* or *conical* hyperbola: it is thus called in contradiſtinction to the hyperbolas of the higher kinds. It is called hyperbola from ὑπερβαλλειν, *to exceed*, becauſe in this curve the ſquare of the ordinate or y^2 is equal to $b\,x + \frac{b\,x^2}{a}$, and therefore exceeds the product of the parameter *b*, by the abſciſs *x*.

Hyperbola, *Inſcribed*. See Inscribed.

Hyperbola, *for the locus of an*, ſee Locus.

Hyperbola, *for the quadrature of an*, ſee Quadrature and Hyperbola, *ſupra.*

Hyperbolas, *Conjugated*, a name given to four hyperbolas, when the firſt and ſecond axes of two oppoſite hyperbolas are the ſecond and firſt axes of two other oppoſite hyperbolas. See Hyperbola, *ſupra.*

Hyperbolas of all degrees may be expreſſed by the equation $x^m\,y^n = a^{m+n}$ where *a* is a given quantity, *x* an abſciſſa taken on the aſymptote, and *y* an ordinate to the aſymptote.

HYPERBOLÆON. The hyperbolæon tetrachord was the moſt acute of the five tetrachords in the Greek ſyſtem. This word is the genitive caſe of the plural ſubſtantive ὑπερβολαι, *ſummits, extremes;* the moſt acute ſounds being at the ſummit of the reſt.

HYPERBOLE, Ὑπερβολη, *ſuperlatio*, formed of the verb ὑπερβαλλειν, *to exceed*, in *Rhetoric*, a figure, whereby the truth and reality of things are either exceſſively enlarged or diminiſhed. See Exaggeration.

The character of an hyperbole is to exaggerate or extenuate the idea of the thing ſpoken of, beyond the bounds of truth, or even probability. As, he ran ſwifter than the wind; he went ſlower than a tortoiſe, &c.

Hyperboles, ſays Seneca, lie without deceiving; they lead the mind to truth by fictions; they convey the ſentiment intended, though by expreſſing it in terms which render it incredible. The hyperbole promiſes too much, in order to make you conceive enough. There is nothing faulty in an hyperbole, when it is *ultrà fidem*, as Quintilian ſays, provided that it be not *ultrà modum*.

Ariſtotle obſerves, that hyperboles are the favourite figures of young authors, who love exceſs and exaggeration; but that philoſophers ſhould not uſe them without a great deal of reſerve.

The pitch to which an hyperbole may be carried, is a point of great delicacy; to carry it too far is to deſtroy it: it is of the nature of a bow-ſtring, which by immoderate tenſion, ſlackens; and frequently has an effect quite contrary to that intended. Longinus.

Thoſe hyperboles are beſt, which are latent, and are not taken for hyperboles. For this reaſon, they ſhould ſçarcely ever be uſed but in a paſſion; and in the middle of ſome important incident: ſuch as the hyperbole of Herodotus ſpeaking of the Lacedæmonians, who fought at Thermopylæ: "They defended themſelves, for ſome time, with the arms that were left them, and at laſt with their hands and teeth; till the barbarians, continually ſhooting, buried them, as it were, with their arrows." Now what likelihood is there, that naked men ſhould defend themſelves with their hands and teeth againſt armed men; and that ſo many perſons ſhould be buried under their enemies' arrows? Yet does there appear ſome probability in the thing, by reaſon it is not ſought for the ſake of the figure; but the hyperbole ſeems to ariſe out of the ſubject itſelf. Id.

Of the like kind is that paſſage of a comic poet, mentioned by Longinus: "He had lands in the country no larger than a Lacedæmonian epiſtle."

There are certain manners of tempering the harſhneſs of hyperboles, and giving them an air of probability. Virgil ſays, that to ſee the fleets of Antony and Auguſtus at the battle of Actium, one would have taken them for the Cyclades floating on the water: and Florus, ſpeaking of the expedition wherewith the Romans built a number of veſſels in the firſt Punic war, ſays, 'It ſeemed not that the ſhips were built by workmen, but that the trees were transformed into ſhips by the gods." They do not ſay, that the ſhips were floating iſlands; nor that the trees were metamorphoſed into ſhips; but only that one might have taken them to be ſo. This precaution ſerves as a kind of paſſport to the hyperbole, if we may be allowed the phraſe, and makes it go down even in proſe; for what is excuſed before it is ſaid, is always heard favourably, how incredible ſoever it be. Bouhours. The exceſs in this trope is called *auxeſis;* as when we ſay of any thing that is very high, *it reaches to the ſkies:* the defect or contrary extreme is termed *meioſis;* as when we ſay of a very lean perſon, *he is nothing but ſkin and bones*, or *a mere ſkeleton.*

HYPERBOLIC, or Hyperbolical, ſomething relating either to an hyperbole, or an hyperbola.

Hyperbolic *Conoid.* See Conoid.

Hyperbolic *Cylindroid*, is a ſolid figure, whoſe generation is given by ſir Chriſtopher Wren, in the Philoſophical Tranſactions.

Two oppoſite hyperbolas being joined by the tranſverſe axis, and through the centre, a right line being drawn at right angles to that axis; and above that, as an axis, the hyperboles being ſuppoſed to revolve; by ſuch revolution, a body will be generated, which is called the hyperbolic cylindroid, whoſe baſes, and all ſections parallel to them, will be circles. In a ſubſequent tranſaction, the ſame author applies the new figure to the grinding of hyperbolical glaſſes; affirming, that they muſt be formed this way, or not at all. Phil. Tranſ. vol. iv. p. 961.

Hyperbolic *Leg* of a curve, is that which has an aſymptote, or tangent at an infinite diſtance.

Sir Iſaac Newton reduces all curves, both of the firſt and of the higher kinds, into thoſe with hyperbolic legs, and thoſe with parabolic ones; that is, ſuch as have aſymptotes, and ſuch as have not, or ſuch as have tangents at an infinite diſtance, and ſuch as have not. See Curve.

Hyperbolic *Line* is uſed by ſome authors for what we call the hyperbola itſelf.

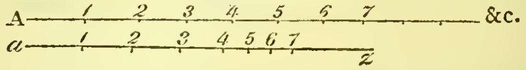
In this ſenſe the plane ſurface, terminated by the curve line, is called the hyperbola; and the curve line that terminates it, the hyperbolic line.

Hyperbolic *Logarithms*, or *Napierian Logarithms*, are a ſeries of numbers, particularly uſeful in the determination and computation of fluents, ariſing from various problems in the higher branches of the mathematics; at the ſame time they have the property of common logarithms in facilitating many arithmetical operations, ſuch as multiplication, diviſion, extraction of roots, &c. &c.

Theſe numbers are called hyperbolic logarithms, becauſe they expreſs the areas or ſpaces contained between the aſymptote and curve of the hyperbola; thoſe areas being limited by ordinates parallel to the other aſymptote; the ordinates themſelves decreaſing in a geometrical progreſſion. But this does not appear to be a proper method of denominating them, as ſuch areas may be made to denote any ſyſtem of logarithms whatever; for which reaſon they are now generally termed Napierian logarithms; from the name of their illuſtrious inventor, John Napier, baron of Merchiſton, in Scotland. (See Logarithms.) As we ſhall, under the article Logarithms, enter at ſome length on the hiſtory of the invention, and the ſucceſſive improvements of theſe very uſeful numbers; it will only be neceſſary, under the preſent article, to attend to the particular ſyſtem which is the ſubject of our immediate conſideration; by ſhewing, 1ſt, how it happened, that Napier fell upon this ſyſtem, excluſively of all others; 2dly, in what reſpect it is inferior to that of the common logarithms, for arithmetical and trigonometrical operations; 3dly, that theſe numbers neceſſarily ariſe in the determination and computation of fluents; 4thly, we ſhall ſhew their application to the problems before mentioned; and laſtly, preſent the reader with the moſt extenſive table of hyperbolic logarithms that has yet been publiſhed; being for every number from 1 to 10,000, and each true to the eighth place of decimals.

Napier, in the conſtruction of his logarithms, did not adapt them to the ſeries of natural numbers 1, 2, 3, 4, 5, 6, &c. as it was not his intention to extend them to arithmetical operations in general; but he confined his labours to that circumſtance which firſt ſuggeſted to him the neceſſity of the invention; and therefore he adapted his logarithms to the approximate numbers, which expreſs the natural ſines of every minute in the quadrant.

The ſame reſtricted idea was purſued through his method of conſtructing the logarithms. As the lines of the ſines, of all arcs, are parts of the radius, or ſine of the quadrant; he conceived the line of the radius to be deſcribed or run over by a point moving along it, in ſuch a manner, that in equal portions of time it generated or cut off parts in a decreaſing geometrical progreſſion; leaving the ſeveral remainders, or lines, in geometrical progreſſion alſo; while another point in an indefinite line, deſcribed equal parts of it in the ſame equal portions of time; ſo that the reſpective ſums of theſe, or the whole lines generated, were always the arithmeticals or logarithms of theſe ſines.



Thus *a z* is the given radius on which all the ſines are to be taken, and A, 1, 2, &c. the indefinite line containing the logarithms; theſe lines being both generated by the motion of points, beginning at A and *a*. Now at the end of the 1ſt, 2d, 3d, &c. moments or equal portions of time, the moving points being found at the places marked 1, 2, 3, &c. then will *z a*, *z* 1, *z* 2, *z* 3, &c. be the ſeries of natural ſines; and A 0, or (0), A 1, A 2, A 3, &c. will be their logarithms, ſuppoſing the point which generates *a z* to move every where, with a velocity decreaſing in proportion to its diſtance from *z*; *viz.* its velocity in the points o, 1, 2, 3, &c. to be reſpectively as the diſtances *z* o, *z* 1, *z* 2, *z* 3, &c.; while the velocity of the point generating the logarithmic line remains always the ſame as in the firſt point A, or o. Hutton's Introduction to Logarithms.

In this ſtate the ſyſtem of logarithms was undetermined, having only ſuppoſed one condition or limitation; namely, that the logarithm of *a z*, or radius, ſhould be o, or radius itſelf equal to unity, which was aſſumed, in order to render the trigonometrical operations the more eaſy; but another condition was ſtill neceſſary to limit the ſcale or ſyſtem; and as the one which we have deſcribed was contrived in order to ſimplify the operations; ſo the ſecond was aſſumed, in order to render the calculation of the tables as eaſy as poſſible; for which reaſon he ſuppoſed, that the two generating points ſhould begin to move from A and *a* with equal velocities, or that the increments, as A 1, deſcribed in the firſt moments, ſhould be equal; and this ſuppoſition gave at once to every number its particular logarithm, and thus he found that his logarithm of the ratio of 10 to 1 became 2.30258509, and hence it happened, that by means of theſe two accidental and arbitrary aſſumptions, Napier's ſyſtem of logarithms was of that kind which we deſignate by hyperbolic logarithms.

It would, however, be unintereſting to the reader to follow Napier any further in his conſtruction, as methods much more ſimple have been ſince diſcovered for the formation of logarithmic tables; and which ſhew far more diſtinctly the nature of thoſe numbers; in order to the explanation of which, it will be proper to begin by defining logarithms in general: thus,

The logarithm of a number is the exponent of that power of ſome other number, which is equal to the firſt: hence, if $r^x = a$, then will x repreſent the logarithm of a; and r will be the radix of the ſyſtem, which it is obvious may be aſſumed at pleaſure. If we take $r = 10$, it will be the common logarithmic ſyſtem; and if r be taken $= 2.7182818$, it gives the hyperbolic logarithmic ſcale; and the reaſon for aſſigning to r the above value will be evident from the following inveſtigation. Since $r^x = a$, we muſt, in order to find the logarithm of a, obtain an expreſſion for x, in the above equation in terms of r and a; which may be effected thus:

Let $a = 1 + p$, and $\frac{1}{x} = z$; then from $r^x = a$, we deduce $r = (1 + p)^z = 1 + \left(p - \frac{p^2}{2} + \frac{p^3}{3} - \frac{p^4}{4} + \&c.\right) z + \frac{1}{2} \left(p - \frac{p^2}{2} + \frac{p^3}{3} - \frac{p^4}{4} + \&c.\right)^2 z^2 + \frac{1}{2 \cdot 3} \left(p - \frac{p^2}{2} + \frac{p^3}{3} - \frac{p^4}{4} + \&c.\right)^3 z^3 + \frac{1}{2 \cdot 3 \cdot 4} \left(p - \frac{p^2}{2} + \frac{p^3}{3} - \frac{p^4}{4} + \&c.\right)^4 z^4 + \&c.$; and by making $p - \frac{p^2}{2} + \frac{p^3}{3} - \frac{p^4}{4} + \&c. = s$; we ſhall have $1 + sz + \frac{1}{2} s^2 z^2 + \frac{1}{2 \cdot 3} s^3 z^3 + \frac{1}{2 \cdot 3 \cdot 4} s^4 z^4 + \frac{1}{2 \cdot 3 \cdot 4 \cdot 5} s^5 z^5 + \&c. = r$; or $s z + \frac{1}{2} s^2 z^2 + \frac{1}{2 \cdot 3} s^3 z^3 + \frac{1}{2 \cdot 3 \cdot 4} s^4 x^4 + \frac{1}{2 \cdot 3 \cdot 4 \cdot 5} s^5 z^5 + \&c. = r - 1$; which let be put equal to q; then by reverting the ſeries, z or $\frac{1}{x}$ will be found $= \frac{q - \frac{1}{2} q^2 + \frac{1}{3} q^3 - \frac{1}{4} q^4 + \frac{1}{5} q^5 - \&c.}{s} = \frac{q - \frac{1}{2} q^2 + \frac{1}{3} q^3 - \frac{1}{4} q^4 + \frac{1}{5} q^5 - \&c.}{p - \frac{1}{2} p^2 + \frac{1}{3} p^3 - \frac{1}{4} p^4 + \frac{1}{5} p^5 - \&c.}$; and, conſequently, $x = \frac{p - \frac{1}{2} p^2 + \frac{1}{3} p^3 - \frac{1}{4} p^4 + \frac{1}{5} p^5 - \&c.}{q - \frac{1}{2} q^2 + \frac{1}{3} p^3 - \frac{1}{4} p^4 + \frac{1}{5} p^5 - \&c.}$ or, ſubſtituting for p and q their reſpective values; that is, $p = a - 1$, and $q = r - 1$, we have the following general expreſſion for the logarithm of a; *viz.* log. a

$$= \frac{(a-1) - \frac{1}{2}(a-1)^2 + \frac{1}{3}(a-1)^3 - \frac{1}{4}(a-1)^4 + \frac{1}{5}(a-1)^5 - \&c.}{(r-1) - \frac{1}{2}(r-1)^2 + \frac{1}{3}(x-1)^3 - \frac{1}{4}(r-1)^4 + \frac{1}{5}(r-1)^5 - \&c.}$$

which is a general expreſſion, in terms of a and the radix r, which laſt may, therefore, be aſſumed any number at pleaſure, greater or leſs than unity. Now as r, in every ſyſtem, is a conſtant quantity, being always the number whoſe logarithm, in the ſyſtem to which it belongs, is 1, the above expreſſion may be ſimplified, either by aſſuming r equal to ſome particular number, and from thence finding the value of the ſeries conſtituting the denominator; or, by aſſuming the whole ſeries equal to ſome particular number, and from thence finding the value that muſt be given to the radix r.

By the latter of theſe methods the denominator may be made to vaniſh, by aſſuming the value of the ſeries of which it conſiſts equal to 1; in which caſe the logarithm of a becomes, log. $a = (a - 1) - \frac{1}{2}(a-1)^2 + \frac{1}{3}(a-1)^3 - \frac{1}{4}(a-1)^4 + \frac{1}{5}(a-1)^5 - \&c.$; or, making again $a = 1 + p$; we have log. $(1 + p) = p - \frac{1}{2} p^2 + \frac{1}{3} p^3 - \frac{1}{4} p^4 + \frac{1}{5} p^5 - \&c.$ and by means of the expreſſion, $(r - 1) - \frac{1}{2}(r-1)^2 + \frac{1}{3}(r-1)^3 - \frac{1}{4}(r-1)^4 + \&c. = 1$, we find $r = 2.7182818$, &c. which is the number we before ſtated to be the radix of the hyperbolic ſyſtem.

The above is evidently the ſimpleſt form that the logarithmic ſeries admits of; and, therefore, ſuch as would be naturally adopted by any perſon, before he was aware of the advantages or diſadvantages of it in other reſpects, when compared with a different ſyſtem; and thus it was Napier firſt employed theſe numbers, although he did not know of the above method of arriving at them. But as ſoon as Briggs had conſidered the nature of their generation, and the purpoſes they were intended to anſwer, he ſoon convinced himſelf, and Napier likewiſe, that much advantage would ariſe in their application, by taking for the radix of the ſyſtem of logarithms the ſame number, as was the radix of the ſcale of notation; that is, by aſſuming $r = 10$; by which means, the logarithm of the ſame digits in the ſame order was always conſtant, whether theſe were integral, decimal, or compounded of both; and only the index or characteriſtic was to be changed; and various other advantages that this method poſſeſſes over the other, will be explained under the article LOGARITHMS: we ſhall, therefore, only obſerve here, that the advantages of Briggs's ſyſtem are ſo deciſive, that Napier's would, before this time, have been forgotten, had not the invention of fluxions again called into action the dormant powers of hyperbolic logarithms.

We have already ſeen that the hyperbolic logarithm of $1 + p$, or of $1 + x$, by writing x inſtead of p, is hyp. log. $(1 + x) = x - \frac{1}{2} x^2 + \frac{1}{3} x^3 - \frac{1}{4} x^4 + \frac{1}{5} x^5 - \&c.$

Now let it be required to find the fluent of the fluxion $\frac{\dot{x}}{1 + x}$: this in a ſeries becomes $\dot{x}\left(\frac{1}{1 + x}\right) = \dot{x}(1 - x + x^2 - x^3 + x^4 - x^5 \&c.) = \dot{x} - x\dot{x} + x^2\dot{x} - x^3\dot{x} + x^4\dot{x} - \&c.$; or, taking the fluents by the common rule, we have the fluent of $\frac{\dot{x}}{1+x} = x - \frac{1}{2}x^2 + \frac{1}{3}x^3 - \frac{1}{4}x^4 + \frac{1}{5}x^5 - \&c.$

but this laſt ſeries is the ſame as that expreſſing the hyp. log. of $(1+x)$, therefore the fluent of $\frac{\dot{x}}{1+x}$ is the hyp. log. of $1+x$. And the ſame rule is general for every quantity, of which the numerator is the fluxion, or any multiple of the fluxion of the denominator; theſe being all reducible to the ſame form. (See Fluxions and Fluents.) Thus we have

the fluent of $\frac{\dot{x}}{x \pm a}$ = hyp. log. of $(x \pm a)$

the fluent of $\frac{2x\dot{x}}{a^2+x^2}$ = hyp. log. of (a^2+x^2)

the fluent of $\frac{nx^{n-1}\dot{x}}{a^n+x^n}$ = hyp. log. of (a^n+x^n)

the fluent of $\frac{\dot{x}}{\sqrt{x^2 \pm 2a^2}}$ = hyp. log. of $(x+\sqrt{x^2 \pm a^2})$

the fluent of $\frac{\dot{x}}{\sqrt{x^2 \pm 2a\dot{x}}}$ = hyp. log. of $(x \pm a + \sqrt{x^2 \pm 2ax})$

the fluent of $\frac{2a\dot{x}}{a^2-x^2}$ = hyp. log. of $\left(\frac{a+x}{a-x}\right)$

the fluent of $\frac{2a\dot{x}}{x\sqrt{a^2+x^2}}$ = hyp. log. of $\left(\frac{\sqrt{a^2+x^2}-a}{\sqrt{a^2+x^2}+a}\right)$

the fluent of $\frac{x^{-2}\dot{x}}{\sqrt{b^2+x^{-2}}}$ = − hyp. log. of $\left(\frac{1+\sqrt{1+b^2x^2}}{x}\right)$

Theſe are only a few of the caſes in which hyperbolic logarithms are applied to the computation of fluents; and for the application of which to practice, the following table will be found very uſeful: it will need little or no explanation, being the ſame in form as the common tables of logarithms; and all that is neceſſary to be obſerved is, that as the index of the logarithm is not repeated in every column, a ſmall daſh (—) is placed over the firſt figure of the decimal, when any change takes place in the index. Thus, for example, the hyp. log. of 1097 is 7.00033446, the ſmall daſh indicating, that the index in that place changes from 6 to 7. If the hyperbolic logarithm of a fraction be required, we have only to ſubtract the log. of the denominator from that of the numerator for the log. ſought: thus, the hyp. log. of $\frac{119}{1172} = 4.77912349 - 7.06646697 = -2.28734348$; the whole of which expreſſion is negative, whereas in the common ſyſtem, the decimal part always retains a poſitive value, and the index only becomes negative; and this is again one of the inconveniences attending the hyperbolic ſyſtem. When the natural number correſponding to any given hyp. log. is required, whether the given log. be poſitive or negative, it is always beſt to add to the given log. the log. of ſuch a power of 10 as will bring it as near the end of the tables as poſſible, and then having found the natural number the ſame as in the common tables; divide the reſult by the ſame power of 10 for the natural number ſought: the reaſon for which is, that the differences are too variable in the beginning of the table to be of any aſſiſtance in deducing the proportional parts. Suppoſe, for example, the given hyperbolic logarithm was − 3.28734348, and it was required to find the correſponding natural number. Now the hyp. log. of 10 = 2.30258509, multiply this by 5, we have 10^5 = 11.51292545, which being added to the given log. we have − 3.28734348 + 11.51292545 = 8.22558197. Again,

$$\begin{array}{llll} \text{Nat. number to} & 8.22550309 = 3735 & \left\{\begin{array}{l} 8.22558197 \\ 8.22550309 \end{array}\right. & \\ \text{——————} & 8.22587090 = 3736 & & \\ \hline \text{Difference} & 36781 : 1 :: & 7888 : .2 & \end{array}$$

hence $\frac{3735.2}{100000} = .037352$ is the natural number required.

And in this manner may the natural number anſwering to any given hyp. log. not in the table, be reduced to another within the limits of the table, by adding or ſubtracting from it ſuch powers of 10 as are ſufficient for that purpoſe; obſerving always to repeat the reverſe operation after the number is obtained. And by a ſimilar method, the hyp. log. of any number not found in the table may be reduced to another, that is, by either multiplying or dividing it by ſuch powers of 10 as may be neceſſary for that purpoſe; only remembering to ſubtract or add to the logarithm thus found the logarithm of the ſame power of 10, as that by which the given number was multiplied or divided. This will be more evident from the following examples:

Exam. 1.—Find the hyperbolic logarithm of .7854.

Firſt, $.7854 = \frac{7854}{10000}$; and, therefore, the hyp. log. of .7854 = hyp. log. 7854 − hyp. log. 10^4 = 8.96877824 − 4 × 2.30258509 = − 0.24156212, the logarithm ſought.

Exam. 2.—Find the hyperbolic logarithm of 78.54.

Here $78.54 = \frac{7854}{100}$; and, therefore, the hyp. log. of 78.54 = hyp. log. of 7854 − hyp. log. 10^2 = 8.96877824 − 2 × 2.30258509 = 4.36360806, the log. required.

The following table of hyperbolic logarithms has been computed by Mr Peter Barlow, of the Royal Military Academy, Woolwich; and it is preſumed that it will be conſidered as an acquiſition to mathematicians: it forms only a ſmall portion of an extenſive ſet of mathematical tables calculated by the ſame gentleman; moſt of which are entirely new, but the ſlow demand that ſuch works experience will, it is feared, prevent the appearance of this uſeful performance.

TABLE *of Hyperbolic Logarithms of all Numbers, from* 1 *to* 10,000.

	0	1	2	3	4	5	6	7	8	9
0	inf. neg.	0.00000000	0.69314718	1.09861229	1.38629436	1.60943791	1.79175947	1.94591015	2.07944154	2.19722458
1	2.30258509	39789527	48490665	56494936	63905733	70805020	77258872	83321334	89037176	94443898
2	99573227	0̄4452244	09104245	13549422	17805383	21887582	25809654	29583687	33220451	36729583
3	3.40119738	43398720	46573590	49650756	52636052	55534806	58351894	61091791	63758616	66356165
4	68887945	71357207	73766962	76120012	78418963	80666249	82864140	85014760	87120101	89182030
5	91202301	93182563	95124372	97029191	98898405	0̄0733319	02535169	04305127	06044301	07753744
6	4.09434456	11087386	12713439	14313473	15888308	17438727	18965474	20469262	21950771	23410650
7	24849524	26267988	27666612	29045944	30406509	31748811	33073334	34380542	35670883	36944785
8	38202663	39444915	40671925	41884061	43081680	44265126	45434730	46590812	47733681	48863637
9	49980967	51085951	52178858	53259949	54329478	55387689	56434819	57471098	58496748	59511985
10	60517019	61512052	62497281	63472899	64439090	65396035	66343909	67282883	68213123	69134788
11	70048037	70953020	71849887	72738782	73619845	74493213	75359019	76217393	77068462	77912349
12	78749174	79579055	80402104	81218436	82028157	82831374	83628191	84418709	85203026	85981240
13	86753445	87519732	88280192	89034913	89783980	90527478	91265489	91998093	92725369	93447393
14	94164242	94875989	95582706	96284463	96981330	97673374	98360662	99043259	99721227	0̄0394631
15	5.01063529	01727984	02388052	03043792	03695260	04342512	04985601	05624581	06259503	06890420
16	07517382	08140436	08759634	09375020	09986643	10594547	11198779	11799381	12396398	12989871
17	13579844	14166356	14749448	15329159	15905530	16478597	17048400	17614973	18178355	18738581
18	19295685	19849703	20400669	20948615	21493576	22035583	22574667	23110862	23644196	24174702
19	24702407	25227343	25749537	26269019	26785816	27299956	27811466	28320373	28826703	29330482
20	29831737	30330491	30826770	31320598	31811999	32300998	32787617	33271879	33753808	34233425
21	34710753	35185813	35658627	36129217	36597602	37063803	37527841	37989735	38449506	38907173
22	39362755	39816270	40267738	40717177	41164605	41610040	42053500	42495002	42934563	43372200
23	43807931	44241771	44673737	45103845	45532112	45958551	46383181	46806014	47227067	47646355
24	48063892	48479693	48893773	49306144	49716823	50125821	50533154	50938834	51342875	51745290
25	52146092	52545294	52942909	53338949	53733427	54126355	54517744	54907608	55295958	55682806
26	56068163	56452041	56834450	57215403	57594910	57972983	58349631	58724866	59098698	59471138
27	59842196	60211882	60580207	60947180	61312811	61677110	62040087	62401751	62762111	63121178
28	63478960	63835467	64190707	64544690	64897424	65248918	65599181	65948222	66296048	66642669
29	66988092	67332327	67675380	68017261	68357977	68697536	69035945	69373214	69709349	70044357
30	70378247	70711026	71042702	71373281	71702770	72031178	72358510	72684775	73009978	73334128
31	73657230	73979291	74300319	74620319	74939299	75257264	75574221	75890177	76205138	76519110
32	76832100	77144112	77455155	77765232	78074352	78382518	78689738	78996017	79301361	79605775
33	79909265	80211838	80513497	80814249	81114099	81413053	81711116	82008293	82304590	82600011
34	82894562	83188248	83481074	83773045	84064166	84354442	84643878	84932478	85220248	85507192
35	85793315	86078622	86363118	86646806	86929691	87211779	87493073	87773578	88053299	88332239
36	88610403	88887796	89164421	89440283	89715387	89989735	90263333	90536185	90808294	91079664
37	91350301	91620206	91889385	92157842	92425580	92692603	92958914	93224519	93489420	93753621
38	94017125	94279938	94542061	94803499	95064255	95324333	95583737	95842469	96100534	96357934
39	96614674	96870756	97126184	97380961	97635091	97888576	98141421	98393628	98645201	98896142
40	99146455	99396143	99645209	99893656	0̄0141488	00388707	00635316	00881319	01126717	01371516
41	6.01615716	01859321	02102335	02344759	02586597	02827852	03068526	03308622	03548143	03787092
42	04025471	04263283	04500531	04737218	04973346	05208917	05443935	05678401	05912320	06145692
43	06378521	06610809	06842559	07073773	07304453	07534603	07764224	07993320	08221891	08449941
44	08677473	08904488	09130988	09356977	09582456	09807428	10031895	10255859	10479323	10702289
45	10924758	11146734	11368218	11589213	11809720	12029742	12249281	12468339	12686918	12905021
46	13122649	13339804	13556489	13772705	13988455	14203741	14418563	14632926	14846830	15060277
47	15273269	15485809	15697899	15909539	16120732	16331480	16541785	16751649	16961073	17170060
48	17378610	17586727	17794411	18001665	18208491	18414889	18620862	18826412	19031541	19236249
49	19440539	19644413	19847872	20050917	20253552	20455776	20657593	20859003	21060008	21260610

TABLE of Hyperbolic Logarithms.

	0	1	2	3	4	5	6	7	8	9
50	6.21460810	21660610	21860012	22059017	22257627	22455843	22653667	22851100	23048145	23244802
51	23441073	23636959	23832463	24027585	24222327	24416690	24610677	24804287	24997524	25190388
52	25382881	25575004	25766759	25958146	26149168	26339826	26530121	26720055	26909628	27098843
53	27287701	27476202	27664349	27852142	28039584	28226675	28413416	28599809	28785856	28971557
54	29156914	29341928	29526600	29710932	29894925	30078579	30261898	30444880	30627529	30809844
55	30991828	31173481	31354805	31535800	31716469	31896811	32076829	32256524	32435896	32614947
56	32793678	32972091	33150185	33327963	33505425	33682573	33859408	34035930	34212142	34388043
57	34563636	34738921	34913899	35088572	35262940	35437004	35610766	35784227	35957387	36130248
58	36302810	36475076	36647045	36818719	36990098	37161185	37331979	37502482	37672695	37842618
59	38012254	38181602	38350663	38519440	38687932	38856141	39024067	39191711	39359075	39526160
60	39692966	39859493	40025745	40191720	40357420	40522846	40687999	40852879	41017488	41181827
61	41345896	41509696	41673228	41836494	41999493	42162227	42324696	42486902	42648846	42810527
62	42971948	43133108	43294009	43454652	43615037	43775165	43935037	44094654	44254017	44413126
63	44571982	44730586	44888939	45047042	45204895	45362500	45519856	45676966	45833828	45990445
64	46146818	46302946	64588930	46614472	46769873	46925032	47079950	47234629	47389070	47543272
65	47697236	47850964	48004456	48157713	48310735	48463524	48616079	48768402	48920493	49072353
66	49223984	49375384	49526556	49677499	49828215	49978704	50128967	50279005	50428817	50578406
67	50727771	50876914	51025834	51174533	51323011	51471269	51619308	51767127	51914729	52062113
68	52209280	52356231	52502966	52649486	52795792	52941884	53087763	53233429	53378884	53524127
69	53669160	53813982	53958596	54103000	54247196	54391185	54534966	54678541	54821910	54965074
70	55108034	55250789	55393340	55535689	55677836	55819780	55961524	56103067	56244409	56385553
71	56526497	56667243	56807791	56948142	57088296	57228254	57368017	57507584	57646957	57786136
72	57925121	58063914	58202514	58340922	58479139	58617165	58755001	58892648	59030105	59167373
73	59304453	59441346	59578051	59714570	59850903	59987050	60123012	60258789	60394382	60529792
74	60665019	60800063	60934924	61069604	61204103	61338422	61472560	61606519	61740298	61873898
75	62007321	62140565	62273632	62406523	62539237	62671775	62804138	62936325	63068339	63200178
76	63331843	63463336	63594656	63725803	63856779	63987583	64118217	64248680	64378973	64509097
77	64639051	64768837	64898455	65027905	65157187	65286303	65415252	65544035	65672652	65801105
78	65929392	66057515	66185474	66313270	66440902	66568372	66695679	66822825	66949809	67076632
79	67203295	67329797	67456139	67582322	67708346	67834211	67959919	68085468	68210860	68336095
80	68461173	68586095	68710861	68835471	68959927	69084228	692 8374	69332367	69456206	69579892
81	69703425	69826805	69950034	70073111	70196037	70318811	70441435	70563909	70686234	70808408
82	70930434	71052311	71174040	71295620	71417053	71538339	71659477	71780470	71901315	72022016
83	72142570	72262979	72383244	72503364	72623340	72743172	72862861	72982407	73101810	73221071
84	73340189	73459166	73578001	73696696	73815249	73933663	74051936	74170069	74288064	74405919
85	74523635	74641213	74758653	74875955	74993119	75110147	75227038	75343792	75460410	75576892
86	75693239	75809450	75925527	76041469	76157277	76272951	76388491	76503898	76619171	76734313
87	76849321	76964198	77078942	77193556	77308038	77422389	77536609	77650699	77764659	77878490
88	77992191	78105763	78219206	78332520	78445706	78558765	78671695	78784498	78897174	79009724
89	79122146	79234443	79346613	79458658	79570578	79682372	79794041	79905586	80017007	80128303
90	80239476	80350526	80461452	80572255	80682936	80793494	80903931	81014245	81124438	81234509
91	81344460	81454290	81563999	81673588	81783057	81892407	82001636	82110747	82219739	82328612
92	82437367	82546004	82654522	82762923	82871207	82979374	83087423	83195357	83303173	83410874
93	83518459	83625928	83733281	83840520	83947644	84054653	84161548	84268328	84374995	84481548
94	84587988	84694314	84800527	84906628	85012617	85118493	85224257	85329909	85435450	85540880
95	85646198	85751406	85856503	85961490	86066367	86171134	86275791	86380339	86484778	86589107
96	86693328	86797441	86901445	87005341	87109129	87212810	87316383	87419850	87523209	87626461
67	87729607	87832647	87935580	88038408	88141130	88243747	88346259	88448665	88550967	88653164
98	88755257	88857246	88959131	89060912	89162590	89264164	89365635	89467004	89568270	89669433
99	89770494	89871453	89972311	90073066	90173721	90274274	90374726	90475077	90575328	90675478

TABLE of Hyperbolic Logarithms.

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101	91770561	91869522	91968385	92067150	92165818	92264389	92362863	92461240	92559520	92657703
102	92755790	92853782	92951677	93049477	93147181	93244789	93342303	93439721	93537045	93634274
103	93731408	93828448	93925395	94022247	94119006	94215671	94312242	94408721	94505106	94601399
104	94697599	94793707	94889722	94985646	95081477	95177216	95272864	95368421	95463886	95559261
105	95654544	95749737	95844839	95939851	96034773	96129605	96224346	96318999	96413561	96508035
106	96602419	96696714	96790920	96885038	96979067	97073008	97166860	97260625	97354302	97447891
107	97541393	97634807	97728134	97821374	97914528	98007594	98100574	98193468	98286275	98378997
108	98471632	98564182	98656646	98749025	98841318	98933527	99025650	99117689	99209643	99301512
109	99393298	99484999	99576616	99668149	99759598	99850964	99942247	00033446	00124562	00211595
110	7.00306546	00397414	00488199	00578902	00669523	00760061	00850518	00940893	01031187	01121399
111	01211529	01301579	01391547	01481435	01571242	01660968	01750614	01840180	01929665	02019071
112	02108396	02197642	02286809	02375895	02464903	02553831	02642681	02731451	02820143	02908756
113	02997291	03085748	03174126	03262426	03350648	03438793	03526860	03614849	03702761	03790596
114	03878354	03966035	04053639	04141166	04228617	04315992	04403290	04490512	04577658	04664728
115	04751722	04838641	04925484	05012252	05098945	05185562	05272105	05358573	05444966	05531284
116	05617528	05703698	05789794	05875815	05961763	06047637	06133437	06219163	06304816	06390395
117	06475903	06561336	06646697	06731985	06817200	06902343	06987413	07072411	07157336	07242190
118	07326972	07411682	07496320	07580886	07665382	07749805	07834158	07918439	08002650	08086790
119	08170859	08254857	08338785	08422642	08506429	08590146	08673793	08775371	08840878	08924316
120	09007684	09090982	09174212	09257372	09340463	09423485	09506438	09589322	09672138	09754885
121	09837564	09920174	10002717	10085191	10167597	10249936	10332206	10414409	10496545	10578613
122	10660614	10742547	10824414	10906214	10987946	11069612	11151212	11232744	11314211	11395611
123	11476945	11558213	11639414	11720550	11801620	11882625	11963564	12044437	12125245	12205988
124	12286666	12367279	12447826	12528309	12608727	12689081	12769370	12849595	12929755	13009851
125	13089883	13169851	13249755	13329595	13409372	13489085	13568735	13648321	13727844	13807303
126	13886700	13966034	14045304	14124512	14203657	14282740	14361760	14440718	14519613	14598447
127	14677218	14755927	14834574	14913160	14991684	15070146	15148546	15226886	15305163	15383380
128	15461536	15539630	15617664	15695636	15773548	15851400	15929190	16006921	16084591	16162200
129	16239750	16317239	16394668	16472038	16549348	16626597	16703788	16780918	16857990	16935002
130	17011954	17088848	17165682	17242458	17319174	17395832	17472431	17548971	17625453	17701877
131	17778242	17854548	17930797	18006987	18083120	18159194	18235211	18311170	18387072	18614455
132	18538702	18614430	18690102	18765716	18841274	18916774	18992217	19067603	19142933	19218206
133	19293422	19368582	19443685	19518732	19593723	19668657	19743535	19818358	19893124	19967835
134	20042489	20117088	20191632	20266120	20340552	20414929	20489251	20563518	20637729	20711886
135	20785987	20860034	20934026	21007963	21081845	21155673	21229447	21303166	21376831	21450441
136	21523998	21597500	21670949	21744143	21817684	21890971	21964204	22037384	22110510	22183583
137	22256602	22329568	22402481	22475341	22548147	22620901	22693602	22766250	22838845	22911388
138	22983878	23056315	23128700	23201033	23273314	23345542	23417718	23489842	23562914	23633934
139	23705903	23777819	23849684	23921497	23993259	24064969	24136628	24208236	24279792	24351297
140	24422752	24494155	24565507	24636808	24708058	24779258	24850407	24921506	24992554	25063551
141	25134498	25205395	25276242	25347038	25417785	25488481	25559127	25529724	25700271	25770768
142	25841215	25911613	25981961	26052260	26122509	26192709	26262860	26332962	26403014	26473018
143	26542972	26612878	26682735	26752543	26822302	26892013	26961675	27031289	27100854	27170371
144	27239839	27309260	27378632	27447956	27517232	27586460	27655640	27724773	27793857	27862894
145	27931884	28000825	28069720	28138566	28207366	28276118	28344823	28413481	28482091	28550655
146	28619171	28687641	28756064	28824440	28892769	28961052	29029288	29197578	29165621	29233718
147	29301768	29369772	29437730	29505642	29573507	29641327	29709101	29776828	29844510	29912146
148	29979737	30047281	30114781	30182234	30249642	30317005	30384333	30451595	30518822	30586003
149	30653140	30720231	30787278	30854280	30921237	30988149	31055016	31121838	31188616	31255350

TABLE of Hyperbolic Logarithms.

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150	7·31322039	31388683	31455283	31521839	31588350	31654818	31721241	31787620	31853955	31920246
151	31986493	32052696	32118856	32184971	32251043	32317072	32383057	32448998	32514896	32580750
152	32646561	32712329	32778054	32843735	32909374	32974969	33040521	33106031	33171497	33236921
153	33302301	33367640	33432935	33498188	33563398	33628566	33693691	33752774	33823815	33888813
154	33953770	34018684	34083555	34148385	34213173	34277919	34342623	34407285	34471905	34536484
155	34601021	34665516	34729970	34794382	34858753	34923082	34987370	35051617	35115823	35179987
156	35244110	35308192	35372233	35436292	35500190	35564110	35627988	35691824	35755620	35819375
157	35883090	35946764	36010397	36073990	36137543	36201055	36264527	36327959	36391350	36454701
158	36518013	36581284	36644515	36707706	36770857	36833969	36897040	36960072	37023064	37086017
159	37148930	37211803	37274637	37337431	37400186	37462902	37525578	37588215	37650813	37713371
160	37775891	37838371	37900813	37963215	38025579	38087904	38150189	38212437	38274645	38336815
161	38398946	38461038	38523092	38585108	38647085	38709024	38770924	38832786	38894610	38956395
162	39018143	39079852	39141523	39203157	39264752	39326309	39387829	39449311	39510755	39572161
163	39633529	39494860	39756154	39817409	39878628	39939808	40000952	40062058	40123126	40184158
164	40245152	40306109	40367029	40427912	40488758	40549566	40610338	40671773	40731771	40792432
165	40853057	40913644	40974195	41034710	41095188	41155629	41216033	41276402	41336734	41397029
166	41457288	41517511	41577698	41637848	41697962	41758040	41818082	41878088	41938058	41997992
167	42057891	42117753	42177579	42237370	42297125	42356844	42416528	42476176	42535789	42595366
168	42654907	42714413	42773884	42833319	42892719	42952084	43011414	43070708	43129968	43189192
169	43248381	43307535	43366654	43425738	43484788	43543802	43602782	43661727	43720637	43779512
170	43838353	43897159	43955931	44014668	44173371	44132039	44190673	44249272	44307837	44366368
171	44424865	44483327	44541756	44600150	44658510	44716836	44775128	44833386	44891610	44949801
172	45007957	45066080	45124168	45182224	45240245	45298223	45356187	45414108	45471995	45529849
173	45587669	45645456	45703209	45760929	45818616	45876269	45933890	45991477	46049031	46106551
174	46164039	46221494	46278916	46336305	46393760	46450983	46508273	46565531	46622756	46679947
175	46737107	46794233	46851327	46908388	46965417	47022414	47079377	47136309	47193208	47250074
176	47306909	47363711	47420481	47477218	47533924	47590597	47647238	47703847	47760424	47816969
177	47873483	47929964	47986413	48042831	48099216	48155570	48211892	48268183	48324442	48380669
178	48436864	48493028	48549161	48605262	48661331	48717369	48773376	48829352	48885296	48941208
179	48997090	49052940	49108759	49164547	49220304	49276030	49331725	49387389	49443022	49498623
180	49554194	49609735	49665244	49720722	49776170	49831587	49886973	49942329	49997654	50052949
181	50108212	50163446	50218649	50273821	50328963	50384075	50439156	50494207	50549227	50604218
182	50659178	50714108	50779008	50823878	50878717	50933527	50988306	51043056	51097775	51152465
183	51207125	51261554	51316355	51370925	51425465	51479976	51534457	51588909	51643330	51697722
184	51752085	51806418	51860722	51914996	51969240	52023456	52077642	52131798	52185925	52240023
185	52294092	52348131	52402142	52456123	52510075	52563998	52627891	52671756	52725592	52779399
186	52833177	52886926	52940646	52994337	53048000	53101633	53155238	53208814	53262362	53315881
187	53369371	53422833	53476266	53529670	53583046	53636394	53689713	53743004	53796266	53849500
188	53902706	53955883	54019032	54062153	54115246	54168310	54221346	54274355	54327335	54380287
189	54432211	54486107	54538975	54591815	54644627	54697412	54750168	54812897	54855598	54908271
190	54960917	55013534	55066124	55118687	55171222	55223729	55276208	55328661	55381085	55433482
191	55485852	55538194	55590509	55642797	55695057	55747290	55799496	55851674	55903826	55960950
192	56008047	56060116	56112159	56164175	56216163	56268125	56320059	56371967	56423848	56475701
193	56527528	56579328	56631101	56682848	56733568	56786261	56837927	56789566	56941179	56992766
194	57044325	57095858	57147365	57188845	57250299	57301726	57353126	57404501	57455848	57507170
195	57558465	57609734	57660977	57712193	57763383	57814547	57865685	57916797	57967882	58018942
196	58069975	58120983	58171964	58222919	58273849	58324752	58375630	58426482	58477308	58528108
197	58578882	58629631	58680354	58731051	58781722	58832368	58882988	58933582	58984151	59034695
198	59085212	59135705	59186171	59236613	59287029	59337419	59387784	59438124	59488439	59538728
199	59588992	59639230	59689544	59739632	59789795	59839933	59890046	59940133	59990196	60040233

Table of Hyperbolic Logarithms.

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201	60589000	60638739	60688453	60738143	60787807	60837447	60887063	60936654	60986220	61035762
202	61085279	61134772	61184240	61233684	61283103	61332498	61381868	61431215	61480537	61529834
203	61579107	61628356	61677581	61726781	61775958	61825110	61874238	61923342	61972421	62021477
204	62070509	62119516	62168500	62217459	62266395	62315307	62364195	62413059	62461899	62510715
205	62559507	62608276	62657021	62705742	62754439	62803113	62851763	62900389	62948992	62997571
206	63046126	63094658	63143166	63191651	63240113	63288551	63336965	63386456	63433724	63482068
207	63530389	63578686	63626960	63675211	63723439	63771643	63819824	63867982	63916117	63964229
208	64012317	64060383	64108425	64156444	64204440	64252413	64300364	64348291	64396195	64444076
209	64491934	64539770	64587583	64635372	64683139	64730883	64778605	64826303	64873979	64921631
210	64969262	65016870	65064455	65112018	65159557	64520775	65254569	65302041	65349491	65396918
211	65444323	65491705	65539064	65586402	65633717	65681009	65728279	65775527	65822753	65879956
212	65917137	65964295	66011432	66058546	66105638	66152708	66199756	66241782	66293785	66340766
213	66387726	66434663	66481579	66528472	66575343	66622193	66669020	66715826	66762609	66809371
214	66856111	66902829	66949525	66996200	67042852	67089483	67136092	67182680	67229246	67275790
215	67322312	67368813	67415292	67461750	67508186	67554600	67600993	67647365	67693715	67740043
216	67786350	67832636	67878900	67925143	67971364	68017564	68063743	68109900	68156036	68202151
217	68248245	68294317	68340368	68386398	68432407	68478394	68524361	68570306	68616230	68662133
218	68708016	68753877	68799717	68845536	68891334	68937111	68982867	69028602	69074316	69120010
219	69165682	69211334	69256965	69302575	69348164	69393733	69439280	69484807	69526313	69575799
220	69621264	69666708	69712132	69757535	69802917	69848278	69893620	69938941	69984241	70029520
221	70074779	70120018	70165236	70210434	70255611	70300768	70345905	70391021	70436117	70481192
222	70526247	70571282	70616297	70661291	70706265	70751219	70796153	70841067	70885960	70930833
223	70975686	71020519	71065332	71110125	71154898	71199650	71244383	71289096	71333789	71378462
224	71423114	71467747	71512360	71556953	71601527	71646079	71690613	71735127	71779621	71824095
225	71868549	71912984	71957399	72001794	72046169	72090525	72134861	72179178	72223474	72267751
226	72312009	72356247	72400466	72444665	72488844	72533003	72577144	72621265	72665366	72709448
227	72753511	72797554	72841568	72885582	72929567	72973533	73017479	73061407	73105314	73149203
228	73193072	73236922	73280753	73324564	73368357	73412130	73455884	73499619	73543335	73587032
229	73630710	73674368	73718008	73761628	73805230	73848812	73892376	73935920	73979446	74022952
230	74066440	74109909	74153359	74196790	74240202	74283559	74326970	74370325	74413663	74456981
231	74500280	74543561	74586823	74630036	74673291	74716496	74759684	74802852	74853002	74889133
232	74932246	74975341	75018416	75061473	75104512	75147531	75190533	75233516	75276481	75329427
233	75362355	75405264	75448155	75491027	75533881	75576716	75619534	75662333	75705114	75747877
234	75790621	75833347	75876054	75918743	75961415	76004068	76046703	76089320	76131918	76174498
235	76217061	76259605	76302131	76344639	76387129	76429600	76472054	76514490	76556908	76599308
236	76641690	76884053	76726400	76768728	76811038	76853330	76895604	76937961	76980100	77022320
237	77064523	77106709	77148876	77191025	77233157	77275271	77317368	77359447	77401508	77443552
238	77485577	77527585	77569575	77611548	77653503	77695440	77737360	77779263	77821147	77863015
239	77904864	77946696	77988511	78030309	78072089	78113851	78155596	78197323	78239034	78280726
240	78322402	78344060	78405700	78447323	78488930	78530518	78572090	78613644	78655181	78696700
241	78738203	78779688	78821156	78862607	78904040	78945457	78986856	79028238	79069603	79110951
242	79152282	79193595	79234892	79276172	79317435	79358680	79399909	79441120	79482315	79523493
243	79564654	79605797	79646924	79688034	79729127	79770204	79811263	79852305	79892331	79934339
244	79975332	80016307	80057265	80098207	80139132	80180040	80220932	80261806	80302664	80343506
245	80384330	80425138	80465930	80506704	80547462	80588204	80628929	80669637	80710329	80751004
246	80791663	80832305	80872931	80913539	80954132	80994709	81035268	81075812	81116338	81156849
247	81197343	81237821	81278282	81318727	81359155	81399567	81439963	81480343	81520706	81561053
248	81601384	81641698	81681997	81722279	81762544	81802794	81843027	81883244	81923445	81963630
249	82003799	82043952	82084088	82124208	82164313	82204401	82244473	82284529	82324569	82364593

TABLE of Hyperbolic Logarithms.

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250	7.82404601	82444593	82484569	82524529	82564473	82604401	82644313	82684210	82724090	82763955
251	82803803	82843636	82883453	82923254	82963039	83002808	83042562	83082299	83122021	83161728
252	83201418	83241093	83280752	83320394	83360022	83399634	83439230	83478811	83518375	83557924
253	83597458	83636976	83676478	83715965	83755436	83794895	83834331	83873756	83913165	83952558
254	83991936	84031298	84070645	84109977	84149292	84188593	84227878	84267147	84306402	84345640
255	84384864	84424072	84463264	84502441	84541604	84580750	84619881	84658998	84698098	84737183
256	84776254	84815309	84854348	84893373	84932382	84971376	85010354	85049318	85088266	85127200
257	85166118	85205020	85243908	85282781	85321639	85360481	85399309	85438121	85476918	85515701
258	85554468	85593220	85631957	85670679	85709386	85748079	85786756	85825418	85864066	85902698
259	85941315	85979918	86018506	86057079	86095636	86134180	86172708	86211221	86249720	86288203
260	86326672	86365126	86403566	86441990	86480400	86518795	86557176	86595541	86633892	86672229
261	86710550	86748857	86887149	86825426	87263689	86911938	86940171	86978390	87016595	87054784
262	87092960	87131120	87169266	87207398	87245515	87283617	87321705	87359779	87397838	87435882
263	87473912	87511928	87549929	87587916	87625888	87663846	87701789	87739718	87777633	87815533
264	87853420	87891291	87929148	87966991	88004820	88042634	88080434	88118220	88155992	88193749
265	88231492	88269221	88306935	88344635	88382321	88419993	88457651	88495295	88532924	88570539
266	88608140	88645727	88683300	88720859	88758403	88795934	88833450	88870952	88908441	88945915
267	88983375	89020821	89058253	89095672	89133076	89170466	89209842	89245204	89282553	89319887
268	89357207	89394514	89431806	89469085	89506350	89543600	89580838	89618061	89655270	89692466
269	89729647	89766815	89803969	89841109	89878236	89915348	89952447	89989532	90026604	90063661
270	90100705	90137735	90174752	90211754	90248744	90285719	90322681	90359629	90396563	90433484
271	90470391	90507285	90544165	90581031	90617884	90654723	90691549	90728361	90765159	90801944
272	90838716	90875474	90912218	90948950	90985667	91022371	91059061	91095738	91132402	91169052
273	91205689	91242312	91278922	91315518	91352102	91388671	91365228	91461771	91498301	91534817
274	91571320	91607810	91644286	91680749	91717198	91753635	91790059	91826469	91862865	91899249
275	91935619	91971976	92008320	92044650	92080968	92117272	92153563	92189841	92226106	92262357
276	92298596	92334821	92371033	92407232	92443418	92479591	92515751	92551898	92588032	92624152
277	92660591	92696354	92732436	92768505	92804560	92840603	92876632	92912649	92948652	92984643
278	93020621	93056585	93092537	93128476	93164402	93200315	93236215	93272102	93307977	93343839
279	93379687	93415523	93451346	93487156	93522954	93558739	93594510	93630269	93666015	93702749
280	93737460	93773178	93808873	93844555	93880225	93915882	93951526	93987158	94022776	94058383
281	94093976	94129557	94165125	94200681	94236224	94271754	94307272	94342776	94378269	94413749
282	94448216	94484671	94520113	94555542	94590960	94626364	94661756	94697136	94732503	94767857
283	94803199	94838529	94873845	94909150	94944442	94979722	95014989	95050243	95085486	95120716
284	95155933	95191138	95226331	95261511	95296679	95331835	95366978	95402108	95437227	95472333
285	95507427	95542509	95577578	95612635	95647680	95682712	95717732	95752740	95787736	95822719
286	95857690	95892649	95927596	95962531	95997453	96032463	96067261	96102147	96136020	96171882
287	96206731	96241568	96276393	96311206	96346007	96380795	96415572	96450336	96485089	96519829
288	96554557	96589274	96623978	96658669	96693350	96728013	96762674	96797318	96831950	96866569
289	96901178	96935774	96970358	97004930	97039491	97074039	97108575	97143100	97177612	97212113
290	97246602	97281078	97315543	97349996	97384438	97428867	97453284	97487690	97522084	97556466
291	97590836	97625194	97659541	97693875	97728199	97762510	97796809	97831097	97865373	97899637
292	97933889	97968130	98002359	98036577	98070782	98104976	98139158	98173329	98207487	98241635
293	98275770	98309894	98344006	98378107	98412196	98446281	98480339	98514393	98548436	98582467
294	98616486	98650494	98684490	98718474	98752448	98786410	98820359	98854298	98888225	98922141
295	98956045	98989937	99023819	99057688	99091546	99125393	99159228	99193052	99226864	99260665
296	99294455	99328232	99361999	99395755	99429499	99463231	99496952	99530662	99564360	99598047
297	99631723	99665388	99699041	99732682	99766313	99799932	99833539	99867136	99900721	99934295
298	99967858	00001409	00034949	00068478	00101996	00135503	00168998	00202482	00235955	00269416
299	8.00302867	00336305	00369734	00403151	00436556	00469951	00503334	00536706	00570068	00603418

TABLE of Hyperbolic Logarithms.

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300	8.00636756	00670085	00703401	00736706	00770001	00803285	00836557	00869818	00903068	00936307
301	00969536	01002753	01035959	01069154	01102338	01135511	01168673	01201824	01234964	01268093
302	01301211	01334318	01367414	01400499	01433573	01466637	01499689	01532731	01565761	01598781
303	01631789	01664788	01697775	01730750	01763716	01796670	01829613	01862547	01895468	01928379
304	01961279	01994169	02026047	02059915	02092772	02125618	02158453	02191278	02224091	02256895
305	02289687	02322469	02355239	02387999	02420748	02453487	02486215	02518932	02551639	02584334
306	02616019	02649694	02682357	02714010	02747653	02780285	02812905	02845516	02878116	02910705
307	02943284	02975852	03008409	03040956	03073492	03106017	03138533	03171038	03203531	03236015
308	03268488	03300949	03333401	03365843	03398273	03430694	03463103	03495502	03527891	03560269
309	03592636	03624994	03657340	03689677	03722003	03754318	03786623	03818918	03851202	03883475
310	03915739	03947992	03980234	04012466	04044688	04076899	04109100	04141291	04173471	04205641
311	04237800	04269949	04302088	04334217	04366335	04398443	04430540	04462627	04494705	04526772
312	04558828	04590874	04622910	04654935	04686951	04718966	04759951	04782936	04814916	04846874
313	04878828	04910772	04942705	04974629	05006542	05038445	05070338	05102221	05134093	05165956
314	05197808	05229649	05261481	05293304	05325115	05356917	05388708	05420489	05452260	05484022
315	05515773	05547514	05579245	05610965	05642676	05674377	05706068	05737749	05769419	05801080
316	05832731	05864371	05896001	05927622	05959233	05990833	06022424	06054005	06085575	06117136
317	06148687	06179227	06211758	06243279	06274790	06306291	06337782	06369263	06400735	06432196
318	06463647	06495089	06526520	06557942	06589354	06620757	06652148	06683531	06714904	06746266
319	06777620	06808963	06840295	06871619	06902932	06934236	06965531	06996815	07028089	07059354
320	07090609	07121854	07153089	07184315	07215531	07246737	07277933	07309120	07340297	07371464
321	07402622	07433769	07464908	07496036	07527154	07558264	07589363	07620453	07651532	07682603
322	07713664	07744715	07775756	07806788	07837810	07868823	07899825	07930819	07961803	07992777
323	08023742	08054697	08085642	08116578	08147504	08178421	08209328	08240225	08271113	08301992
324	08332861	08363720	08394570	08425411	08456242	08487063	08517875	08548677	08579470	08610254
325	08641028	08671792	08702547	08733293	08764028	08794775	08825473	08856181	08886879	08917568
326	08948247	08978918	09009578	09040230	09070872	09101504	09132127	09162741	09193346	09223941
327	09254526	09285103	09315660	09346227	09376775	09407315	09437844	09468365	09498876	09529378
328	09559870	09590353	09620827	09651292	09681747	09712193	09742630	09773057	09803476	09833885
329	09864284	09894675	09925056	09955428	09985791	10016145	10046489	10072824	10107150	10137467
330	10167775	10198073	10228362	10258643	10288913	10319175	10349428	10379671	10409906	10440131
331	10470347	10500554	10530752	10560940	10591119	10621290	10651452	10681604	10711747	10741881
332	10772606	10802122	10832229	10862327	10892416	10922495	10952565	10982628	11012680	11042724
333	11072758	11102784	11132800	11162808	11192806	11222796	11252776	11282748	11312710	11342664
334	11372609	11402544	11432471	11462389	11492297	11522197	11552088	11581970	11611843	11641707
335	11671562	11701409	11731246	11761075	11790894	11820705	11850507	11880300	11910084	11939859
336	11969625	11999383	12029131	12058871	12088602	12118324	12148037	12177742	12207438	12237124
337	12266802	12296472	12326132	12355784	12385426	12415060	12444686	12474302	12503910	12533509
338	12563099	12592680	12622253	12651817	12681372	12710919	12740456	12769985	12799506	12829017
339	12858520	12888014	12917500	12946976	12976444	13005904	13035355	13064797	13094230	13123655
340	13153071	13182478	13217277	13241267	13270649	13300022	13329386	13358742	13388089	13417427
341	13446757	13476078	13505391	13534695	13563990	13593277	13622555	13651825	13681086	13710339
342	13739583	13768818	13798045	13827264	13856474	13885675	13914868	13944052	13978228	14002395
343	14031554	14060704	14089846	14118979	14148104	14177220	14206328	14235428	14264519	14293601
344	14322675	14351741	14380798	14409846	14438887	14467918	14496942	14525957	14554963	14583961
345	14612951	14641932	14670905	14699870	14728826	14757774	14786713	14815644	14844567	14873781
346	14902387	14931284	14960174	14989054	15017927	15046791	15075647	15104495	15133334	15162165
347	15190987	15219802	15248608	15277405	15306195	15334976	15363749	15392513	15421269	15450018
348	15478757	15507489	15536211	15564927	15593634	15622332	15651023	15679705	15708379	15737044
349	15765702	15794351	15822992	15851624	15880249	15908865	15937474	15966074	15994666	16023249

TABLE of Hyperbolic Logarithms.

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350	8.16051825	16080392	16108951	16137502	16165945	16194580	16223106	16251625	16280135	16380638
351	16337132	16365618	16394095	16422566	16451027	16479480	16507926	16536363	16564792	16594214
352	16621627	16650032	16678429	16706818	16735199	16763572	16791936	16820293	16848642	16876982
353	16905315	16933640	16961956	16990265	17018565	17046858	17075142	17103419	17131687	17159948
354	17188201	17216445	17244682	17272910	17301132	17329344	17357549	17385745	17413934	17442115
355	17470288	17498453	17526610	17554760	17582901	17611034	17639160	17667277	17695387	17723489
356	17751582	17779668	17807746	17835817	17863879	17891933	17919990	17948019	17976049	18004072
357	18032087	18060095	18088094	18116086	18144070	18172046	18200014	18227974	18255926	18283871
358	18311808	18339737	18367658	18395572	18423477	18451375	18479265	18507148	18535022	18562889
359	18590748	18618599	18646443	18674279	18702107	18729927	18757740	18785544	18813341	18841131
360	18868912	18896686	18924453	18952211	18979962	19007705	19035440	19063168	19090888	19118600
361	19146305	19174002	19201691	19229373	19257047	19284713	19312372	19340023	19367667	19395302
362	19422930	19450551	19478164	19505769	19533367	19560967	19588539	19616114	19643681	19671241
363	19698793	19726337	19753874	19781403	19808925	19836439	19863945	19891444	19918936	19946419
364	19973896	20001365	20028826	20056280	20083726	20111164	20134895	20166019	20193435	20220844
365	20248245	20275638	20303024	20330402	20357774	20385137	20412493	20439841	20467183	20494517
366	20521843	20549161	20576472	20603776	20631073	20658361	20685643	20712917	20740183	20767442
367	20794694	20821938	20849175	20876405	20903627	20920841	20958048	20985248	21012440	21039625
368	21066803	21093973	21121136	21148292	21175439	21202580	21229714	21256839	21283958	21311069
369	21338174	21365270	21392359	21419441	21446511	21473583	21500643	21527696	21554741	21581779
370	21608810	21635833	21662849	21689858	21716860	21743853	21770841	21797820	21824793	21851758
371	21878716	21905666	21932609	21959545	21986474	22013396	22040310	22067217	22094117	22121009
372	22147895	22174773	22204644	22228507	22255364	22282213	22309055	22325890	22362718	22389538
373	22416351	22443157	22469956	22496748	22523532	22550309	22587090	22603843	22630599	22657347
374	22684089	22710823	22737551	22764271	22790984	22817690	22844388	22871080	22897764	22924442
375	22951112	22977775	23004431	23031080	23057722	23084356	23110984	23137604	23164218	23190824
376	23217424	23244016	23270601	23297179	23323750	23350314	23376870	23403421	23429964	23456499
377	23483028	23509549	23536064	23562572	23589073	23615566	23642053	23668532	23695005	23721470
378	23747929	23774380	23800825	23827262	23853693	23880117	23906533	23932942	23959345	23985741
379	24012129	24038512	24064886	24091254	24117615	24143969	24170316	24196656	24222989	24249315
380	24275635	24301947	24328252	24354551	24380842	24406137	24433405	24459675	24485939	24512196
381	24538447	24564690	24590926	24617156	24644379	24669594	24695803	24722005	24748200	24774388
382	24800570	24826745	24852912	24879073	24905227	24931374	24957515	24983649	25009775	25035895
383	25062008	25088114	25114213	25140307	25166392	25192471	25218544	25244609	25270668	25296719
384	25322765	25348803	25374834	25400859	25426877	25452888	25478893	25504890	25530881	25556865
385	25582843	25608813	25634777	25660734	25686685	25712628	25738565	25764495	25790419	25816336
386	25842246	25868149	25894046	25919936	25945819	25971696	25997565	26023429	26049286	26075135
387	26100979	26126815	26152645	26178469	26204284	26230094	26255897	26281694	26307483	26333266
388	26359043	26384813	26400576	26436333	26462083	26487726	26513563	26549293	26565017	26590733
389	26616444	26642147	26667844	26693535	26719218	26744896	26770566	26796230	26821888	26847539
390	26873183	26898821	26924452	26950076	26975695	27001306	27026911	27052510	27078001	27103686
391	27129265	27154837	27180404	27205962	27231515	27257060	27282600	27308133	27333660	27359180
392	27384693	27410200	27435701	27461195	27486682	27511163	27537638	27563005	27588567	27614022
393	27639471	27664913	27690348	27715777	27741200	27766616	27792026	27817429	27842826	27868216
394	27893600	27918977	27944349	27969713	27995072	28010423	28045769	28071108	28096440	28121766
395	28147086	28172399	28197706	28223006	28248300	28273588	28298869	28324144	28349412	28374675
396	28399930	28425180	28450422	28475655	28500889	28526113	28551331	28576542	28601747	28626945
397	28652137	28677323	28702502	28727676	28752842	28778001	28803157	28828305	28853446	28878581
398	28903710	28928832	28953948	28979058	29004162	29029260	29054350	29079434	29104513	29129585
399	29154651	29179710	29204764	29229810	29254851	29279786	29304914	29329935	29354952	29379961

TABLE of Hyperbolic Logarithms.

·	0	1	2	3	4	5	6	7	8	9
400	8.29404964	29429961	29454952	29479936	29504914	29529886	29554852	29579811	29604764	29629711
401	29654652	29679586	29704515	29729437	29754353	29779263	29804166	29829063	29853955	29878839
402	29903718	29928591	29953457	29978317	30003171	30028019	30052861	30077696	30102525	30127348
403	30152166	30176976	30201781	30226579	30251372	30276158	30300938	30325712	30350480	30375241
404	30399997	30424746	30449490	30474227	30498958	30523683	30548402	30578114	30598721	30622522
405	30647216	30671904	30696587	30721262	30745933	30770597	30795255	30819906	30844552	30869192
406	30893825	30918453	30943074	30967690	30992299	31016902	31041499	31066090	31090676	31115255
407	31139828	31164395	31188956	31213511	31238060	31262603	31287139	31311670	31336195	31360714
408	31385227	31409733	31434234	31458729	31483218	31507701	31532178	31556648	31581113	31605572
409	31630025	31654472	31678913	31703348	31727777	31752200	31776617	31801028	31825433	31849832
410	31874225	31898613	31922994	31947369	31971739	31996102	32020470	32044811	32069157	32093496
411	32117831	32142159	32166481	32190797	32215107	32239411	32263710	32288002	32312289	32336569
412	32360844	32385113	32409368	32433633	32457885	32482130	32506369	32530603	32554831	32579053
413	32603269	32627479	32651683	32675881	32700074	32724261	32748442	32772617	32796786	32820949
414	32845107	32869258	32893404	32917544	32941678	32965807	32989929	33014046	33038157	33062262
415	33086361	33110454	33134543	33158624	33188700	33206770	33220835	33254894	33278947	33302994
416	33327035	33351071	33375101	33399125	33423143	33447156	33471162	33495163	33519158	33543148
417	33567131	33591109	33615082	33739048	33663009	33686964	33710912	33734856	33758794	33782726
418	33806652	33830573	33854488	33878397	33902301	33926198	33950090	33973977	33997857	34021732
419	34045601	34069464	34093322	34117174	34141021	34164862	34188697	34212526	34236350	34260168
420	34283980	34307787	34331588	34355383	34389173	34402967	34426736	34450508	34474275	34498036
421	34521793	34545543	34570287	34599026	34616759	34640487	34664209	34687925	34711636	34735341
422	34759041	34782734	34806432	34830105	34853783	34877454	34901120	34924780	34948434	34972084
423	34995727	35019365	35042997	35066624	35090245	35113861	35137470	35161075	35184673	35208277
424	35231855	35255437	35279013	35302585	35326150	35349710	35373264	35396813	35420356	35443894
425	35467426	35490953	35514474	35537990	35561500	35585004	35608503	35631997	35655485	35678967
426	35702444	35725915	35749381	35772842	35796297	35819746	35843190	35866628	35890061	35913489
427	35936911	35960327	35983738	36007144	36030544	36053938	36077327	36100710	36124089	36147462
428	36170829	36194191	36217547	36240898	36264243	36287583	36310918	36334247	36357570	36380888
429	36404201	36427508	36450810	36474107	36497398	36520683	36543964	36567238	36590508	36613772
430	36637030	36660283	36683531	36706773	36730010	36753242	36776468	36799689	36822903	36846114
431	36879318	36892518	36915711	36938900	36962083	36985260	37008433	37031600	37054761	37077917
432	37101068	37124214	37147354	37170489	37193618	37216742	37239861	37262974	37286082	37309185
433	37332282	37355374	37378461	37401542	37424618	37447689	37470754	37493814	37516869	37539919
434	37562962	37586002	37609035	37632063	37655086	37678104	37701116	37724123	37747125	37770121
435	37793112	37816098	37839079	37862054	37885024	37907989	37930948	37953903	37976852	37999795
436	38022734	38045666	38068595	38091517	38114435	38137347	38160254	38183155	38206052	38228943
437	38251829	38274709	38297585	38320455	38343320	38366180	38389034	38411884	38434728	38457567
438	38480400	38503229	38526052	38548870	38571683	38594491	38617293	38640090	38662882	38685669
439	38708451	38731227	38753998	38776764	38799525	38827281	38845032	38867777	38890517	38913252
440	38935981	38958707	38981426	39004140	39016850	39049554	39072253	39094947	39117635	39140319
441	39162997	39185670	39208338	39231001	39253659	39276311	39298959	39321601	39344238	39366871
442	39389498	39412119	39434736	39457348	39479954	39502556	39525152	39547743	39565329	39592910
443	39615486	39638057	39660623	39683184	39705739	39728290	39750835	39773375	39795910	39818440
444	39840966	39863486	39886000	39908510	39931015	39953515	39976009	39998499	40020984	40043463
446	40065938	40088407	40110871	40133331	40155785	40178234	40200678	40223117	40245551	40267981
445	40290405	40312824	40335238	40357646	40380050	40402449	40424843	40447232	40469616	40491995
447	40514369	40536738	40559102	40581460	40603814	40626163	40648507	40670846	40693180	40715509
448	40737833	40760151	40782465	40804774	40827079	40849377	40871672	40893961	40916245	40938524
449	40960798	40983067	41005332	41027591	41049845	40172095	41094339	41116579	41138813	41151043

TABLE of Hyperbolic Logarithms.

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450	8.41183268	41205487	41227702	41249912	41272117	41294317	41316512	41338702	41360888	41383068
451	41405243	41427414	41449579	41471740	41483896	41516047	41538193	41560334	41582469	41604601
452	41626727	41648849	41670965	41693077	41715184	41737286	41759383	41781474	41803562	41825644
453	41847722	41869794	41891862	41913925	41935983	41958036	41980085	42002128	42024167	42046200
454	42068229	42090253	42112272	42134287	42156296	42178301	42200300	42222295	42244286	42266271
455	42288251	42310227	42332198	42354164	42376125	42398081	42420033	42441979	42463921	42485858
456	42507790	42529718	42551640	42573558	42595471	42617379	42639282	42661181	42689075	42704964
457	42726848	42748728	42770603	42792472	42814337	42836198	42858053	42879904	42901750	42923591
458	42945428	42967259	42989086	43010908	43032726	43054539	43076347	43098149	43119948	43141741
459	43163530	43185314	43207894	43238868	43250638	43289795	43294164	43315920	43347171	43359407
460	43381158	43402895	43424627	43446354	43468077	43489795	43511508	43533217	43554920	43576619
461	43598314	43620003	43641688	43663368	43685044	43706715	43728381	43750042	43771699	43793351
462	43814998	43836641	43858279	43879912	43901541	43923165	43944784	43966399	43988009	44009614
463	44031215	44052811	44074402	44095989	44117571	44139148	44160720	44182288	44203852	44225410
464	44246965	44268514	44290059	44311599	44333134	44354665	44376191	44397713	44419230	44440742
465	44462250	44483753	44505251	44526745	44548234	44569719	44591209	44612674	44634145	44655611
466	44677073	44698530	44719982	44741430	44762873	44784311	44805745	44827175	44848599	44870020
467	44891435	44912846	44934252	44955654	44977051	44998444	45019832	45041216	45062595	45083969
468	45105339	45126704	45148065	45169421	45190773	45212119	45233462	45254800	45276133	45297462
469	45318786	45340106	45361421	45382732	45404038	45425339	45446636	45467929	45489217	45510500
470	45531779	45553053	45574323	45595588	45616849	45638105	45659357	45680604	45701847	45723085
471	45744318	45765548	45786773	45807993	45829208	45850420	45861626	45892828	45914026	45935219
472	45956408	45977592	45998772	46019947	46041118	46062284	46083446	46104603	46125756	46146904
473	46168048	46189188	46210323	46231453	46252579	46273700	46294818	46315930	46337038	46358142
474	46379242	46400336	46421427	46442513	46463594	46484671	46505744	46526812	46547876	46568935
475	46589990	46611040	46632087	46661128	46674165	46695197	46716226	46737250	46758269	46779284
476	46800295	46821311	46842303	46863300	46884292	46905182	46926266	46947246	46968221	46989192
477	47010158	47031121	47050878	47073032	47093981	47114825	47135866	47156801	47177733	47198660
478	47219583	47240501	47261415	47282324	47303230	47324130	47345027	47365919	47386807	47407690
479	47428569	47449444	47470314	47491180	47512042	47532899	47553752	47574600	47595445	47616284
480	47637120	47657951	47678778	47699600	47720418	47741232	47762042	47782847	47803648	47824444
481	47845236	47866024	47886808	47907587	47928362	47949132	47969899	47990661	48011418	48032172
482	48052921	48073665	48094406	48115142	48135874	48156601	48177325	48198044	48218758	48239469
483	48260175	48280876	48301574	48322267	48332956	48363641	48384321	48404997	48425669	48446337
484	48467000	48487659	48508314	48528964	48549611	48570252	48590890	48611524	48632153	48652778
485	48673398	48694015	48714627	48735235	48755839	48776438	48797033	48817624	48838211	48858793
486	48879372	48899946	48920516	48941081	48961642	48982200	49002752	49023301	49043845	49064386
487	49084922	49105453	49125981	49146504	49167023	49187538	49208049	49228556	49249058	49269556
488	49290050	49310540	49331025	49351506	49371984	49392456	49412925	49433390	49453850	49474306
489	49494758	49515206	49535650	49556089	49576524	49596956	49617382	49637805	49658224	49678638
490	49699048	49719455	49739856	49760254	49780648	49801037	49821422	49841804	49862181	49882553
491	49902922	49923287	49943647	49964003	49984355	50004703	50025047	50045387	50065722	50086054
492	50106381	50126704	50147023	50167338	50187649	50207955	50228258	50248556	50268851	50289141
493	50309427	50329709	50349986	50370260	50390530	50410795	50431057	50451314	50471567	50491816
494	50512061	50532302	50552539	50572771	50593000	50613224	50633445	50653661	50673873	50694082
495	50714286	50734486	50754681	50774873	50795061	50815245	50835424	50855600	50875771	50895939
496	50916102	50936261	50956416	50976578	50996715	51016858	51036997	51057132	51077262	51097389
497	51117512	51137631	51157745	51177856	51197962	51218065	51238163	51258258	51278348	51298434
498	51318516	51338595	51358670	51378740	51398806	51418868	51438926	51458981	51479031	51499077
499	51519119	51539157	51559191	51579221	51589247	51619269	51639287	51659301	51679311	51699317

Table of Hyperbolic Logarithms.

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500	8.51719319	51739317	51759312	51779301	51799287	51819269	51839247	51859221	51879191	51899157
501	51919119	51939077	51959032	51978982	51998928	52018870	52038808	52058742	52078672	52098599
502	52118521	52138440	52158354	52178264	52198171	52218073	52237972	52257866	52277157	52297644
503	52317526	52337405	52357280	52377151	52397018	52416880	52436740	52456595	52476446	52496293
504	52516136	52535975	52555811	52575642	52595470	52615293	52635113	52654929	52674740	52694548
505	52714352	52734152	52753948	52773741	52793529	52813313	52833094	52852870	52872643	52892411
506	52912176	52931937	52951694	52971447	52991196	53010942	53030683	53050421	53070154	53089884
507	53109610	53129332	53149050	53168764	53188474	53208180	53228283	53247581	53267276	53286967
508	53306654	53326337	53346016	53365692	53385363	53405031	53424694	53444354	53464010	53483663
509	53503311	53522955	53542596	53562233	53581866	53601495	53621120	53640741	53660358	53679972
510	53699582	53719188	53738790	53758388	53777983	53797573	53817160	53836743	53856322	53875897
511	53895468	53915036	53934600	53954160	53973715	53993268	54012816	54032361	54051902	54071439
512	54090972	54110501	54130027	54149548	54169066	54188580	54208091	54227597	54247100	54266599
513	54286094	54305585	54325073	54344556	54364037	54383512	54402985	54422453	54441918	54461379
514	54480836	54500289	54519739	54539185	54558627	54578065	54597499	54616930	54636357	54655780
515	54675199	54694615	54714027	54733435	54752839	54772240	54791636	54811029	54830419	54849804
516	54869186	54888564	54907938	54927309	54946675	54966038	54985397	55004753	55024105	55043453
517	55062797	55082137	55101474	55120807	55140136	55159462	55178784	55198102	55217416	55236727
518	55256034	55275337	55294626	55313932	55333224	55352512	55371797	55391077	55410355	55429628
519	55448898	55468164	55487426	55506684	55525939	55545190	55564438	55583682	55602922	55622158
520	55641391	55660619	55679845	55699066	55718284	55737498	55756709	55775915	55795118	55814318
521	55833514	55852706	55871894	55891078	55910259	55929437	55948610	55967780	55986947	56006109
522	56025268	56044423	56063574	56082723	56101867	56121008	56140145	56159278	56178409	56197533
523	56216656	56235774	56254889	56274001	56293108	56312212	56331313	56350409	56369503	56388592
524	56407678	56426760	56445838	56464913	56483985	56503052	56522116	56541176	56560233	56579286
525	56598336	56617381	56636425	56655462	56674497	56693528	56712556	56731580	56750601	56769617
526	56788631	56807640	56826646	56845649	56864647	56883642	56902634	56921622	56940606	56959587
527	56978564	56997538	57016508	57035474	57054437	57073396	57092351	57111303	57130251	57149196
528	57168138	57187075	57206009	57224940	57244867	57262790	57281710	57300626	57319538	57338447
529	57357353	57376254	57395153	57414047	57432938	57451826	57470711	57489590	57508467	57527340
530	57546210	57565076	57583939	57602798	57621653	57640505	57659353	57678198	57697040	57715877
531	57734711	57753542	57772369	57791193	57810013	57828829	57847642	57866051	57885257	57904059
532	57922858	57941654	57960445	57979233	57998018	58016799	58035577	58054351	58073121	58091888
533	58110652	58129412	58148168	58166921	58185671	58204416	58223159	58241898	58260633	58279365
534	58298073	58316818	58335539	58354257	58372972	58391682	58410389	58429093	58447794	58466491
535	58485184	58503874	58522560	58541243	58559922	58578598	58597271	58615940	58634605	58653267
536	58671925	58690580	58709232	58727880	58746524	58765166	58783803	58802437	58821068	58839695
537	58858319	58876939	58895556	58914169	58932779	58951385	58969988	58988588	59007184	59025776
538	59044365	59062951	59081533	59100112	59118687	59137259	59155827	59174392	59192954	59211512
539	59230066	59248618	59267165	59285710	59304250	59322788	59341322	59359852	59378379	59396903
540	59415423	59433940	59452453	59470963	59489470	59507973	59526473	59544969	59563462	59581951
541	59600437	59618920	59637399	59655875	59674347	59692816	59711282	59729744	59748202	59766658
542	59785109	59803558	59822003	59840445	59858883	59877318	51895749	59914177	59932602	59951023
543	59969441	59987856	60006267	60024675	60043079	60061480	60079878	60098272	60116663	60135050
544	60153434	60171815	60190192	60208566	60226936	60245304	60263667	60282028	60300385	60318738
545	60337089	60355436	60373779	60391119	60410456	60428790	60447120	60465447	60483770	60502090
546	60520407	60538720	60557030	60575337	60593640	60611940	60630237	60648530	60666820	60685106
547	60703390	60721669	60739946	60758219	60776489	60794755	60813019	60831278	60849535	60867788
548	60886038	60904284	60922528	60940768	60959004	60977237	60995467	61013694	61031917	61050137
549	61068353	61086567	61104777	61122783	61141187	61155387	61177583	61195777	61213967	61232154

TABLE of Hyperbolic Logarithms.

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550	8.61250337	61268517	61286694	61304868	61323038	61341205	61359369	61377529	61395686	61413840
551	61431990	61450137	61468281	61486422	61504559	61522693	61540824	61558951	61577075	61595196
552	61613314	61631428	61649539	61667647	61685752	61703853	61721950	61740045	61758137	61776225
553	61794309	61812391	61830469	61848534	61866616	61884685	61902750	61920812	61938870	61956926
554	61974978	61993027	62011073	62029115	62047154	62065190	62083223	62101252	62119278	62137301
555	62155321	62173337	62191350	62209360	62227367	62245370	62263370	62281367	62299361	62317351
556	62335339	62353323	62371304	62389281	62407255	62425226	62443194	62461159	62479120	62497078
557	62515033	62532985	62550934	62568879	62586821	62604760	62622695	62640628	62658557	62676483
558	62694406	62712325	62730241	62748155	62766064	62783971	62801875	62819775	62837672	62855566
559	62873457	62891344	62909228	62927109	62944987	62962862	62980734	62998602	63016467	63034329
560	63052188	63070043	63087896	63105745	33123591	63141434	63159273	63177110	63194943	63212773
561	63230600	63248424	63266244	63284062	63301876	63319687	63337495	63355299	63373101	63390899
562	63408694	63426486	63444275	63462061	63479843	63497623	63515399	63533172	63550942	63568700
563	63586472	63604233	63621990	63639744	63657495	63675243	63692987	63710729	63728467	63746202
564	63763934	63781663	63799389	63817112	63834831	63852548	63870261	63887971	63905678	63923382
565	63941082	63958780	63976474	63994166	64011854	64029539	64047221	64064900	64082575	64100248
566	64117917	64135583	64153247	64170907	64188564	64206217	64213869	64241516	64259160	64276801
567	64294440	64312075	64329707	64347336	64364962	64382584	64400204	64417821	64435434	64453044
568	64470651	64488255	64505856	64523454	64541049	64558641	64576229	64593815	64611397	64628976
569	64646553	64664126	64681696	64699263	64716827	64734388	64751945	64769500	64787052	64804600
570	64822145	64839688	64857227	64874763	64892296	64909826	64927353	64944877	64962398	64979916
571	64997430	65014942	65032450	65049956	65067458	65084958	65102454	65119947	65137437	65154924
572	65172408	65189889	65207367	65224842	65242314	65259783	65277249	65294721	65312171	65329627
573	65347081	65364531	65381979	65399423	65416865	65434303	65451738	65469170	65486600	65504026
574	65521449	65538869	65556286	65573700	65591111	65608519	65625924	65643326	65660725	65678121
575	65695513	65712903	65730290	65747674	65765074	65782432	65799807	65817179	65834547	65851913
576	65869275	65886635	65903992	65921345	65938696	65956043	65973388	65990729	66008068	66025403
577	66042736	66060065	66077392	66094715	66112036	66129354	66146668	66163980	66181288	66198594
578	66215896	66233196	66250492	66267786	66285076	66302364	66319648	66336930	66349209	66371484
579	66388757	66406027	66423293	66440557	66457818	66475076	66492330	66509582	66526831	66544077
580	66561320	66578560	66595797	66613030	66630261	66647489	66664715	66681937	66699156	66716372
581	66733585	66750795	66768003	66785207	66802408	66819607	66836802	66853994	66871184	66888370
582	66905554	66922735	66939912	66957087	66974259	66991428	67008594	67025757	67042917	67060074
583	67077228	67094379	67111527	67128673	67145815	67162955	67180091	67197225	67214355	67231483
584	67248608	67265729	67282848	67299964	67317077	67334187	67351295	67368399	67385500	67402599
585	67419694	67436787	67453876	67470933	67488047	67505128	67522206	67539281	67556353	67573422
586	67590488	67607552	67624612	67641670	67658724	67675776	67692825	67709871	67726914	67743954
587	67760991	67778026	67795057	67812086	67829111	67846134	67863154	67880171	67897185	67914196
588	67931204	67948209	67965212	67982212	67999208	68016202	68033193	68050181	68067166	68084148
589	68101128	68118104	68135078	68152048	68169016	68185981	68202943	68219903	68236859	68253812
590	68270763	68287711	68304656	68321598	68338537	68355473	68372406	68389337	68406264	68423189
591	68440111	68457031	68473946	68490860	68507770	68524678	68541582	68558481	68575383	68592280
592	68609173	68626063	68642951	68659836	68676718	68693597	68710473	68727346	68744217	68761084
593	68777949	68794811	68811670	68828527	68845380	68862231	68879079	68895923	68912766	68929605
594	68946441	68963275	68980106	68996934	69013759	69030581	69047400	69064217	69081031	69097842
595	69114650	69131455	69148258	69165057	69181854	69198648	69215439	69232228	69249013	69265796
596	69282576	69299353	69316127	69332899	69349668	69366433	69383197	69399957	69416714	69433469
597	69450221	69466970	69483716	69500459	69517200	69533938	69550673	69567405	69584134	69600861
598	69617585	69634306	69651024	69667739	69684452	69701162	69717869	69734573	69751275	69767973
599	69784669	69801362	69818053	69834740	69851425	69868107	69884786	69901462	69918136	69934807

TABLE of Hyperbolic Logarithms.

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600	8.69951475	69968140	69984803	70001462	70018119	70034773	70051425	70068073	70084719	70101462
601	70118003	70134640	70151275	70167907	70184536	70201163	70217787	70234407	70251026	70267641
602	70284254	70300864	70317471	70334075	70350677	70367276	70383872	70400465	70417056	70433644
603	70450229	70466811	70483391	70499968	70516542	70533113	70549682	70566248	70582811	70599371
604	70615929	70632484	70649035	70665586	70682132	70698676	70715218	70731756	70748292	70764825
605	70781355	70797883	70814408	70830930	70847449	70863966	70880480	70896991	70913499	70930005
606	70946508	70963008	70979506	70996001	71012493	71028982	71045469	71061953	71078434	71094913
607	71111388	71127862	71144332	71160800	71177265	71193727	71209186	71226643	71243097	71259549
608	71275998	71292444	71308887	71325327	71341765	71358201	71374633	71391063	71407490	71423914
609	71440336	71456755	71473171	71489585	71505996	71522404	71538810	71555213	71571613	71588010
610	71604405	71620797	71637187	71653573	71669957	71686339	71702717	71719093	71735467	71751837
611	71778205	71784571	71800933	71817293	71833650	71850005	71866357	71882706	71899052	71915396
612	71931738	71948076	71964411	71980745	71997076	72013404	72029729	72046051	72062371	72078688
613	72095003	72111311	72127624	72143931	72160235	72176536	72192834	72209130	72225424	72241714
614	72258002	72274287	72290570	72306850	72323128	72339402	72355674	72371944	72388211	72404475
615	72420736	72436995	72453251	72469505	72485756	72502004	72518250	72534492	72550733	72566971
616	72583206	72599438	72615668	72631895	72648120	72664342	72680561	72696777	72712992	72729203
617	72745412	72761618	72777821	72794022	72810221	72826416	72842609	72858800	72874987	72891173
618	72907355	72923535	72939712	72955887	72972059	72988229	73004395	73020560	73036721	73052880
619	73069037	73085190	73101342	73117490	73133636	73149779	73165920	73182058	73198194	73214327
620	73230457	73246585	73262710	73278832	73294952	73311070	73327185	73343297	73359406	73375513
621	73391618	73407719	73423818	73439915	73456009	73472100	73488189	73504275	73520359	73536440
622	73552519	73568594	73584668	73600738	73616807	73632872	73648935	73664995	73681053	73697109
623	73713161	73729211	73745259	73761304	73777346	73793386	73809423	73825458	73841490	73857519
624	73873546	73889570	73905592	73921612	73937628	73953642	73969654	73985663	74001669	74017673
625	74033674	74049673	74065669	74081663	74097654	74113642	74129628	74145612	74161592	74177571
626	74193546	74209519	74225490	74241458	74257424	74273387	74289347	74305305	74321260	74337213
627	74353163	74369111	74385056	74400999	74416939	74432876	74448811	74464744	74480673	74496601
628	74512526	74528448	74544368	74560285	74576200	74592112	74608022	74623929	74639833	74655735
629	74671635	74687532	74703426	74719318	74735208	74751095	74766979	74782861	74798740	74814617
630	74830491	74846363	74862232	74878099	74893933	74909825	74925684	74941541	74957395	74973246
631	74989096	75004942	75020786	75036628	75052467	75068304	75084138	75099969	75115798	75131625
632	75147449	75163270	75179089	75194906	75210720	75226531	75242340	75258147	75273951	75289752
633	75305551	75321348	75337142	75352934	75368723	75384509	75400293	75416075	75431854	75447630
634	75463405	75479176	75494946	75510712	75526467	75542238	75557997	75573754	75589508	75605260
635	75621009	75636756	75652500	75668242	75683982	75699718	75715453	75731185	75746914	75762641
636	75778366	75794088	75809807	75825514	75841239	75856951	75872661	75888368	75904073	75919775
637	75935475	75951172	75966867	75982560	75998249	76013937	76029622	76045305	76060985	76076662
638	76092338	76108010	76123681	76139349	76155014	76170677	76186337	76201995	76217651	76233304
639	76248955	76264603	76280249	76295892	76311533	76337171	76442807	76358441	76374072	76389701
640	76405327	76420951	76436572	76452191	76467807	76483421	76499033	76514642	76530249	76545853
641	76561455	76577054	76592651	76608246	76623838	76639428	76655015	76670600	76686182	76701762
642	76717370	76732915	76748488	76764058	76779626	76795191	76810754	76826315	76841873	76857428
643	76872982	76888533	76904081	76919627	76935171	76950712	76966251	76981787	76997321	77012853
644	77028382	77043909	77059433	77074955	77090474	77105992	77121506	77137019	77152528	77168036
645	77183541	77199044	77214574	77230042	77245537	77261030	77276521	77292009	77307495	77322979
646	77338460	77353938	77369415	77384889	77400360	77415829	77431296	77446760	77462222	77477682
647	77493139	77508594	77524046	77539496	77554943	77570389	77585832	77601272	77616710	77632146
648	77647579	77663010	77678438	77693865	77709288	77724710	77740129	77755545	77770960	77786371
649	77801781	77817188	77832593	77847995	77863395	77878793	77894188	77909581	77924972	77940360

Table of Hyperbolic Logarithms.

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650	8.77955776	77971129	77986510	78001889	78017265	78032639	78048011	78063380	78078747	78094181
651	78109473	78124833	78140191	78155546	78170899	78186249	78201597	78216943	78232286	78247627
652	78262966	78278302	78293636	78308967	78324296	78339623	78354948	78370270	78385590	78400907
653	78416222	78431535	78446875	78462153	78477459	78492763	78508064	78523362	78538659	78553953
654	78569274	78584534	78599821	78615106	78630388	78645668	78660946	78676221	78691494	78706765
655	78722033	78737299	78752563	78767824	78783083	78798340	78813594	78828846	78844096	78859343
656	78874588	78889831	78905071	78920309	78935545	78950779	78966010	78981239	78996465	79011689
657	79026911	79042131	79057348	79072563	79087775	79102986	79118194	79133399	79148603	79163804
658	79179002	79194199	79209393	79224585	79239774	79254961	79270146	79295329	79300509	79315687
659	79330863	79346036	79361207	79376376	79391542	79406707	79421868	79437028	79452185	79467340
660	79482493	79497643	79512791	79527937	79543081	79558222	79573361	79588497	79603632	79618762
661	79633893	79649021	79664146	79679269	79694399	79709508	79724624	79739737	79754849	79769958
662	79785065	79800170	79815272	79830372	79845470	79860565	79875658	79890749	79905838	79920924
663	79936008	79951090	79966170	79981247	79996322	80011395	80026465	80041533	80056599	80071663
664	80086724	80101783	80116840	80131895	80146947	80161997	80177045	80192090	80207134	80222175
665	80237213	80252250	80267284	80282316	80297346	80312373	80327398	80342421	80357441	80372460
666	80387476	80402490	80417502	80432511	80447518	80462523	80477526	80492526	80507524	80522520
667	80537514	80552505	80567494	80582481	80597466	80612448	80627429	80642406	80657382	80672355
668	80687327	80702296	80717262	80732227	80747189	80762149	80777107	80792062	80807016	80821967
669	80836915	80851862	80866806	80881748	80896688	89911626	80926561	80941494	80956425	80971354
670	80986281	81001205	81016128	81031047	81045964	81060880	81075793	81090704	81105612	81120519
671	81135423	81150325	81165225	81180122	81195018	81209911	81224802	81239691	81254577	81269461
672	81284343	81299223	81314100	81328976	81343850	81358720	81373589	81388456	81403320	81418182
673	81433042	81447900	81462756	81477609	81492460	81507309	81522156	81537000	81551842	81566682
674	81581520	81596356	81611190	81626021	81640850	81655677	81670502	81685324	81700144	81714962
675	81729778	81744592	81759404	81774213	81789020	81803825	81818628	81833428	81848327	81863023
676	81877817	81892609	81907398	81922186	81936971	81951754	81966534	81981314	81996090	82010864
677	82025637	82040407	82055174	82069940	82084703	82099465	82114224	82128981	82143735	82158488
678	82173238	82187986	82202732	82217476	82232218	82246957	82261695	82276430	82291163	82305893
679	82320622	82335349	82350073	82364795	82379515	82394233	82408948	82423662	82438373	82453082
680	82468789	82482494	82497197	82511897	82526595	82541292	82555986	82570677	82585367	82600055
681	82614740	82629423	82644104	82658783	82673460	82688134	82702807	82727477	82732145	80746811
682	82761475	82776137	82790796	82805454	82820109	82834762	82849412	82864062	82878708	82893353
683	82907995	82922636	82937274	82951909	82966543	82981175	82995804	83010432	83025057	83039680
684	83054301	83068920	83083536	83098151	83112764	83127374	83141982	83156588	83171192	83185794
685	83200393	83214991	83229586	83244179	83258770	83273359	83287946	83302531	83317113	83331694
686	83346272	83360848	83375422	83389994	83404564	83419132	83433697	83448261	83462822	83477381
687	83491939	83506494	83521046	83535597	83550146	83564692	83579237	83593779	83608319	83622857
688	83637393	83651927	83666459	83680988	83695516	83710041	83724564	83739086	83753605	83768122
689	83782636	83797149	83811660	83826168	83840675	83855179	83869681	83884181	83898679	83913175
690	83927669	83942161	83956650	83971138	83985623	84000107	84014588	84029067	84043544	84058019
691	84072492	84086962	84101431	84115898	84130362	84144824	84159285	84173743	84188199	84202653
692	84217105	84231555	84246002	84260448	84274892	84289333	84303772	84318210	84332645	84347078
693	84361509	84375938	84390365	84404790	84419213	84433633	84448052	84462468	84476883	84491295
694	84505705	84520114	84534520	84548924	84563326	84577725	84592123	84606519	84620913	84635304
695	84649694	84664081	84678467	84692850	84707231	84721610	84735988	84750363	84764736	84779106
696	84793475	84807842	84822207	84836569	84850930	84865289	84879645	84894000	84908352	84922702
697	84937050	84951397	84965741	84980083	84994423	85008761	85023097	85037430	85051762	85066092
698	85080420	85094745	85109069	85123390	85137710	85152027	85166343	85180656	85194967	85209276
699	85223584	85237889	85252192	85266493	85280791	85295089	85309384	85323676	85337967	85352256

Table of Hyperbolic Logarithms.

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701	85509298	85523562	85537825	85552085	85566343	85580599	85594853	85609106	85623356	85637604
702	85651850	85666094	85680336	85694576	85708814	85723049	85737283	85751515	85765745	85779973
703	85794199	85808422	85822644	85836864	85851081	85865297	85879511	85893722	85907932	85922139
704	85936345	85950548	85964750	85978949	85993147	86007342	86021536	86035727	86049917	86064104
705	86078290	86092473	86106654	86120834	86135011	86149186	86163360	86177531	86191700	86205868
706	86220033	86234196	86248358	86262517	86276674	86290830	86304983	86319134	86333283	86347431
707	86361576	86375719	86389860	86404000	86418137	86432272	86446406	86460537	86474666	86488793
708	86502919	86517042	86531163	86545283	86559400	86573515	86587628	86601740	86615849	86629957
709	86644072	86658165	86672267	86686366	86700464	86714559	86728652	86742744	86756833	86770921
710	86785006	86799090	86813171	86827251	86841329	86855404	86869478	86883549	86897619	86911687
711	86925752	86939816	86953878	86967938	86981995	86996051	87010105	87024157	87038207	87052255
712	87066300	87080344	87094386	87108426	87122464	87136500	87150535	87164567	87178597	87192625
713	87206651	87220676	87234698	87248718	87262737	87276753	87290767	87304780	87318790	87332799
714	87346806	87360810	87374813	87388814	87402812	87416809	87430800	87444797	87458788	87472777
715	87486764	87500749	87514732	87528713	87542692	87556669	87570645	87584618	87598589	87612559
716	87626526	87640492	87654455	87668417	87682376	87696334	87710290	87724244	87738196	87752145
717	87766093	87780039	87793984	87807886	87821866	87885804	87849740	87863675	87877607	87891538
718	87905466	87919393	87933318	87947240	87961161	81975080	87988987	88002912	88016825	88030736
719	88044645	88058552	88072458	88086361	88100263	88114168	88128060	88141955	88155849	88169741
720	88183631	88197518	88211404	88225289	88239171	88253051	88266929	88280805	88294680	88398552
721	88322423	88336292	88350158	88364023	88377886	88391747	88405606	88419463	88433319	88447172
722	88461023	88474873	88488720	88502566	88516410	88530251	88544091	88557929	88571765	88585599
723	88599432	88613262	88627090	88640917	88654741	88668564	88682385	88696203	88710020	88723835
724	88737649	88751460	88765269	88779076	88792882	88806686	88820487	88834287	88848085	88861881
725	88875675	88889467	88903257	88917046	88930832	88944617	88958399	88972180	88985959	88999736
726	89013511	89027284	89041055	89054829	89068592	89082358	89096121	89109883	89123643	89137401
727	89151157	89164911	89178664	89192414	89206163	89219909	89233654	89247397	89261138	89274877
728	89288614	89302349	89316083	89329814	89343544	89357272	89370998	89384722	89398444	89412164
729	89425883	89439599	89453314	89467026	89480737	89494456	89508153	89521858	89535561	89549263
730	89562963	89576660	89590356	89604050	89617742	89631432	89645120	89658807	89672492	89686174
731	89699855	89713534	89727211	89740887	89754560	89768231	89781901	89795569	89809234	89822899
732	89836561	89850221	89863879	89877536	89891191	89904843	89918494	89932143	89945791	89959436
733	89973080	89986721	90000361	90013999	90027635	90041269	90054901	90068532	90082161	90095787
734	90109412	90123035	90136656	90150276	90163893	90177509	90191123	90204735	90218345	90231953
735	90245559	90259164	90272766	90286367	90299966	90313563	90327159	90340752	90354344	90367933
736	90381521	90395107	90408691	90422274	90435854	90449433	90463010	90476585	90490158	90503729
737	90517299	90530866	90544432	90557996	90571558	90585118	90598677	90612233	90625788	90639341
738	90652892	90666441	90679988	90693534	90707078	90720620	90734160	90747698	90761234	90774769
739	90788301	90801832	90815361	90828889	90842414	90855938	90869459	90882979	90896497	90910014
740	90923528	90937041	90950551	90964060	90977567	90991073	91004576	91018078	91031578	91045076
741	91058572	91072066	91085559	91099049	91112538	91126026	91139511	91152994	91166476	91179956
742	91193434	91206910	91220384	91233857	91247328	91260796	91274263	91287729	91301192	91314654
743	91328114	91341572	91355028	91368482	91381935	91395386	91408835	91422282	91435727	91449171
744	91462613	91476053	91489491	91502927	91516362	91529795	91543225	91556655	91570082	91583507
745	91596931	91610353	91623773	91637193	91650607	91664023	91677436	91690847	91704256	91717664
746	91731069	91744473	91757875	91771276	91784674	91798071	91811466	91824859	91838251	91851640
747	91865028	91878414	91891798	91905180	91918561	91931940	91945317	91958692	91972066	91985437
748	91998807	92012175	92025542	92038906	92052269	92065630	92078989	92092346	92105702	92119056
749	92132408	92145758	92159106	92172453	92185798	92199141	92212482	92225822	92239160	92252496

TABLE of Hyperbolic Logarithms.

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750	8.92265830	92279162	92292493	92305822	92319149	92332474	92345798	92359120	92372440	92385758
751	92399075	92412389	92425702	92439013	92452323	92465630	92478936	92492240	92505542	92518843
752	92532142	92545439	92558734	92572027	92585319	92598609	92611897	92625184	92638468	92651751
753	92665032	92678311	92691589	92704865	92718139	92731411	92744682	92757950	92771217	92784483
754	92797746	92811008	92824268	92837526	92850782	92864037	92877290	92890541	92903791	92917038
755	92920284	92943528	92956771	92970011	92983250	92996488	93009723	93022957	93036188	93049419
756	93062647	93075874	93089098	93102322	93115543	93128763	93141981	93155197	93168411	93181624
757	93194835	93208044	93221251	93234457	93247661	93260863	93274064	93287262	93300459	93313654
758	93326848	93340040	93353230	93366418	93379604	93392789	93405972	93419154	93432333	93445511
759	93524542	93471861	93485034	93498205	93511374	93656121	93537707	93550871	93564033	93577194
760	93590353	93603510	93616665	93629819	93642970	93656121	93669269	93682415	93695560	93708704
761	93721845	93734985	93748123	93761259	93774394	93787527	93800658	93813787	93826915	93840041
762	93853165	93866287	93879408	93892527	93905645	93918760	93931874	93944986	93958097	93971205
763	93984312	93997418	94010521	94023623	94036723	94049822	94062919	94076014	94089107	94102198
764	94115288	94128376	94141463	94154548	94167631	94180712	94193791	94206869	94219946	94233020
765	94246093	94259164	94272233	94285301	94298367	94311431	94324493	94337554	94350613	94363671
766	94376726	94389780	94402838	94415883	94428932	94441979	94455025	94468068	94481110	94494151
767	94507190	94520226	94533262	94546295	94559327	94572357	94585386	94598413	94611438	94624461
768	94637483	94650503	94663521	94676538	94689552	94702566	94715577	94728587	94741595	94754602
769	94767606	94780609	94793611	94802610	94819608	94832605	94845599	94858592	94871583	94884573
770	94897561	94910547	94923531	94936514	94949495	94962475	94975453	94988429	95001403	95014376
771	95027347	95040316	95053284	95066250	95079214	95092177	95105137	95118097	95131054	95144010
772	95156964	95169917	95182868	95195817	95208764	95221710	95234654	95247597	95260538	95273477
773	95286414	95299350	95312284	95325216	95338147	95351076	95364004	95376929	95389854	95402776
774	95415697	95428616	95441533	95454949	95467363	95480275	95493186	95506095	95519002	95531908
775	95544812	95557715	95570615	95583514	95596411	95609308	95622202	95635094	95647985	95660874
776	95673761	95686647	95699531	95712414	95725294	95738174	95751051	95763927	95776801	95789674
777	95802544	95815414	95828281	95841147	95854011	95866874	95879735	95892594	95905452	95918307
778	95931162	95944014	95956865	95969715	95982562	95995408	96008253	96021096	96033937	96046776
779	96059614	96072450	96085285	96098117	96110949	96123778	96136606	96149432	96162257	96175080
780	96187901	96200721	96213539	96226355	96239170	96251983	96264795	96277605	96290413	96303219
781	96316024	96328328	96341629	96354429	96367228	96380024	96392819	96405613	96418405	96431195
782	96443983	96456770	96469556	96482339	96495121	96507901	96520680	96533457	96546233	96559007
783	96571779	96584550	96597318	96610086	96622851	96635616	96648378	96661139	96673898	96686655
784	96699411	96712166	96724918	96737669	96750419	96763167	96775913	96788657	96801400	96814141
785	96826881	96839619	96852356	96765090	96877824	96890555	96903285	96916013	96928740	96941465
786	96954189	96966910	96979631	96992349	97005066	97017782	97030495	97043207	97055918	97068627
787	97081334	97094040	97106744	97119446	97132147	97144846	97157544	97170240	97182934	97195627
788	97208318	97221003	97233696	97246382	97259067	97271750	97284431	97297111	97309790	97322466
789	97335141	97347815	97360487	97373157	97385826	97398493	97411158	97423822	97436484	97449145
790	97461804	97474461	97487117	97499771	97512424	97525075	97537724	97550372	97563018	97575663
791	97588306	97600948	97613587	97626226	97638862	97651497	97664131	97676763	97689393	97702021
792	97714649	97727274	97739898	97752520	97765141	97777760	97790377	97802993	97815608	97828220
793	97840832	97853441	97866049	97878655	97891260	97903863	97916465	97929065	97941663	97954260
794	97966855	97979449	97992041	98004631	98017221	98029808	98042394	98054978	98067560	98080141
795	98092721	98105299	98117875	98130450	98143023	98155594	98168164	98180732	98193299	98205864
796	98218428	98230990	98243550	98256109	98268667	98281222	98293776	98306329	98318880	98331429
797	98343977	98356523	98369068	98381611	98394153	98406693	98419231	98431768	98444303	98456837
798	98469369	98481900	98494429	98506956	98519482	98532006	98544529	98557050	98569569	98582087
799	98594604	98607119	98619632	98632144	98644654	98657162	98669770	98682175	98694679	98707181

TABLE of Hyperbolic Logarithms.

	0	1	2	3	4	5	6	7	8	9
800	8.98719682	98732181	98744679	98757175	98769670	98782163	98794654	98807144	98819632	98832119
801	98844604	98857088	98869570	98882050	98894529	98907007	98919482	98931957	98944429	98956901
802	98969370	98981838	98994305	99009770	99019233	99031695	99044155	99056614	99069071	99081527
803	99093981	99106433	99118884	99131334	99143782	99156228	99168673	99181116	99193557	99205998
804	99218436	99230873	99243309	99255743	99268175	99280606	99293035	99305463	99317889	99330314
805	99342737	99355159	99367579	99379997	99392414	99404830	99417243	99429656	99442067	99454476
806	99466884	99479290	99491694	99504097	99516499	99528899	99541298	99553695	99566090	99578484
807	99590876	99603267	99615656	99628044	99640430	99652815	99665198	99677580	99689960	99802338
808	99714715	99727091	99739465	99751837	99764208	99776577	99788945	99801311	99813676	99826039
809	99838401	99850761	99863120	99875477	99887833	99900187	99912539	99924890	99937239	99949588
810	99961934	99974279	99986622	99998964	00011305	00023643	00035981	00048317	00060651	00072984
811	9.00085315	00097644	00109973	00122299	00134624	00146948	00159270	00171591	00183910	00196227
812	00208543	00220858	00233170	00245482	00257792	00270101	00282408	00294713	00307017	00319319
813	00331620	00343920	00356218	00368514	00380809	00393102	00405394	00417684	00429973	00442260
814	00454546	00466830	00479113	00491394	00503674	00515952	00528229	00540504	00552778	00565050
815	00577321	00589590	00601858	00614124	00626388	00638652	00650913	00663173	00675431	00687689
816	00699945	00712199	00724452	00736703	00748952	00761201	00773447	00785692	00797936	00810178
817	00822419	00834658	00846896	00859132	00871366	00883600	00895831	00908061	00920290	00932517
818	00944773	00956967	00969190	00981411	00993631	01005849	01018066	01030281	01042495	01054707
819	01066918	01079127	01091335	01103541	01115746	01127949	01140151	01152351	01164551	01176748
820	01188943	01201138	01213331	01225522	01237712	01249900	01262087	01274273	01286457	01298639
821	01310820	01323000	01335178	01347354	01359530	01371703	01383875	01396046	01408215	01420383
822	01432549	01444714	01456877	01469039	01481199	01493358	01505515	01517671	01529825	01541978
823	01554129	01566279	01578428	01590575	01602720	01614864	01627007	01639148	01651288	01663426
824	01675562	01687698	01699831	01711963	01724094	01736224	01748351	01760478	01772603	01784726
825	01796848	01808968	01821086	01833205	01845321	01857436	01869549	01881660	01893771	01905879
826	01917987	01930092	01942197	01954300	01966401	01978501	01990600	02002697	02014792	02026886
827	02038979	02051070	02063160	02075248	02087335	02099420	02111504	02123586	02135667	02147747
828	02159825	02171901	02183976	02196050	02208122	02220193	02232262	02244330	02256396	02268461
829	02280525	02292587	02304647	02316706	02328764	02340820	02352875	02364928	02376980	02389030
830	02401079	02413127	02425173	02437217	02449261	02461302	02473342	02485381	02497418	02509454
831	02521489	02533522	02545553	02557583	02569611	02581639	02593665	02605689	02617712	02629733
832	02641753	02653772	02665789	02677805	02689819	02701832	02713843	02725853	02737861	02749868
833	02761874	02773878	02785880	02797881	02809881	02821880	02833876	02845872	02857866	02869858
834	02881850	02893839	02905828	02917814	02929800	02941784	02953766	02965747	02977727	02989705
835	03001682	03013657	03025631	03037603	03049575	03061544	03073512	03085479	03097444	03109408
836	03121371	03133339	03145291	03157249	03169206	03181161	03193115	03205068	03217019	03228968
837	03240916	03252863	03264808	03276752	03288695	03300636	03312575	03324513	03336450	03348386
838	03360319	03372252	03384183	03396112	03408041	03419967	03431893	03443817	03455739	03467660
839	03479580	03491498	03503415	03515330	03527244	03539157	03551068	03562978	03574886	03586793
840	03598699	03610603	03622505	03634406	03646306	03658205	03670102	03681997	03693891	03705784
841	03717675	03729565	03741454	03753341	03765226	03777111	03788994	03800875	03812755	03824634
842	03836511	03848386	03860261	03872134	03884005	03895876	03913744	03919612	03931478	03943342
843	03955205	03967067	03978927	03990776	04002643	04014500	04026354	04038207	04050059	04061910
844	04073759	04085616	04097453	04109297	04121141	04132983	04144824	04156663	04168501	04180337
845	04192172	04204006	04215838	04227669	04239498	04251326	04263153	04274978	04286802	04298624
846	04310445	04322265	04334083	04345900	04357715	04369530	04381342	04393153	04404963	04416779
847	04428579	04440384	04452189	04463992	04475793	04487593	04499392	04511189	04522985	04534780
848	04546573	04558365	04570155	04581944	04593732	04605518	04617303	04629086	04640868	04652649
849	04664428	04676206	04687982	04699757	04711531	04723303	04735074	04746844	04758612	04770379

TABLE of Hyperbolic Logarithms.

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850	9.04782144	04793908	04805671	04817432	04829192	04840941	04852708	04864463	04876218	04887971
851	04899722	04911472	04923221	04934969	04946715	04958459	04970203	04981945	04993685	05005424
852	05017162	05028898	05040633	05052367	05064099	05075830	05087560	05099288	05111015	05122740
853	05134464	05146187	05157908	05169628	05181346	05193064	05204779	05216494	05228207	05239918
854	05251629	05263338	05275045	05286751	05298456	05310160	05321862	05333562	05345262	05356960
855	05368656	05380351	05392045	05403738	05415429	05427119	05438807	05450494	05462180	05473864
856	05485547	05497229	05508909	05520588	05532265	05543941	05555616	05567289	05578961	05590632
857	05602301	05613969	05625636	05637301	05648968	05660627	05672288	05683948	05695607	05707264
858	05718919	05730574	05742227	05753878	05765528	05777177	05788825	05800471	05812116	05823759
859	05835402	05847042	05858682	05870320	05881956	05893592	05905226	05916858	05928490	05940120
860	05951748	05963375	05975007	05986626	05998249	06009871	06021491	06033110	06044728	06056345
861	06067960	06079573	06091186	06102797	06114407	06126015	06137622	06149228	06160832	06172435
862	06184036	06195637	06207236	06218833	06230429	06242024	06253618	06265210	06276801	06288390
863	06299979	06311565	06323151	06334735	06346318	06357899	06369579	06381058	06392635	06404211
864	06415886	06427360	06438931	06450502	06462072	06473640	06485207	06496772	06508336	06519899
865	06531460	06543020	06554579	06566136	06577692	06589247	06600800	06612352	06623903	06635452
866	06647000	06658547	06670092	06681636	06693179	06704720	06716260	06727799	06739336	06750872
867	06762407	06773940	06785472	06797003	06808532	06820061	06831587	06843113	06854637	06866159
868	06877681	06889201	06900720	06912237	06923753	06935268	06946781	06958293	06969804	06981314
869	06992822	07004329	07015834	07027338	07038841	07050343	07061843	07073342	07084839	07096336
870	07107831	07119324	07130816	07142307	07153797	07165285	07176772	07188258	07199742	07211225
871	07222707	07234187	07245666	07257144	07268621	07280096	07291570	07303042	07314513	07325983
872	07337452	07348919	07360385	07371849	07383313	07394775	07406235	07417695	07429153	07440610
873	07452065	07463519	07474972	07486423	07497873	07509322	07520770	07532216	07543661	07555105
874	07566547	07577988	07589428	07600866	07612303	07623739	07635173	07646606	07658038	07669469
875	07680898	07692326	07703753	07715178	07726602	07738025	07749446	07760866	07772285	07783712
876	07795118	07806533	07817947	07829359	07840770	07852180	07863588	07874995	07886401	07897805
877	07909209	07920610	07932011	07943410	07954808	07966205	07977600	07988994	08000387	08011778
878	08023169	08034558	08045945	08057331	08068716	08080100	08091482	08102864	08114243	08125622
879	08136999	08148375	08159750	08171123	08182495	08193866	08205235	08216603	08227970	08239336
880	08250700	08262063	08273425	08284785	08296144	08307502	08318859	08330214	08341568	08352921
881	08364272	08375622	08386971	08398318	08409665	08421010	08432353	08443696	08455037	08466376
882	08477715	08489052	08500388	08511723	08523056	08534388	08545719	08557049	08568377	08579700
883	08591029	08602354	08613677	08624999	08636319	08647639	08658957	08670273	08681589	08692903
884	08704216	08715527	08726837	08738146	08749454	08760761	08772066	08783370	08794672	08805974
885	08817274	08828573	08839870	08851166	08862461	08873755	08885047	08896339	08907628	08918917
886	08930204	08941490	08952775	08964059	08975341	08986622	08997902	09009180	09020457	09031733
887	09043008	09054281	09065553	09076824	09088093	09099361	09110628	09121894	09133159	09144422
888	09155684	09166944	09178204	09189462	09200719	09211974	09223228	09234481	09245733	09256984
889	09268233	09279481	09290728	09301973	09313217	09324460	09335702	09346942	09358181	09369419
890	09370656	09391891	09403125	09414358	09425589	09436820	09448049	09459276	09470503	09481728
891	09492952	09504175	09515396	09526616	19537835	09549053	09560270	09571485	09582699	09593911
892	09605123	09616333	09627542	09638749	09649956	09661161	09672365	09683567	09694769	09705969
893	09717167	09728365	09739561	09750756	09761950	09773143	09784334	09795524	09806713	09817901
894	09829087	09840272	09851456	09862638	09873820	09885000	09896178	09907356	09918532	09929707
895	09930881	09952054	09963225	09974395	09985564	09996732	10007898	10019063	10030227	10041389
896	10052551	10063711	10074870	10086027	10097184	10108339	10119493	10130645	10141797	10152947
897	10164096	10175243	10186390	10197535	10208679	10219821	10230963	10242103	10253242	10264380
898	10275516	10286651	10297785	10308918	10320050	10331180	10342309	10353437	10364563	10375689
899	10386813	10397926	10409057	10420178	10431297	10442415	10453531	10464647	10475761	10486874

TABLE of Hyperbolic Logarithms.

	0	1	2	3	4	5	6	7	8	9
900	9.10497986	10509096	10520205	10531313	10542420	10553526	10564630	10575733	10586835	10597936
901	10609035	10620133	10631230	10642326	10653422	10664514	10675606	10686696	10697786	10708874
902	10719961	10731047	10742132	10753215	10764297	10775378	10786459	10797537	10808614	10819690
903	10830765	10841838	10852911	10863982	10875052	10886120	10897188	10908254	10919319	10930383
904	10941445	10952507	10963567	10974626	10985683	10996740	11007795	11018849	11029902	11040953
905	11052004	11063053	11074101	11085147	11096193	11107237	11118280	11129322	11140362	11151402
906	11162440	11173477	11184513	11195547	11206580	11217612	11228643	11239693	11250701	11261728
907	11272754	11283779	11294803	11305825	11316846	11327866	11338885	11349902	11360918	11371933
908	11382947	11393960	11404971	11415981	11426990	11437998	11449005	11460010	11471014	11482017
909	11493019	11504019	11515619	11526017	11537013	11548009	11559014	11569997	11580989	11591980
910	11602967	11613958	11624945	11635931	11646916	11657899	11668882	11679863	11690843	11701821
911	11712799	11723775	11734751	11745724	11756697	11767669	11778639	11789608	11800571	11811543
912	11822508	11833473	11844436	11855398	11866358	11877318	11888276	11899233	11910189	11921144
913	11932097	11943050	11954001	11964951	11975899	11986847	11997793	12008738	12019682	12030625
914	12041566	12052507	12063446	12074384	12085321	12096256	12107190	12118125	12129056	12139986
915	12150916	12161844	12172771	12183697	12194622	12205546	12216468	12227389	12238309	12249228
916	12260146	12271062	12281977	12292892	12303804	12314716	12325633	12336536	12347444	12358341
917	12369257	12380161	12391064	12401967	12412868	12423767	12434666	12445563	12456460	12467355
918	12478248	12489141	12500033	12510923	12521812	12532700	12543587	12554472	12565356	12576240
919	12587122	12598002	12608882	12619760	12630638	12641514	12652389	12663262	12674135	12685006
920	12695876	12706745	12717613	12728480	12739345	12750209	12761072	12771934	12782795	12793655
921	12804513	12815370	12826226	12837081	12847935	12858787	12869638	12870488	12891337	12902185
922	12913032	12923877	12934721	12945564	12956406	12967247	12978087	12988925	12999762	13010598
923	13021433	13032266	13043099	13053930	13064760	13075589	13086417	13097244	13108069	13118893
924	13129716	13140538	13151359	13162179	13172997	13183814	13194631	13205445	13216259	13227072
925	13237883	13248693	13259502	13270310	13281117	13291923	13302727	13313530	13324332	13335133
926	13345933	13356731	13367529	13378325	13389120	13399914	13410707	13421498	13432289	13443078
927	13453866	13464653	13475439	13486223	13497007	13507789	13518570	13529350	13540129	13550906
928	13561683	13572458	13583232	13594005	13604777	13615547	13626317	13637085	13647852	13658618
929	13669383	13680147	13690909	13701671	13712431	13723190	13733948	13744705	13755460	13766215
930	13776968	13787720	13798471	13809221	13819969	13830717	13841463	13852208	13862952	13873695
931	13884437	13895178	13905917	13916655	13927392	13938128	13948863	13959597	13970329	13981061
932	13991791	14002520	14013248	14023974	14034700	14045425	14056148	14066870	14077591	14088311
933	14099029	14109747	14120463	14131179	14141893	14152606	14056148	14174028	14184738	14195446
934	14206153	14216859	14227564	14238268	14248971	14259672	14270372	14281072	14291770	14302466
935	14313162	14323857	14334550	14345243	14355934	14366624	14377313	14388001	14398687	14409373
936	14420057	14430740	14441422	14452103	14462783	14473462	14484139	14494815	14505491	14516165
937	14526838	14537509	14548180	14558850	14569518	14580185	14590851	14601516	14612180	14622842
938	14633504	14644165	14654824	14665486	14676139	14686795	14697450	14708103	14718756	14729407
939	14740057	14750706	14761354	14772001	14782647	14793291	14803935	14814577	14825218	14835858
940	14846497	14857135	14867771	14878407	14889041	14899674	14910306	14920937	14931567	14942196
941	14952823	14963450	14974075	14984699	14995322	15005944	15016565	15027185	15037803	15048420
942	15059037	15069652	15080266	15090879	15101491	15112101	15122711	15133319	15143926	15154533
943	15165138	15175741	15186344	15196946	15207546	15218146	15228744	15239341	15249937	15260532
944	15271126	15281719	15292310	15302834	15313490	15324078	15334665	15345251	15355836	15366419
945	15377002	15387584	15398164	15408743	15419321	15429898	15440474	15451049	15461622	15472195
946	15482766	15493336	15503906	15514474	15525041	15535606	15546171	15556735	15567297	15577858
947	15588419	15598978	15609536	15620093	15630648	15641203	15651757	15662309	15672860	15683410
948	15693960	15704508	15715054	15725600	15736145	15746688	15757231	15767772	15778312	15788851
949	15799389	15809926	15820462	15830996	15841530	15852062	15862594	15873124	15883653	15894181

TABLE of Hyperbolic Logarithms.

	0	1	2	3	4	5	6	7	8	9
950	9.15904708	15915234	15925758	15936282	15946804	15957326	15967846	15978365	15988883	15999400
951	16009916	16020430	16030944	16041456	16151968	16062478	16072987	16083495	16094002	16104508
952	16115013	16125516	16136019	16146520	16157021	16167520	16178018	16188515	16199011	16209506
953	16220000	16230492	16240984	16251474	16261964	16272452	16282939	16293425	16303910	16314394
954	16324876	16335358	16345839	16356318	16366796	16377274	16387750	16398225	16408699	16419172
955	16429643	16440114	16450584	16461052	16471519	16481986	16492451	16502915	16513378	16523840
956	16534301	16544760	16555219	16565676	16576133	16586588	16597042	16607496	16617948	16628399
957	16638848	16649297	16659745	16670192	16680637	16691081	16701525	16711967	16722408	16732848
958	16743287	16753725	16764162	16774597	16785032	16795466	16805898	16816329	16826760	16837189
959	16847617	16858044	16868470	16878895	16889318	16899741	16910162	16920583	16931002	16941421
960	16951838	16962254	16972669	16983083	16993496	17003908	17014318	17024728	17035136	17045544
961	17055950	17066356	17076760	17087163	17097565	17107966	17118366	17128764	17139162	17149559
962	17159954	17170349	17180742	17191135	17201526	17211916	17222305	17232693	17243080	17253466
963	17263850	17274234	17284617	17294998	17305379	17315758	17326136	17336513	17346890	17357265
964	17367639	17378012	17388384	17398754	17409124	17419492	17429860	17440227	17450592	17460956
965	17471319	17481681	17492043	17502403	17512762	17523120	17533476	17543832	17554187	17564540
966	17574893	17585244	17595595	17605944	17616292	17626639	17636985	17647330	17657674	17668017
967	17678359	17688700	17699039	17709378	17719715	17730052	17740387	17750721	17761055	17771387
968	17781718	17792048	17802377	17812705	17823032	17833358	17843682	17854006	17864329	17874650
969	17884971	17895290	17905608	17915926	17926242	17936557	17946871	17957184	17967496	17977807
970	17988117	17998425	18008733	18019040	18029345	18039650	18049953	18060255	18070557	18080857
971	18091156	18101454	18111751	18122047	18132342	18142636	18152929	18163221	18173512	18183801
972	18194090	18204377	18214664	18224949	18235234	18245517	18255799	18266080	18276360	18286640
973	18296918	18307195	18317470	18327745	18338019	18348292	18358563	18368834	18379104	18389372
974	18399640	18409906	18420171	18430436	18440699	18450961	18461222	18471482	18481742	18491999
975	18502256	18512512	18522767	18533021	18543274	18553525	18563776	18574026	18584274	18594522
976	18604768	18615013	18625258	18635501	18645743	18655984	18666225	18676464	18686701	18696938
977	18707175	18717409	18727643	18737876	18748108	18758339	18768568	18778797	18789024	18799251
978	18809476	18819700	18829924	18840146	18850368	18860588	18870807	18881025	18891243	18901459
979	18911674	18921888	18932101	18942312	18952523	18962733	18972942	18983150	18993356	19003562
980	19013767	19023970	19034173	19044374	19054575	19064774	19074972	19085170	19095367	19105561
981	19115755	19125948	19136141	19146332	19156522	19166711	19176899	19187086	19197272	19207456
982	19217640	19227823	19238005	19248185	19258365	19268544	19278721	19288898	19299073	19309248
983	19319421	19329594	19339765	19349935	19360105	19370273	19380440	19390607	19400772	19410936
984	19421099	19431261	19541422	19451582	19461741	19471899	19482056	19492212	19502367	19512521
985	19522673	19532825	19542976	19553126	19563274	19573422	19583569	19593714	19603859	19614002
986	19624145	19634286	19644427	19654566	19664705	19674842	19684978	19695114	19705248	19715381
987	19725513	19735644	19745775	19755904	19766032	19776159	19786285	19796410	19806534	19816657
988	19826779	19836900	19847020	19857138	19867257	19877374	19887489	19897604	19907718	19917831
989	19927943	19938053	19948163	19958272	19968379	19978486	19988591	19998696	20008800	20018902
990	20029004	20039104	20049204	20059302	12069400	20079496	20089591	20099686	20109779	20119871
991	20129963	20140053	20150142	20160231	20170318	20180404	20190489	20200574	20210657	20220739
992	20230820	20240900	20250979	20261057	20271135	20281211	20291286	20301360	20311433	20321505
993	20331576	20341646	20351715	20361783	20371850	20381916	20391980	20402044	20412107	20422169
994	20432230	20442290	20452349	20462407	20472463	20482519	20492574	20502628	20512681	20522732
995	20532783	20542833	20552882	20562929	20572976	20583022	20593066	20603110	20613153	20623194
996	20633235	20643275	20653313	20663351	20673388	20683423	20693458	20703491	20713524	20723556
997	20733586	20743616	20753645	20763672	20773699	20783724	20793750	20803772	20813795	20823816
998	20833837	20843857	20853875	20863893	20873909	20883925	20893939	20903953	20913965	20923977
999	20933987	20943997	20954005	20964013	20974019	20984025	20994029	21004033	21014035	21024037

Hyperbolic *Mirror.* See Mirror.

Hyperbolic *Space,* in the *Higher Geometry,* the area or ſpace contained between the curve of the hyperbola, the aſymptote, and the ordinate.

HYPERBOLICUM Acutum, a ſolid made by the revolution of the infinite area of the ſpace contained between the curve of the hyperbola and its aſymptote. This produces a ſolid infinitely long, and yet is demonſtrated to be equal to a finite ſolid or body. See *Logarithmic* Curve.

HYPERBOLIFORM Figures, are ſuch curves as approach, in their properties, to the nature of the hyperbola; called alſo *hyperboloids.*

HYPERBOLOIDS, are hyperbolas of the higher kind, whoſe nature is expreſſed by this equation, $a\,y^{m+n} = b\,x^{m}(a+x)^{n}$. See Hyperbola.

Hyperboloid denotes alſo the hyperbolic conoid. See Conoid.

HYPERBOREAN, Ὑπερβόρεος, in the *Ancient Geography.* The ancients denominated thoſe people and places Hyperborean, which were to the northward of the Scythians. They had but very little acquaintance with theſe Hyperborean regions; and all they tell us of them is very precarious, and much of it falſe.

Diodorus Siculus ſays, the Hyperboreans were thus called becauſe they dwelt beyond the wind Boreas; ὑπερ ſignifying *above* or *beyond*; and Βορεας, *Boreas,* the north wind. This etymology is very natural and plauſible, notwithſtanding all that Rudbecks has ſaid againſt it, who would have the word to be generally Gothic, and to ſignify *nobility.*

Herodotus doubts whether or not there were any ſuch thing as Hyperborean nations: Strabo, who profeſſed that he believed there were, does not take Hyperborean to ſignify *beyond Boreas,* or the north, as Herodotus underſtood it: the prepoſition ὑπερ, in this caſe, he ſuppoſes only to help in forming a ſuperlative; ſo that hyperborean, on his principle, means no more than *moſt northern*: by which it appears the ancients ſcarcely knew themſelves what the name meant by it. Strabo aſſigns for their habitation the country in the vicinity of the Euxine ſea. Callimachus the poet places them near the Palus Mæotides. Pliny and Pomponius Mela place them behind the Riphæan mountains, towards the Icy ſea. Virgil and Catullus are of the ſame opinion. According to Mela, Pliny, and others, they inhabited a country in which they had a day and night of ſix months each. Moſt of our modern geographers, as Hoffman, Cellarius, &c. have placed the Hyperboreans in the northern part of the European continent, among the Siberians and Samoieds: according to them the Hyperboreans of the ancients were thoſe, in general, who lived fartheſt to the north. The Hyperboreans of our days are thoſe Ruſſians who inhabit between the Volga and the White ſea. According to Cluvier, the name Celtes was ſynonymous with that of Hyperboreans. Theſe people, it is ſaid, were accuſtomed to ſend the firſt productions of their fruits to Delos, to be conſecrated to Apollo, whom they principally honoured.

HYPERCATALECTIC, Ὑπερκαταληκτικος, compoſed of ὑπερ, *over, beyond,* and καταληγω, *I put to the number, I add;* ſo that hypercatalectic denotes as much as *ſuperadded;* in the *Greek* and *Latin Poetry,* is applied to verſes which have one or two ſyllables too much; or beyond the regular meaſure. See Verse.

The Greek and Latin verſes are diſtinguiſhed, with reſpect to their meaſure, into four kinds: *acatalectic* verſes, where nothing is wanting at the end; *catalectic,* which want a ſyllable at the end; *brachycatalectic,* which want a whole foot at the end; and, laſtly, *hypercatalectic,* which have one or two ſyllables too many. Theſe laſt are alſo called *hypermeters.*

HYPERCATHARSIS, in *Medicine,* from the Greek ὑπερ, *ſupra,* and καθαριζω, *I purge,* ſignifies an *over-purgation,* or exceſſive purging induced by medicine.

A hypercatharſis is ſaid to take place, when the frequency of looſe ſtools, after any cathartic has been adminiſtered, continues great, after the operation of the cathartic might have been expected to ceaſe; or when the purging operation is very ſevere, being accompanied with a great diſcharge of ſerous or mucous fluids from the bowels, or with bloody evacuations. Such extreme purgation is moſt commonly occaſioned by cathartics of a draſtic nature; but we have ſeen it produced, in certain conditions of the conſtitution, by thoſe of a milder quality, ſuch as the cryſtals of tartar. In old and debilitated habits, violent purgatives ſhould be employed with great caution, and only when more lenient ones appear to be altogether inadequate to accompliſh the object in view; ſince a hypercatharſis, induced in ſuch habits, may occaſion ſo ſudden a depreſſion of the powers of life as may be irrecoverable. The ancients, from the paucity of their catalogue of purgative drugs, were compelled to adminiſter the white hellebore, where an active cathartic was required; and it would appear, from the aphoriſms of Hippocrates, that convulſions and death occaſionally followed the hypercatharſis, which that acrid medicine produced.

The moſt effectual remedy for allaying the inordinate action and irritation in the bowels, in a hypercatharſis, is opium, under any form. If the ſtrength is already conſiderably reduced, it may be combined with cordial and ſtimulant medicines, wine, and light but cordial nutriment. The abſorbent and aſtringent ſubſtances may be advantageouſly united with the opiates, but are inefficacious alone; ſuch are chalk, gum kino, the extract of log-wood, and eſpecially the extract of catechu, which, when joined with aromatics and opium, as in the *confectio catechu* of the Edinburgh Pharmacopeia, is a very effectual ſoother of exceſſive irritation in the alimentary canal. As the irritation, thus excited, is often chiefly ſeated in the large inteſtines, the opiates may be frequently adminiſtered in mucilaginous or ſtarch glyſters with great and ſpeedy benefit.

HYPERCHIRIA, in *Mythology,* a title of Juno, under which ſhe was worſhipped in Laconia.

HYPERCRISIS, in *Medicine,* a term uſed by Galen and other ancient writers to denote any immoderate critical excretion, or *ſuper-criſis,* as it were. (See Crisis.) Thus when a fever terminates by a profuſe ſweating or diarrhœa, the diſcharge being greater than the ſtrength of the patient is able to bear, a hypercriſis was ſaid to take place. See Galen, cap. 3. prognoſt.

HYPERCRITIC, compounded of ὑπερ, *ſupra,* and κριτικος, of κριτης, *judex,* of κρινω, *I judge;* an over-rigid cenſor, or critic; one who will let nothing paſs, but animadverts ſeverely on the ſlighteſt fault.

HYPER-DIEZEUXIS, in *Muſic,* the disjunction of the two tetrachords, ſeparated by the interval of an octave, as the tetrachord hypaton and hyperbolæon.

HYPER-DORIAN, a mode ſo called in Greek muſic, and ſometimes denominated Mixo-Lydian; the fundamental or key-note of which was a fourth above the Dorian. See Mode.

The invention of the hyperdorian mode is aſcribed to Pythoclides.

HYPERDULIA, Ὑπερδουλειαν, compoſed of ὑπερ, *above,* and δουλεια, *worſhip,* in the *Romiſh Theology,* is the worſhip rendered to the Holy Virgin.

The worſhip offered to ſaints is called *dulia;* and that to the Mother of God, *hyperdulia*; as being ſuperior to the former.

HYPERICOIDES, in *Botany*. See Ascyrum.

HYPERICUM, ὑπερικον of Dioſcorides, as appears by his deſcription; and the *Hypericum* of Pliny. Linnæus deduces the name from ὑπερ, *above*, and εικων, *a figure* or *image*, which does not ſeem to bring us a ſtep nearer to its meaning. Linn. Gen. 392. Schreb. 517. Willd. Sp. Pl. v. 3. 1437. Mart. Mill. Dict. v. 2. Sm. Fl. Brit. 800. Juſſ. 255. Tourn. t. 131. Lamarck. Illuſtr. t. 643. Gærtn. t. 62. (Aſcyrum; Tourn. t. 131. Lamarck Illuſtr. t. 642) Claſs and order, *Polyadelphia Polyandria*. Nat. Ord. *Rotaceæ*, Linn. *Hyperica*, Juſſ.

Gen. Ch. *Cal.* Perianth inferior, in five deep, nearly ovate, concave, permanent ſegments. *Cor.* Petals five, oblong-ovate, obtuſe, ſpreading, obliquely twiſted according to the ſun's motion. *Stam.* Filaments numerous, capillary, united at the baſe into three or five bundles; anthers ſmall, roundiſh. *Piſt.* Germen ſuperior, roundiſh; ſtyles three or five, ſometimes one or two, ſimple, diſtant, the length of the ſtamens; ſtigmas ſimple. *Peric.* Capſule roundiſh, the number of its cells agreeing with that of the ſtyles. *Seeds* numerous, oblong, affixed to the central column.

Eſſ. Ch. Calyx in five deep ſegments, inferior. Petals five. Filaments numerous, united by the baſe into three or five ſets. Capſule with many ſeeds.

A copious and handſome genus, chiefly European, American, or Chineſe, rarely tropical. Willdenow has 88 ſpecies; 11 are now known as belonging to the Britiſh Flora. The *ſtems* are either ſhrubby or herbaceous, uſually angular. *Roots* perennial. *Leaves* ſimple, oppoſite, ſeſſile, entire. Whole herbage generally ſmooth, with glandular pellucid dots, and an aromatic ſcent, rarely downy. *Flowers* terminal, cymoſe, yellow and brilliant. *Calyx* often fringed.

Common wild ſpecies are,

H. quadrangulum, Engl. Bot. t. 370. Curt. Lond. faſc. 4. t. 52, found about ditches and rivers; *perforatum*, Engl. Bot. t. 295. Curt. Lond. faſc. 1. t. 57, more abundant in dry buſhy places; and *pulchrum*, Curt. Lond. faſc. t. 56. Engl. Bot. t. 1227, which forms an elegant decoration to healthy buſhy ground.

H. *calycinum*, Curt. Mag. t. 146. Engl. Bot. t. 2017, now known to be wild near Cork, in Ireland, is a frequent ornament to ſhrubberies and parks, where its ample bloſſoms are very conſpicuous.

Several ſhrubby American ſpecies are cultivated with us for ornament, as the *hircinum*, remarkable for its ſtrong fox or goat-like ſcent.

HYPERIDES, in *Biography*, an eminent Grecian orator, the ſon of Glaucippus, was born at Athens, and ſtudied under Plato and Iſocrates. He cultivated the art of eloquence, became one of the moſt diſtinguiſhed orators of his time, and acquired that ſway in ſtate affairs which popular oratorical talents never failed to obtain in the ancient democracies. He was the ſteady and zealous opponent of Philip of Macedon, and his zeal cauſed him to be made commander of a galley, in which capacity he gained much credit by his promptneſs and zeal in ſuccouring the Byzantians. When Philip threatened an invaſion of Eubœa, Hyperides procured a tax to be levied for the equipment of 40 galleys, and ſet the example by contributing one for himſelf and another for his ſon. In the time of Alexander he was poſſeſſed of the chief influence in Athens, and when that prince demanded galleys and officers from the Athenians he oppoſed the grant of either. His life was fully devoted to his country. He moved diſtinguiſhed honours to Demoſthenes his great competitor in eloquence; but when this prince of orators was ſuſpected of having taken a bribe from Harpalus, he was appointed to conduct the proſecution againſt him. Hyperides was himſelf accuſed of having acted contrary to the laws, by procuring a decree for granting citizenſhip to foreigners, and liberty to the ſlaves, whoſe families he cauſed to be tranſported to the Piræus, but he juſtified himſelf on the ground of ſtate neceſſity, and proved that it was not he who paſſed the decrees, but the alarm with which Athens was ſeized, and the defeat of the Chæronea. Hyperides continued his oppoſition to the Macedonian power after the death of Alexander; and when Antipater ſent deputies to Athens, who made a high eulogy upon their maſter as the wortheſt of men: "I know," replied Hyperides, "that he is a very worthy man, but we will have no maſter however worthy he may be." The approach of Antipater obliged Hyperides and the other leading characters to quit Athens, and he had an interview with Demoſthenes, alſo a fugitive at Ægina. Departing thence, he was ſeeking for a ſafer place of refuge, when he was apprehended by Archias in the temple where he had taken ſanctuary, and carried to Antipater at Cleonæ. He was put to the torture with the hope of obtaining from him ſome ſtate ſecrets: to prevent this he is ſaid to have bit off part of his tongue; but another account relates that his tongue was cut out by the tyrant as a puniſhment due to his ſilence. His body was left unburied till ſome of his relations ſecretly committed it to the funeral pile, and brought his aſhes to Athens. Quintilian characteriſes the oratory of Hyperides as ſingularly ſweet and acute, better adapted to little than to great cauſes. In the time of Photius 52 of his orations were extant. Gen. Biog.

HYPERIDROSIS, the diſtention of a part by water.

HYPERINESIS, of ὑπερ and ινησις, *purgation*, a word uſed by Hippocrates for any exceſſive evacuation, but moſt frequently in the ſame ſenſe as hypercatharſis, an over-purging.

HYPER-IONIAN, in *Ancient Muſic*, one of the Greek modes, whoſe fundamental was one fourth above the Ionian. It is the 12th mode aſcending in the ſcale.

HYPERIUS, Gerard Andrew, in *Biography*, was born at Ypres in Flanders, whence he took his ſurname, in the year 1511. He was ſent to Paris to complete thoſe ſtudies which he had ſucceſsfully commenced in the Flemiſh ſchools. He entered on the ſtudy of divinity, which he proſecuted with much diligence till the year 1535. During the vacations he travelled much in different countries, and after he had completed his ſtudies at Paris he ſpent ſome time at Louvain, and then viſited ſeveral other German univerſities. Theſe viſits into heretical countries not only prevented him from being preferred in the church, but obliged him to ſeek the ſecurity of his perſon in England, which at almoſt every period of her hiſtory has been more or leſs friendly to the votaries of freedom. He lived four years in the houſe of Charles lord Montjoy, who ſettled on him a handſome ſtipend, which enabled him to apply himſelf to the purſuits of literature. During this period he embraced the opportunities offered him of viſiting the univerſities of Cambridge and Oxford, but, alarmed at ſome proceedings of Henry VIII., he returned to the continent, ſettled at Marpurg in 1542, and was appointed to the theological chair. The duties of this office he performed with great reputation 22 years. He died in the year 1564, about the age of 53. He was author of numerous works, ſome of which were publiſhed by himſelf, and the reſt were given to the world after his death. They conſiſt of "Commentaries on the Scriptures;" "Theological Diſſertations;" "Controverſial Tracts;" treatiſes in rhetoric, logic, arithmetic, geometry, aſtronomy, optics, natural philoſophy, &c. Hyperius, ſays his biographer, had a very clear head, and a very happy talent in conveying inſtruction. He was meek and polite in converſation, and delighted in ſocial convivial intercourſe. In a word, he was a man who poſſeſſed true wit and good ſenſe, and who added to thoſe qualities a high degree of virtue and zeal. Bayle.

HYPER-LYDIAN, in *Muſic*, was the moſt acute of the 15 Greek modes. Its fundamental was a fourth above the Lydian.

HYPERMETER, compoſed of ὑπερ, *ſupra*, and μετρον, *meaſure*, in the *Ancient Poetry*, the ſame with hypercatalectic.

HYPEROA, a word applied by authors to the upper part, or palate of the mouth, and the baſis cerebri. It properly ſignifies any upper place.

HYPEROCHE *of Dr. Buſby*, in *Muſic*, (Muſ. Dict.) is "the difference between the enharmonic and chromatic dieſis," an interval, whoſe ratio is $\frac{2097152}{2109375} = 5\,\Sigma + f$, which is the SEMI-COMMA *maxime* of Rameau, ſee that article. A doubt, however, remains with us, as Dr. B. has quoted no author, only mentioning the ancient authors generally, nor given the ratios, whether by the term "chromatic dieſis," he did not mean the leaſt chromatic dieſis of Holder, Chambers, &c. in which caſe his hyperoche would coincide with the hyperoche of Henſling and others below.

HYPEROCHE *of Dr. Callcott.* In peruſing the additions by Dr. Callcott to the Overend MS. which we have ſo often quoted, we met with an interval ſo named, whoſe ratio is $\frac{16{,}677{,}181{,}699{,}666{,}569}{16{,}777{,}216{,}000{,}000{,}000} = 5\,\Sigma + 2\,f$, which is the *greater* RESIDUAL, ſee that article.

HYPEROCHE *of Henſling*, Travers, Dr. Pepuſch, Overend, Dr. Callcott (Muſical Grammar, art. 231.), &c. is an interval whoſe ratio is $\frac{3072}{3125}$, or $\frac{2^{10}3}{5^5}$, its value in Farey's notation being $15\,\Sigma + f + m$; its common logarithm is .9925711,8968, the reciprocal of which is 74288,1032; its Euler's or binary logarithm is .024679, ſuch being its decimal value of the octave 1: it is equal 1.37696 major commas, and to 15.157524 ſchiſmas. It is equal to the ſum of the following pairs of intervals, *viz.* a diaſchiſma and a medius reſidual, a major comma and a ſemi-comma major of Rameau, a minor comma and a ſemi-comma maxime of Rameau, a dieze minime and a ſchiſma, a priſma and five ſchiſmas, &c. It reſults, as the difference between the following pairs of intervals, *viz.* a ſemitone minor and an enharmonic dieſis, an enharmonic dieſis and a major reſidual, a ſemitone ſubminime and a minor comma, a major ſemitone and two enharmonic dieſes, a chromatic dieſis and a major comma, two ſemitones minor and a ſemitone major, two minor tones and three major ſemitones, three minor ſemitones and a minor tone, &c. The following three intervals alſo compoſe it by addition, *viz.* a ſchiſma, a minor reſidual and a diaſchiſma, a ſchiſma, a medius reſidual, and a major comma, &c.

If three major thirds be turned upwards, and two minor thirds and a fourth downwards, each true and without any beats on an inſtrument having ſufficient ſtrings, this interval will reſult; which, in the additions to the Overend MS. by Dr. Callcott, is deſignated by the Greek ſmall *p* or *pi.*

HYPEROCHE *of Ptolemy*, is an interval whoſe ratio is $\frac{128}{129}$, or $\frac{2^7}{343}$, or $6.88806\,\Sigma + m$, and therefore not in the diatonic ſcale: its common logarithm is .9966202,5935, and its Euler's log = .01122725, and it is equal to .6264543 major commas. It cannot, of courſe, be tuned by any combinations of perfect concords, though it readily may by calculating the BEATS which it makes. See that article.

HYPERO-PHARYNGÆI, in *Anatomy*, a name given by M. Santorini to the peryſtaphylo-pharyngæi muſcles.

HYPEROSTOSIS, from ὑπερ *upon*, and ὀστεον, *a bone*, in *Surgery*, any hard indolent ſwelling upon a bone. See EXOSTOSIS.

HYPER-OXYMURIATES. See the following article.

HYPER-OXYMURIATIC ACID, in *Chemiſtry*. This acid contains a greater proportion of oxygen than the oxymuriatic acid, and on that account has received its name. It may be procured in combination with potaſh in the following proceſs: if a quantity of potaſh, with ſix times its weight of water, be put into one of the bottles of Woulfe's apparatus, and a ſtream of oxymuriatic acid gas be paſſed through it till the potaſh is ſaturated, cryſtals in the form of fine white ſcales fall to the bottom; theſe are cryſtals of hyper-oxymuriatic of potaſh, being a compound of potaſh and hyper-oxymuriatic acid. This acid is chiefly known in its ſaline combinations. Theſe are named *hyper-oxymuriates*, and from the peculiarity of their chemical compoſition—the large quantity of condenſed oxygen exiſting in them, and retained by no very ſtrong attraction, their characters are extremely diſtinctive. The principal are theſe, they afford very pure oxygen when expoſed to a red heat, detonating with great violence with inflammable bodies, either on the application of heat, or by mere percuſſion or trituration, and cauſing thoſe bodies to burn when ſulphuric or nitric acid is added to the mixture of the ſalt and the inflammable matter. Their taſte is cool and penetrating; they are generally ſoluble in water, and cryſtallizable: the greater number of them are alſo ſoluble in alcohol. They do not precipitate any of the metallic ſalts; nor deſtroy the vegetable colours, but in ſmall quantities they heighten them. The hyper-oxymuriatic acid contains

Oxygen	- -	65 parts.
Muriatic acid	-	35
		100

The order of the affinities of the hyper-oxymuriatic acid is the following:

Potaſh,
Soda,
Barytes,
Strontites,
Lime,
Ammonia,
Magneſia,
Alumine.

From the hyper-oxymuriates of potaſh, oxygen-gas can be obtained in the greateſt purity; but the moſt aſtoniſhing of its properties are thoſe which it exhibits when mixed with combuſtibles. All combuſtible ſubſtances are capable of decompoſing it, and in general the decompoſition is attended with violent detonations. When three parts of this ſalt and one of ſulphur are triturated in a mortar, the mixture detonates violently: the ſame effect is produced when the mixture is placed upon an anvil, and ſtruck ſmartly with a hammer. It ſometimes detonates ſpontaneouſly without any perceptible friction. Charcoal produces the ſame effect, though not ſo violent. This property led Berthollet to propoſe it as a ſubſtitute for nitre in the preparation of gunpowder. The attempt was made in 1788, but as ſoon as the workmen began to triturate the mixture of charcoal, ſulphur, and the hyper-oxymuriate of potaſh, it exploded with violence, and proved fatal to two of the experimenters. Phoſphorus detonates with this ſalt either by trituration or percuſſion, but the quantities uſed ſhould not be more than half a grain each, or there will be danger in the experiment. When this ſalt is triturated in a mortar with a little cotton cloth, ſmall repeated exploſions are heard ſimilar to the crack of a whip, and if the cotton be dry and warm it ſometimes takes fire. When nitric acid is poured upon a mixture of oxymuriate of potaſh and phoſphorus, flakes of fire are emitted at intervals for a conſiderable time. The theory of theſe exploſions is this. The oxygen of the acid combines with the combuſtible, and at the ſame time lets go a quantity of caloric: and trituration or percuſſion acts merely by bringing the particles which combine within the ſphere of each other's attraction. The conſtituents of the oxymuriate of potaſh are

58.3 Acid,
39 2 Potaſh,
2.5 Water.

It is prepared by diſſolving one part of carbonate of potaſh in ſix parts of water, and ſaturating the potaſh with oxymuriatic acid gas. When the ſaturation is nearly completed the oxymuriate falls down in cryſtals. It is purified by ſolution in boiling water: as the water cools, the pure hyperoxymuriate cryſtallizes. The cryſtals are to be dried between the folds of blotting paper. Hyper-oxymuriate of ſoda may be prepared by the ſame proceſs as hyper-oxymuriate of potaſh; it cryſtallizes in cubes, and it produces a ſenſation of cold in the mouth. The other hyper-oxymuriates that have been examined are thoſe of ammonia, magneſia, lime, barytes, and ſtrontian. See MURIATIC *Acid*, in which article an account of Dr. Davy's experiments on it, with a view to its decompoſition, and the reſults will be given.

HYPER PHRYGIAN, in *Ancient Muſic*, called by Euclid hypermixolydian, was the moſt acute of the thirteen modes of Ariſtoxenus.

HYPERSARCOMA, or HYPERSARCO'SIS, from ὑπὲρ, and σαρξ, *fleſh*, a fleſhy excreſcence; fungous granulations; proud fleſh.

HYPERTHYRON, formed of ὑπὲρ, *over*, and θυρα, *gate*, in the *Ancient Architecture*, a ſort of table uſed after the manner of a frieze, over the jambs of Doric doors and gates, and the lintels of windows. It lies immediately under the corona; and is, by our workmen, uſually called the *king-piece*.

HYPETHRE, two rows of pillars ſurrounding, and ten at each face of any temple, &c. with a periſtyle within of ſix columns. See HYPÆTHROS.

HYPHASIS, or HUPHASIS, in *Ancient Geography*, a river of India, called anciently by the natives Beypaſha; now the *Beyah*; which ſee.

HYPHEN, Ὑφ᾽ἓν, in *Grammar*, an accent or character, which implies, that two words are to be joined, or connected into one compound word—As, *male-adminiſtration*, &c.

Hyphens ſerve alſo to connect the ſyllables of ſuch words as are divided by the end of the line.

HYPHIALTES, EPHIALTES, in *Mythology*, names given by the Greeks to certain rural divinities anſwering to the Incubi of the Romans.

HYPHYDRA, in *Botany*, derived from ὑπο, *under*, and ὕδωρ, *water*, becauſe, as Aublet informs us, it is always found growing three or four feet under the ſurface.—Schreb. 666. Willd. Sp. Pl. v. 4. 629. Vahl. Symb. v. 3. 99. (Tonina; Aubl. Guian. 856. Juſſ. 443.) Claſs and order, *Monœcia Gynandria*. Nat. Ord. *Plantæ incertæ ſedis*, Juſſ.

Gen. Ch. Male, *Cal.* Perianth of one leaf, deeply divided into three, obovate, concave, ſmooth lobes incurved at the top. *Cor.* none. *Stam.* Filaments ſix, capillary, long, inſerted, at the angles, above the germen; anthers roundiſh. *Piſt.* Germen empty, inflated, membranous, hexagonal, truncated at the top; ſtyle capillary, the length of the ſtamens; ſtigma none.—Female, *Cal. Cor.* and *Stam.* none. *Piſt.* Germen roundiſh, with three furrows; ſtyle triangular; ſtigmas three, acute. *Peric.* Capſule membranous, of one cell, and three valves. *Seed* ſolitary, ovate, ſtreaked.

Eſſ. Ch. Male, Calyx three-cleft. Corolla none. Stamens ſix. Female, Calyx none. Corolla none. Style ſingle. Stigmas three. Capſule of three valves, ſingle-ſeeded.

1. *H. amplexicaulis*. (Tonina fluviatilis; Aubl. Guian. 857. t. 330.—Eriocaulon amplexicaule; Rottb. Surinam. 4. t. 1. f. 1.)—An inhabitant of waters at Guiana and Cayenne, flowering and bearing fruit in February. This herb puts forth many branching, ſcattered, erect or decambent little *ſtems*, furniſhed with capillary radicles. *Leaves* alternate, ſmooth, narrow, lanceolate, acute, fringed longitudinally with reddiſh briſtles, ſeſſile, embracing the ſtem. *Flowers* capitate, axillary, on ſolitary footſtalks.

HYPNOTIC, Ὑπνωτικος, derived from ὕπνος, *ſleep*, in *Medicine*, a remedy which promotes or induces ſleep; called alſo *ſoporific* and *opiate*. See alſo NARCOTICS.

HYPNOTICUS SERPENS, the *ſleep-ſnake*, in *Zoology*, the name of an Eaſt Indian ſpecies of ſerpent, called by the Ceyloneſe *nintipolong*, a word importing the ſame ſenſe. It is of a deep blackiſh brown, variegated with ſpots of white, and is a very fatal kind in its poiſon, its bite always bringing on a ſleep which ends in death.

HYPNUM, in *Botany*, an ancient name for ſome kind of moſs, formerly uſed in medicine. The word is ſuppoſed by Dillenius, who firſt adopted it for the particular genus to which it is now applied, to originate from ὕπνος, *ſleep*; and he juſtifies its application on the principle of fragrant ſubſtances, like theſe moſſes, producing ſleep. Dill. Muſc. 261. Linn. Gen. 564. Schreb. 762. Hedw. Fund. v. 2. 94. Sm. Fl. Brit. 1276. Juſſ. 11. Lamarck Illuſtr. t. 874. (Leſkia; Schreb. 762. Hedw. Fund. v. 2. 93. t. 10. f. 62—65.)—Claſs and order, *Cryptogamia Muſci*. Nat. Ord. *Muſci*.

Eſſ. Ch. Capſule ovate-oblong, from a lateral ſcaly ſheath. Outer fringe of ſixteen teeth, dilated at the baſe; inner a variouſly-toothed membrane; veil ſmooth.

This vaſt and beautiful genus differs from *Bryum*, (ſee that article), in no other eſſential character than the lateral, not terminal, ſituation of its female flowers. The habit, however, is widely different. *Hypnum* has uſually a lax, ſpreading, repeatedly branched ſtem, whence its Engliſh name of Feather-moſs, cloathing the ground to a wide extent, and being of larger dimenſions than moſt others of this family. The ſpecies in the *Flora Britannica* are 77, and a few others have been found ſince that work came out. The *Species Muſcorum* of Hedwig defines 83 *Hypna*, beſides 35 ſpecies of *Leſkea*, or *Leſkia*, a genus comprehended under *Hypnum* in Flor. Brit. Yet theſe, making together 118, form but an inadequate catalogue of the known ſpecies, and ſome of them are reducible to other genera, *H. Smithii* of Dickſon and Hedwig being a *Pterogonium*; and others belonging to *Hookeria*. The difference on which Hedwig founds the diſtinction between *Hypnum* and *Leſkea* conſiſts in the inner fringe, the teeth of which in the latter are equal and uniform, uſually 16 in number, while in the former there are 16 broad teeth, with ſingle or double intermediate ones. This diſtinction, however, proves not only extremely difficult to diſcern, but totally unnatural as to the ſpecies it brings together or ſeparates, and by no means certain or conſtant in each.—See FRINGE *of* MOSSES.

Hypnum is diſtributed into ſeveral ſections.

1. Capſules erect. Shoots cylindrical.

Of this H. *pulchellum*, Engl. Bot. t. 2006, and *ſericeum*, t. 1445, the latter very common on walls, roofs, banks, and trees, may ſerve for examples.

2. Capſules erect. Shoots compreſſed, the leaves being diſpoſed in two ranks.

The only two Britiſh ſpecies here are *complanatum*, Engl. Bot. t. 1492, and *trichomanoides*, t. 1493.

3. Capſules drooping or curved. Shoots compreſſed, the leaves in two ranks.

Such are *denticulatum*, t. 1260; *crenulatum*, t. 1261; *ſerrulatum*, t. 1262; and the common *riparium*, t. 2060. But *lucens* no longer remains here, being now called *Hookeria lucens*, (ſee Hookeria;) and there is much reaſon to believe the beautiful *undulatum* ought alſo to make one of a new genus, marked by its furrowed capſule.

4. Capſules drooping or curved. Shoots compreſſed. Leaves imbricated every way.

A handſome tribe, ſee *ſplendens*, Engl. Bot. t. 1424; *proliferum*, t. 1494. Curt. Lond. faſc. 1. t. 72, very common in woods, but rarely in fruit; and *prælongum*, t. 2035, alſo very frequent.

5. Capſules drooping or curved. Shoots cylindrical. Leaves imbricated every way.

A rather numerous ſection, in which we find *Alopecurum*, Engl. Bot. t. 1182, a native of ſhady moiſt rocks; *ſerpens*, t. 1037, very common, known by its white veil; *luteſcens*, t. 1301; and the beautiful though vulgar *purum*, t. 1599.

6. Capſules drooping or curved. Leaves ſquarroſe.

The ſharp prominent leaves, projecting on all ſides of the branches, give the peculiar character of this very diſtinct ſection, as in *fluitans*, t. 1448; *ſtriatum*, t. 1648; *ſtellatum*, t. 1302; and the great well-known *triquetrum*, t. 1622.

7. Capſules drooping or curved. Leaves curled.

In this elegant ſection are *rugoſum*, t. 2250; *ſcorpioides*, t. 1039, the figure done from too young a ſpecimen, but otherwiſe correct; *cupreſſiforme*, t. 1860; *molluſcum*, t. 1327, and a near relation of the laſt, though much finer, the true *H. Chriſta caſtrenſis*, t. 2108, recently diſcovered in Scotland by Mr. G. Don.

HYPO, Ὑπο, a Greek particle retained in the compoſition of divers words borrowed from that language; literally denoting *under*, *beneath*.—In which ſenſe it ſtands oppoſed to ὑπερ, *ſupra*, *above*.

HYPO-ÆOLIAN, a mode in the *Ancient Muſic*, called alſo by Euclid the grave hypo-lydian. This mode has its fundamental a fourth below the Æolian.

HYPOBOLE, from ὑπο, and βαλλω, *I caſt*, or *Subjection*, in *Rhetoric*, a figure, ſo called, when ſeveral things are mentioned, that ſeem to make for the contrary ſide, and each of them refuted in order. This figure, when complete, conſiſts of three parts; a propoſition, an enumeration of particulars with their anſwer, and a concluſion. Thus Cicero, upon his return from baniſhment, vindicates his conduct in withdrawing ſo quietly and not oppoſing the faction that ejected him. Pro. Dom. cap. 35.

HYPOCATHARSIS, Ὑποκαθαρσις, compounded of ὑπο, *under*, and καθαιρω, *I purge*, in *Medicine*, a too faint or feeble purgation.

HYPOCAUSTUM, Ὑποκαυστον, formed of the prepoſition ὑπο, *under*, and the verb καιω, *I burn*, among the Greeks and Romans, was a ſubterraneous place, wherein was a furnace that ſerved to heat the baths.—Vitruvius calls it caldarium.

The ancients had properly two ſorts of hypocauſta; the one called by Cicero *vaporarium*, and by others *laconicum*, or *ſudatio*; which was a large ſweating bath, in which were three brazen veſſels called *caldarium*, *tepidarium*, and *frigidarium*, according to the water contained therein.

The other hypocauſtum was a ſort of *fornax*, or oven, to heat their winter parlours, or *cœnatiunculæ hybernæ*.

The latter hypocauſtum was called *alveus* and *fornax*; and the man that tended the fire, *fornacator*. See Baths.

The remains of a Roman hypocauſtum, or ſweating-room, were diſcovered under ground at Lincoln, in 1739. We have an account of theſe remains in the Phil. Tranſ. N° 401. ſect. 29. See Abr. vol. ix. p. 455.

Hypocaustum, among the moderns is that part or place where the fire is kept that warms a ſtove, or hot-houſe.

HYPOCHÆRIS, in *Botany*, ὑποχοιρις, an ancient name of uncertain derivation. Linn. Gen. 405. Schreb. 533. Willd. Sp. Pl. v. 3. 1620. Mart. Mill. Dict. v. 2. Sm. Fl. Brit. 840. Juſſ. 170. Lamarck Illuſtr. t. 656. Gærtn. t. 160. Claſs and order, *Syngeneſia Polygamia æqualis*. Nat. Ord. *Compoſitæ Semifloſculoſæ*, Linn. *Cichoraceæ*, Juſſ.

Gen. Ch. *Common Calyx* roundiſh, imbricated, ſwelling at the baſe; the ſcales lanceolate, acute. *Cor.* compound, uniform, imbricated, the florets hermaphrodite, equal, numerous, each with one ligulate, linear, abrupt, five-toothed petal. *Stam.* Filaments five, capillary, very ſhort; anthers united into a cylindrical tube. *Piſt.* Germen ovate; ſtyle thread-ſhaped, the length of the ſtamens; ſtigmas two, reflexed. *Peric.* none, except the cloſed calyx, aſſuming a globoſe pointed ſhape. *Seeds* ſolitary, oblong. *Down* feathery, ſtalked. *Recept.* clothed with linear-lanceolate ſcales, the length of the ſeeds.

Eſſ. Ch. Receptacle chaffy. Calyx ſomewhat imbricated. Down feathery.

Obſ. Haller, Reichard, and others have remarked, that in H. *glabra* the ſeeds of the circumference have ſeſſile down. See Fl. Brit. 842.

Five ſpecies of *Hypochæris* are defined by Willdenow, ſome Linnæan ones being removed to *Seriola*. Three are natives of England; the *maculata*, Engl. Bot. t. 225, found in chalky open paſtures, but rarely; *glabra*, t. 575. Curt. Lond. faſc. 3. t. 53, a native of gravelly fields, ſometimes found among turnips in Norfolk, in which caſe it is very luxuriant; and *radicata*, Curt. Lond. faſc. 3. t. 52. Engl. Bot. t. 831, a very common weed.

The firſt is perennial, with a nearly ſolitary, rather large, yellow flower, and toothed, rough leaves ſpotted with black. The ſecond is annual, ſmooth, with ſeveral ſmall, pale, yellow flowers, expanding in the morning only. The third is perennial, with rough runcinate leaves, a ſmooth branching ſtem, and large flowers of a full yellow.

The other two ſpecies in Willdenow are,

1. H. *helvetica*, Jacq. Ic. Rar. t. 165, a large and handſome plant, confounded by Linnæus with his *maculata*, from which its narrower, lanceolate, unſpotted leaves, perfectly ſimple ſtem ſwelling upward, and very large flower diſtinguiſh it. This ſpecies, found on the Alps, is delineated by Haller, Allioni, and Villars, being a favourite with alpine botaniſts.

2. H. *minima*, Desfont. Atlant. v. 2. 238. (H. hiſpida; Roth. Catal. v. 1. 100.) Native of Barbary, reſembling H. *glabra*, but ſcarcely half its ſize, with roughiſh leaves and a briſtly calyx.

HYPOCHEOMENOS, a perſon afflicted with a cataract, or opacity of the cryſtalline lens of the eye. The term is derived from ὑποχεω, *to ſuffuſe*.

HYPOCHONDRIA, in *Anatomy*, from ὑπο, *under*, and χονδρος, *cartilage*, thoſe parts of the cavity of the abdomen which are covered by the inferior ribs and their cartilages: they are diſtinguiſhed by the epithets right and left. See Abdomen.

HYPOCHONDRIASIS, in *Medicine*, a diſorder principally characterized by an anxious and apprehenſive ſtate of mind in reſpect to the patient's health, and by an imaginary ſuffering of many morbid affections, together with a deranged ſtate of the digeſtive organs.

This complaint has been known from ancient times, and has received a great variety of appellations, many of which have been derived from hypothetical views of its nature. The term *hypochondriaſis*, or *hypochondriac diſeaſe*, is taken from *hypochondrium*, ὑποχονδριον, which ſignifies literally *under the cartilage*, and is the name given by anatomiſts to the upper and lateral regions of the belly which lie under the cartilages of the falſe ribs. This appellation was probably given to the diſeaſe in queſtion, in conſequence of the general uneaſy ſenſations which are experienced by hypochondriacs in theſe parts of the body, eſpecially on the left ſide; as well as from the opinion of phyſicians, that the ſeat of theſe ſenſations, and of the diſeaſe itſelf, is always in ſome of the organs which lie in the hypochondria, and which are the ſtomach and ſpleen on the left ſide, and the liver on the right. The Arabians denominated the diſeaſe *Mirachia*, the word *Mirach*, in their language, ſignifying the abdomen or belly. The opinion, which was for a long time prevalent, that *the ſpleen* was principally the ſeat of the diſorder, gave occaſion to the uſe of the name of that viſcus to denote the malady. And another ſuppoſition, that the diſordered ſtate of the mind was excited by *vapours*, ariſing from a collection of fæculent and offenſive matter accumulated in the ſpleen and firſt paſſages, gave riſe to the denomination of *vapours*, by which the malady has alſo been deſignated. The French call hypochondriacal perſons, *malades imaginaires*, from the various imaginary evils of which they complain. The term *hyp* and *hypo*, familiarly uſed in this country, are obviouſly contractions of the Greek name.

It would be impoſſible to give a regular hiſtory of all the ſymptoms of a diſeaſe, which is ever varying and irregular in its phenomena, and includes, in different inſtances, almoſt all the painful ſenſations and ſigns of diſordered functions, that are witneſſed in the various complaints incident to the human frame. We muſt content ourſelves, therefore, with delineating the peculiar features of the diſorder, and enumerating ſome of the moſt remarkable circumſtances that have been obſerved to accompany it. We might ſay, in a few words, that, after a ſeries of ſymptoms, evincing a deranged ſtate of the bodily health in general, but eſpecially of the organs of digeſtion, which have continued for an indefinite length of time, a ſtate of mind gradually ſhews itſelf, which is diſtinguiſhed by the following circumſtances; langour, liſtleſſneſs, or want of reſolution and activity with reſpect to all undertakings: a lowneſs of ſpirits, ſadneſs, and timidity; and with reſpect to all future events, a dread and apprehenſion of the worſt, or moſt unhappy occurrences, often upon the ſlighteſt grounds. But this apprehenſion is particularly directed to the ſtate of the patient's health; he attends minutely to every change of ſenſation, and from every unuſual feeling, though of the ſlighteſt kind, anticipates great danger, and even death itſelf. He ſuppoſes himſelf, at different times, as theſe ſenſations vary, afflicted with every diſorder in ſucceſſion that he has either ſeen, heard, or read of: and, in reſpect to all theſe feelings and apprehenſions, he commonly entertains the moſt obſtinate perſuaſion and belief, and is even diſobliged by any perſon, who ſhall intimate that he looks well. He is fond of complaining, and tireſome in deſcribing his maladies: never ſatiated with medicines, yet conſtantly anxious to fly from remedy to remedy; and equally deſirous of medical counſel, yet ſoon diſſatisfied with every phyſician. As the diſeaſe advances, he is afflicted with moſt unaccountable ſenſations and affections, which can be only referred to his imagination.

Such, in brief, is the character of hypochondriaſis. This ſtate of mind, however, as we have juſt ſtated, is uſhered in and accompanied by various ſymptoms of corporeal diſeaſe, which are principally referrable to a diſordered condition of the digeſtive organs, with which other organs alſo ſuffer in ſympathy. Thus the perſon is troubled for a conſiderable time with flatulency, and a ſenſe of heat and pain along the courſe of the œſophagus and the pit of the ſtomach, called heart-burn, ſometimes attended with acidity and ſometimes with a feeling of oilineſs and rancidity, eſpecially when eructation takes place. The air, which is evolved in the ſtomach, produces great diſtention of that organ, and this diſtention is always accompanied with an uneaſy feeling and ſenſe of anxiety: this wind afterwards deſcends into the bowels, producing croaking and rumbling noiſes, called *borborigmi*, and exciting pricking pains, "ſnatchings, thumpings, and pulſations in the belly," as Maudeville deſcribes them, which conſiſt of ſlight convulſive motions of the abdominal muſcles. The appetite is frequently bad, but in ſome caſes craving, and is generally irregular in the beginning, as well as the alvine diſcharge. As the diſorder advances the patient is generally very coſtive, diſcharging black hardened excrement, with much pain and ſtraining. At this time the bowels are moved with difficulty, and require ſtrong cathartics to produce any effect: hæmorrhoids or piles, eſpecially internal ones, accompanied with great pain, and not unfrequently with bleeding, are liable to occur. Sometimes a diarrhœa ſuddenly comes on; but ſo far from giving relief, it rather exhauſts the ſtrength of the patient, and leaves him low and dejected.

While theſe ſymptoms of indigeſtion prevail, others, which appear to be the direct or indirect conſequence of them, are often very troubleſome. There is often a weight, oppreſſion, or tightneſs felt about the præcordia, with palpitations of the heart: the face is frequently fluſhed, and flying heats are felt even over the whole body: the head often aches, and the eyes are dim. The urine is various: it is often of a wheyiſh, or milky white appearance, which always announces a great weakneſs and diſorder in the chylopoëtic viſcera: at other times a pale and limpid urine is paſſed in large quantities, eſpecially after any agitation of mind, or hurry of ſpirits. Cold ſweats, which alternate with fluſhes of heat, fainting, giddineſs, deafneſs, ringing in the ears, and diſturbed and unrefreſhing ſleeps, from which the patient wakes in fright, are common ſymptoms in the advanced ſtages of the diſorder. The whole nervous ſyſtem is deranged. The patient generally feels a much more oppreſſive ſenſation of weakneſs and fatigue than is natural, conſidering the muſcular ſtrength which he is capable of exerting. Slight ſymptoms of debility, which in another perſon would hardly produce any diſagreeable effect, for inſtance, ſudden diſtention of the ſtomach, ſlight palpitation, or colic, inſtantly occaſion all the alarming feelings of fear and apprehenſion, and theſe are accompanied with a degree of anxiety which cannot be deſcribed.

But the hypochondriac has many painful feelings in parts where no diſeaſe apparently exiſts, and many diſeaſed perceptions which command his belief, and greatly add to the ſum of his miſery. A number of thoſe diſtreſſing feelings are often external pains, ſeated immediately under the ſkin, and in parts which, when examined, appear to be in a ſound ſtate. Sometimes the pain is ſeated in the middle of one or two of the ribs; ſometimes in the middle of the leg, thigh, or arm; ſometimes in the back, and in various parts of the ſcalp. That theſe painful feelings are generally tranſmitted from impreſſions in the ſtomach and bowels, appears from this; that they are moſt frequent, when the patient is troubled with indigeſtion, flatulency, coſtiveneſs, or colic: what is very remarkable, the external pain is often increaſed by preſſure. Dr. Crichton mentions the caſe of a gentleman who ſuffered exceedingly from theſe falſe pains. If the finger was preſſed upon the pained part, it generally excited ſpaſms in the organs of reſpiration, and occaſioned ſo much agony, as to make him ſcream aloud; after the preſſure was removed, the pain ceaſed. Theſe pains were conſtantly ſhifting their place, and often wandered over half the patient's body in the courſe of the day. Dr. Whytt, after enumerating many facts, concludes, "that faintings, tremors, palpitations of the heart, convulſive motions, and great fearfulneſs, may be often owing more to the infirm ſtate of the firſt paſſages, than to any fault either in the brain or heart:" and he farther remarks, in regard to himſelf, "When my ſtomach and bowels have been out of order, and affected with an uneaſy ſenſation from wind, I have not only been ſenſible of a general debility and flatneſs of ſpirits, but the unexpected opening of a door, or any ſuch trifling unforeſeen accident, has inſtantly occaſioned an odd ſenſation about my heart, extending itſelf from thence to my head and arms, and, in a leſſer degree, to the inferior parts of my body. At other times, when my ſtomach is in a firmer ſtate, I have no ſuch feelings, or at leaſt in a very ſmall degree, from cauſes which might be thought more apt to produce them." Whytt on Nervous Diſorders, chap. iii.

When the diſagreeable feelings, dejection of ſpirits, and unremitting anxiety and attention to their health and to every new ſenſation, have continued for an indefinite time, which is longer or ſhorter, according to a variety of circumſtances, diſeaſed perceptions ſuddenly ariſe, which claim the belief of hypochondriacs. It would be vain to attempt an enumeration of all the extravagant ideas which enter into the minds of ſuch people, ſince they are infinitely various. Some think that their extremities and poſteriors are made of glaſs: others that their legs are as ſoft as wax; ſome think they have no heart, others that they have no ſoul; others fancy that they are dead, and others that they are changed to monſters, &c. In others, the diſorder verges upon melancholy, and ideal pains of poverty, perſecution of enemies, ſecret vengeance, and calumny, haunt them perpetually: but in this caſe, the diſeaſe may be conſidered as having paſſed the limits of hypochondriaſis, and put on the character of inſanity. When hypochondriaſis ariſes from diſeaſed viſcera, the erroneous ideas, which preſent themſelves to the mind of the patients, generally concern their own frame. It is not very eaſy to trace theſe erroneous perceptions to the original painful, yet obſcure ſenſations in the body, to which they owe their exiſtence. It is only, indeed, by a long continuance of theſe ſenſations, that they become aſſociated with the ſtrange notions of hypochondriaciſm. "Nothing can be more intereſting," Dr. Crichton remarks, "to a phyſician who is endowed with only a moderate ſhare of the ſpirit of obſervation, than the progreſs of this complaint in a number of patients, eſpecially in regard to its effects on the mind. They always ſtruggle more or leſs in the beginning, with the lowneſs and dejection which affect them; and it is not until many a ſevere conteſt has taken place between their natural good ſenſe, and the involuntary ſuggeſtions which ariſe from the obſcure and painful feelings of their diſeaſed nerves, that a firm belief in the reality of ſuch thoughts gains a full conqueſt over their judgment. A firm belief in any perception never takes place until it has acquired a certain degree of force; and as all impreſſions which ariſe from the viſcera of the abdomen are naturally obſcure, we ſee the reaſon why theſe muſt continue for a great length of time, or be often repeated before they can draw a perſon's attention from the ordinary impreſſions of external objects, which are clear and diſtinct, and before they acquire ſuch a degree of vividneſs as to deſtroy the operations of reaſon." An Inquiry into the Nature and Origin of Mental Derangement, &c. vol. i. p. 202.

Dr. Crichton thus attempts to explain the fact, that the ſource of the mental illuſion generally lies in the abdomen. "Moſt of the objects which ſurround us have been examined by ſeveral of our ſenſes; we have compared the various ſenſations they have yielded, and theſe, therefore, become aſſociated in our minds; ſo that if any external body, thus examined, be again preſented to only one of our ſenſes, the idea of all its various qualities is recalled, and we neceſſarily believe in their reality. The ſources of almoſt all our perceptions, while we are in health, lie in external objects: for the nerves of the external ſenſes are the only ones of our whole frame which convey clear impreſſions to the intellectual part. Hence we acquire a natural habit of aſcribing all ſtrong impreſſions to ſome external cauſe. In caſes, therefore, where the cauſe of the ſenſation cannot be examined, a falſe judgment may eaſily ariſe. The languor and pain and various uneaſy ſenſations, which a hypochondriac feels, naturally withdraw his attention from ſurrounding objects; and as the exerciſe of his judgment is weakened by the ſame circumſtances, he does not examine the unreaſonable ideas with accuracy, when they are firſt preſented to his mind. Painful feelings are aſſociated with melancholy thoughts; and new and uncommon feelings, upon the ſame principle, are aſcribed to ſtrange and uncommon cauſes. The weakneſs, therefore, which a hypochondriac feels in his limbs, makes him imagine they are unable to ſupport him; but if they cannot do ſo, he concludes they muſt bend or break; the idea of fragility, or flexibility, however, is often derived from ſuch ſubſtances as wax and glaſs, and he therefore believes that his limbs are made of ſome kind of ſimilar materials." Loc. cit. p. 208.

In a word, theſe ſingular notions of the hypochondriac may be conſidered as ariſing from a long recurrence of novel and diſtreſſing ſenſations, connected with a morbid ſtate of the nervous ſyſtem in general, and of the mind or ſpirits in particular, which abſorb the attention of the individual to the excluſion of common impreſſions: and as the perturbed and agitated mind converts every obſcure impreſſion on the ſight, for inſtance, into viſions of horrible form, of the reality of which, if the impreſſions continue, it conceives a firm belief; ſo theſe unuſual ſenſations in the interior of the body become the ground-work of falſe and extravagant perceptions.

There is no difficulty in accounting for the ordinary ſuppoſitions of hypochondriacs, that they are affected with certain dangerous or loathſome diſeaſes; when it is recollected, that ſcarcely any organ or portion of the body altogether eſcapes being the ſeat of ſome uneaſineſs or irregularity of function, which, in the watchful anxiety of the patient's mind, and his diſpoſition to deſpondency, at once becomes the object of his attention and evil forebodings. Like *hyſteria* in the female, this diſeaſe aſſumes the form, and mimics the ſymptoms, of almoſt all other diſeaſes. When palpitations of the heart occur, with intermiſſions of the pulſe, tightneſs in the cheſt, pulſation in the abdomen, &c. from over-diſtention of the ſtomach by food or flatulency, the hypochondriac immediately ſuppoſes that hydrothorax, dropſy of the pericardium, aneuriſm of the heart or of the great artery, angina pectoris, or ſome ſuch formidable diſeaſe, with which his reading or enquiries have made him acquainted, is already his lot. If, from ſympathy with the ſame organs, the head is affected with giddineſs, or pain, the eyes occaſionally dim, the viſion double, or otherwiſe incorrect, the ears affected with a ringing noiſe, &c. the notion of ſome diſeaſe fixed in the brain immediately occurs, which is at one time ſuppoſed to be hydrocephalus, at another an abſceſs in the brain, or ſome morbid adheſion among the membranes, &c. And in like manner, every other organ of the body is in its turn believed to be the ſeat of ſome fatal and irremediable malady.

While this general diſturbed ſtate of the ſenſations continues, the ſleep is commonly imperfect and interrupted, and every variety of diſtreſſing dreams is excited; ſo that the patients frequently awake ſuddenly, with ſtarting and in great terror, ſuppoſing themſelves haunted by all ſorts of monſters and viſions which imagination can ſuggeſt, and ſuffering much from thoſe oppreſſive feelings, which are comprehended under the denomination of *incubus* or *night-mare*. It is not difficult to conceive, that ſome of the fancies, entertained by hypochondriacs, may have originated in theſe dreams, and become rivetted by repetition, from the recurrence of the peculiar ſenſations which called forth the trains of ideas. See Dreams.

It would be ſuperfluous to attempt to illuſtrate all the various abſurd notions which hypochondriacs have in different inſtances entertained, and the ſtrange reſolutions which they have formed in conſequence; many examples of them are detailed by writers on mental derangement, of which one or two may ſuffice. Tulpius relates, that a painter of conſiderable reputation imagined that all his bones were become ſo ſoft and pliant, that they muſt neceſſarily bend like wax, if he attempted to walk, or if any hard body was ſtruck againſt them. In conformity with the fears which ſuch a notion inſpired, he kept his bed during the whole winter, imagining that if he aroſe, his legs would be compreſſed by his own weight into a lump like clay or wax. (See his Obſ. Med. lib. i. cap. 18.) Marcus Donatus has ſtated, that a baker of Ferrara believed he was made of butter, and on that account would not approach the oven, leſt he ſhould melt. (Hiſt. Med. Rar. lib. ii. cap. 1.) The ſame author has recorded the caſe of a perſon, of the name of Vincentinus, who believed that he was of ſuch an enormous ſize, that he could not go through the door of his apartment. His phyſician gave orders that he ſhould be forcibly led through it, which was done accordingly, but not without a fatal effect; for Vincentinus cried out, as he was forced along, that the fleſh was torn from his bones, and that his limbs were broken off, of which terrible impreſſion he died in a few days, accuſing thoſe who conducted him of being his murderers. (ibid.) Dr. Darwin had witneſſed twice an imaginary itch, and twice an imaginary diabetes, when there was not the leaſt veſtige of either of thoſe diſeaſes, and once an imaginary deafneſs, where the patient heard perfectly well; and an imaginary venereal diſeaſe, when they have only deſerved it, is a very common hallucination among modeſt young men. See Zoonomia, vol. ii. claſs iii. 1. 2.

Although a great majority of hypochondriacal complaints, eſpecially of the ſlighter kind, even when they have continued for a conſiderable time, do not lead to any ſerious reſult; yet there are many inſtances in which the actual ſtate of corporeal diſeaſe is ultimately demonſtrated, by the termination of the ſymptoms in dangerous and fatal maladies; ſuch as apoplexy, palſy, jaundice, dropſy, tympany, and pulmonary conſumption; not to mention the more complete diſeaſes of the intellect, confirmed mania, melancholy, and fatuity, in which they occaſionally end. For although the morbid condition of the abdominal viſcera may be but ſlight in the firſt inſtance, and will yield to the regimen adopted for its removal; yet diſeaſed vaſcular action, when long continued, whether idiopathic or ſympathic, frequently leads to morbid ſtructure, to great congeſtions, and to ſlow inflammation, with adheſions, effuſions of lymph and ſerum, &c. which are the conſequences of the latter. See Whytt on Nervous Diſorders, chap. vi.

Cauſes of Hypochondriaſis.—Some perſons are obviouſly much more liable to hypochondriacal affections than others; and this *prediſpoſition* to the diſeaſe appears to conſiſt in a peculiarity of conſtitution of the nervous ſyſtem, and of the digeſtive organs. This conſtitution is not always to be diſtinguiſhed by external character; but it belongs more particularly to the male ſex, to the advanced periods of life, and to the melancholic temperament: it is commonly original, or diſtinguiſhes the individual from his birth; and is often hereditary, having exiſted in his progenitors; but it may be brought on by diſeaſe, by improper aliment, and certain modes of life. The diſeaſe, however, occaſionally takes place in perſons of the ſanguineous temperament, as we ſhall ſtate immediately. With reſpect to the conſtitution of the digeſtive organs, it is remarked by Dr. Whytt and Dr. Crichton, that this does not conſiſt ſolely in debility; ſince we ſometimes ſee the appetite good, and digeſtion well performed, on the one hand, and, on the other, we often meet with indigeſtion and diſordered ſtates of the ſtomach and bowels, in perſons who have never ſuffered any hypochondriaſis. It is to be conſidered, therefore, as a peculiar ſenſibility of the nerves of theſe parts, which are readily put into an unnatural or depraved ſtate of feeling.

The *exciting cauſes* are ſuch circumſtances as tend to augment or produce this derangement of the chylopoëtic viſcera, and of the general ſtate of the nervous power. Among theſe we may enumerate great watching; exceſſive fatigue; anxious purſuit of buſineſs; a ſedentary life; intenſe application to ſtudy; exceſs in venery; all the depreſſing paſſions, however produced, as grief, anxiety, and fear; general repletion in reſpect to food, or the uſe of improper diet; intermitting and remitting fevers. To theſe moſt writers on the ſubject have added, the prevalence of a gouty humour, or the exiſtence of atonic, miſplaced or retrocedent gout; the receſſion of certain cutaneous eruptions; and the retention and ſuppreſſion of accuſtomed evacuations, as the catamenia and hæmorrhoids.

The former of theſe cauſes invariably influence the digeſtive organs, deſtroy the appetite for food, and render the ſtomach incapable of converting that which is taken into nutriment; hence the load and oppreſſion after eating, the torpor, ſleepleſsneſs, &c. which enſue. At the ſame time an extreme mobility of the nervous ſyſtem is induced, eſpecially by exhauſtion, from watching, hard ſtudy, or any other continued and anxious purſuit, or where there is any ſevere depreſſing emotion of mind. Theſe cauſes, therefore, at once give riſe to that diſturbed ſtate of the nervous ſyſtem which takes the alarm at every diſagreeable or unuſual ſenſation, and to that derangement of the organs of digeſtion, which, from their peculiar and univerſal ſympathy with every other part of the body, tends to multiply thoſe morbid ſenſations. Hoffmann remarks, that intenſe ſtudy operates in an additional way, in conſequence of the poſture of the ſtudent; who, in leaning forwards immediately after the ſtomach is diſtended with food, neceſſarily occaſions a preſſure upon the viſcera of the abdomen, and eſpecially upon the meſeraic veins ; whence the circulation through the liver is impeded, and conſequently congeſtion muſt take place in the various organs of that cavity. (Syſt. Med. Ration. tom. 1. lib ii. cap. 10.) This diſeaſe, therefore, has been obſerved to be particularly frequent in literary men. Theſe congeſtions have, in fact, been found to exiſt in ſuch caſes. Dr. Whytt ſays, "in the bodies of thoſe who have died of the hypochondriac diſeaſe, the meſeraic and other veins which meet to form the *vena portarum* (the great veſſel which ſupplies the liver), have been often found greatly diſtended with blood. But," he adds, "this diſtenſion of thoſe veins, if any thing preternatural, was probably only a conſequence of ſome obſtruction of the liver, and not to be reckoned, as it has been by ſome authors, the cauſe of that diſtemper." (Loc. cit. chap. 5.) Obſtruction by direct preſſure on the *vena portæ* muſt occaſion the ſame effects on the other abdominal viſcera as obſtruction in the liver itſelf ; and theſe effects, Dr. Whytt alleges, are occaſioned "by hindering the free circulation of the fluids through theſe parts, by affecting their nerves with an uneaſy ſenſation, and by preventing digeſtion ; in the liver and ſpleen, by impeding the ſecretion of bile, and, by their weight, occaſioning a diſagreeable ſenſation, not only in theſe, but in the neighbouring parts by ſympathy ; in the meſentery, by preventing the further preparation of the chyle, and its courſe towards the thoracic duct ; in the uterus and ovaria, by diſturbing the functions of theſe parts, and by conſent affecting the ſtomach and bowels."

The latter cauſes above-mentioned, eſpecially the previous occurrence of intermitting and remitting fevers, may give riſe to hypochondriaſis, by their well-known influence on the abdominal viſcera, eſpecially the liver and ſpleen, which they often leave in an enlarged, indurated, or ſcirrhous ſtate ; from which the reſt of the adjoining organs will be diſordered in the way juſt ſtated. The obſervation, that wandering gout, as it has been called, gives riſe to theſe nervous derangements is as old as Aretæus ; and Muſgrave, Whytt, and others among the moderns, have borne teſtimony to the correctneſs of the obſervation. It is, however, only an hypothetical expreſſion of the fact, that when a regular fit of gout has occurred, theſe local and varying complaints have for a time diſappeared ; but affords no juſt grounds for the ſuppoſition of a morbid humour afloat in the ſyſtem. (See GOUT and HUMORAL *Pathology*.) And in the ſame manner, the relief of hypochondriacal ſymptoms, on the appearance of certain puſtular, ſcurfy, or other cutaneous eruptions, has been deemed a further proof that complaints of this kind proceed from ſome morbid humour in the blood ; a notion which we have endeavoured to refute in the articles juſt referred to. See Whytt, loc. cit. Muſgrave de Arthritide Anomala, cap. 19.

With reſpect to the *proximate cauſe,* or the eſſential conſtituent part of the diſeaſe, almoſt all writers have agreed in referring it to a morbid condition of the chylopoëtic and other abdominal viſcera, as we learn from the following enumeration by Dr. Whytt. "Many authors," he obſerves, "have aſcribed this diſorder in men to obſtructions in the ſpleen, liver, and meſentery. Highmore to a vitiated conſtitution of the ſtomach. (Exercit. de paſſione hyſter. et affect. hypochond.) Willis to an indiſpoſition of the brain and nerves, or to a fault of the ſpirits. Etmüller, who confounds the hypochondriac diſeaſe, when in a higher degree, with the ſcurvy, has written a diſſertation to prove that its ſeat is not in the ſpleen, but in the inteſtines, eſpecially in that part of the *colon* which lies in the left hypochondre, in which the excrements often ſtagnate, and where much wind is pent up. (Opera. p. 1820.) Sydenham aſcribes the ſame diſtemper to an ataxy or confuſion of the ſpirits. (Epiſt. ad. D. Cole.) Maudeville to a diſordered chylification, and a deficiency or paucity of the ſpirits. (Treatiſe on the hypochond. and hyſter. Paſſions, Dial. 1. and 2.) Juncker makes the *cauſa proxima* of the hypochondriac affection to conſiſt in an obſtructed motion of the blood in the *vena portarum* and viſcera connected with it. (Conſpectus Medicinæ, p. 186.) Boerhaave derives it from an atrabiliary humour lodging in the pancreas, ſpleen, ſtomach, and neighbouring organs. (Aphoriſm 1098.) Hoffmann from a perverted periſtaltic motion of the ſtomach and inteſtines. (Syſt. Med. Rat. tom. iii. p. 3. cap. 5.) And, laſtly, Dr. Cheyne is of opinion, that all great nervous diſorders proceed from ſome glandular obſtruction in the ſtomach, bowels, liver, ſpleen, meſentery, or other organs of the lower belly. (Engliſh Malady, part ii. cap. 7.)"

It may be obſerved, then, that the obſervations of phyſicians from early times have nearly coincided, in referring the ſeat of the diſeaſed action, upon which the ſymptoms of hypochondriaſis depend, to the viſcera of the abdomen ; that the very appellation of the diſeaſe is deduced from ſuch obſervations ; that the uneaſy ſenſations of patients, under this diſeaſe, are principally aſcribed to the ſame part of the body ; and that the diſeaſe often terminates in actual morbid ſtructure of the organs there contained. The manner in which diſeaſe in theſe organs may give riſe to the ſingular morbid ſenſations in diſtant organs, has been briefly touched upon above ; and thoſe who wiſh for farther illuſtration, in regard to the wonderful and widely extended ſympathy, which obtains between the alimentary canal and almoſt the whole ſyſtem, will be gratified by the peruſal of the firſt chapter of Dr. Whytt's treatiſe, ſo often referred to in this article. (See alſo SYMPATHY.) A very able and experienced teacher in London infers from theſe facts, which opinion, he alleges, is corroborated by the ſuperior ſucceſs of a particular mode of treatment, "that the proximate cauſe of hypochondriaſis, in a curative view, conſiſts in a ſluggiſh and irregular ſtate of the hepatic function." Dr. Curry's Syllabus of Lectures at Guy's Hoſpital, p. 199.

Diagnoſis.—There is ſome difficulty in drawing a preciſe line of diſtinction between hypochondriaſis, on the one hand, and *dyſpepſia* (indigeſtion), *hyſteria*, and *melancholia*, on the other. This ariſes partly from the circumſtance, that theſe diſeaſes have all ſeveral ſymptoms in common ; that hypochondriaſis is often combined with one or other of them ; and that they ſometimes reciprocally paſs into each other. There are few caſes of hypochondriaſis in which ſome degree of dyſpepſia is not preſent ; but Dr. Cullen has pointed out a ſtriking difference in the diſeaſe, as it occurs in two different temperaments, or ſtates of the conſtitution : firſt, as it occurs in *young* perſons of both ſexes, in men of a *ſanguine* temperament, and of a lax and flaccid habit ; and, ſecondly, as it occurs in *elderly* perſons of both ſexes, of a *melancholic* temperament, and of a firm and rigid habit. "Theſe two different caſes of the combination of vapours and dyſpepſia," he ſays, "I conſider as two diſtinct diſeaſes, to be diſtinguiſhed chiefly by the temperament prevailing in the perſons affected. As the dyſpepſia of ſanguine temperaments is often without vapours ; and as the vapours, when joined with dyſpepſia in ſuch temperaments, may be conſidered as perhaps always a ſymptom of the affection of the ſtomach, ſo to this combination of dyſpepſia and vapours, I would ſtill apply the appellation of *dyſpepſia*," &c. "But the combination of dyſpepſia and vapours in melancholic temperaments, as the vapours, or the turn of mind peculiar to the temperament, are eſſential circumſtances of the diſeaſe ; and as this turn of mind is often with few or only ſlight ſymptoms of dyſpepſia, and even though the latter be attending, as they ſeem to be rather the effects of the general temperament than of any primary or topical affection of the ſtomach, I conſider this combination as a very different diſeaſe from the former, and would apply to it ſtrictly the appellation of hypochondriaſis." Dr. Cullen farther remarks, "I believe the affection of the mind is commonly different in the two diſeaſes; in dyſpepſia it is often languor and timidity only, eaſily diſpelled; while in hypochondriaſis it is generally the gloomy and rivetted apprehenſion of evil. The two diſeaſes are alſo diſtinguiſhed by ſome other circumſtances. Dyſpepſia, as I have ſaid, is often a ſymptomatic affection, while hypochondriaſis is, perhaps, always a primary and idiopathic diſeaſe. As debility may be induced by many different cauſes, dyſpepſia is a frequent diſeaſe, while hypochondriaſis, depending upon a peculiar temperament, is more rare." Cullen, Firſt Lines, par. 1227 and 1231.

Moſt of the older writers conſider *hyſterical* and *hypochondriacal* affections as eſſentially the ſame, differing no more from each other than as the frame of the female ſex, in which *hyſteria* moſt commonly occurs, is more delicate than that of the male, which is moſt liable to hypochondriaſis; or inaſmuch as the *uterus* is ſuppoſed to be the ſeat of the diſeaſe in the one caſe, while the liver, ſpleen, or ſome contiguous viſcus, is believed to be chiefly deranged in the other. The intelligent phyſician, Fred. Hoffmann, ſeems to have been one of the firſt to point out the difference of the two diſeaſes, in reſpect to their ſymptoms, cauſes, and termination. (Med. Rat. Syſt. tom. iii. p. 4. cap. 5. § 5 & 6.) There is this obvious difference between hyſteria and the diſeaſe in queſtion, in regard to the ſtate of the ſpirits, to wit, while in hypochondriaſis theſe are always in ſome degree low, inſpiring the patient with a greater or leſs dread and apprehenſion with reſpect to the ſtate of his bodily health; no perſons, on the contrary, have a greater flow of high ſpirits than hyſterical patients often exhibit; and the ſuddenneſs with which the ſymptoms change from one claſs to an oppoſite one, without any evident cauſe, or on the ſlighteſt imaginable, is one of the moſt remarkable features of the hyſterical diſeaſe, not to mention the peculiar convulſive paroxyſms, the *globus*, &c. which very frequently accompany the latter. See HYSTERIA.

With regard to the diſtinction between hypochondriaſis and *melancholy*, an ambiguity has ariſen, not only from the one occaſionally degenerating into the other, but from the difference of opinion among medical men, as to the uſe of the terms. The generality of writers agree in confining the term hypochondriaſis to thoſe inſtances of dejection of ſpirits and gloomy apprehenſions, which relate excluſively to the perſonal bodily health of the patient, while they appropriate the term melancholy to thoſe caſes in which the deſpondency and anxiety are fixed upon external relations, as the ſuppoſed loſs of friends, the imaginary influence of calumny, perſecution, &c. In the ſtate of melancholy, too, the digeſtion is often not impaired, whereas indigeſtion almoſt invariably accompanies hypochondriaſis; and it may be added, that in hypochondriaſis the indigeſtion precedes this ſorrowful ſtate of the mind; whereas, in melancholia, when idiopathic, the ſtate of the mind precedes, and is in a great meaſure unconnected with the indigeſtion. (Sims, in Memoirs of Med Society of Lond. vol. v. p. 393.) Dr. Crichton has expreſſed an opinion, that it is of little utility to confine our diagnoſtic obſervations to the nature of the erroneous ideas, and he includes a much wider range in his notion of hypochondriaſis. Nevertheleſs he ſubſcribes in ſome meaſure to the diſtinctions above made, in admitting, that "when hypochondriaſis ariſes *primarily from diſeaſed viſcera*, the erroneous ideas, which preſent themſelves to the mind, generally concern their own frame; but when it has *primarily* ariſen *from melancholia*, then the morbid ideas are for the moſt part unnatural, or at leaſt unreaſonable fancies, either concerning other people, or their own worldly affairs." (Vol. i. p. 201.) Theſe diſtinctions are all that are requiſite with a practical view, and it is immaterial by what name we deſignate them, provided we avoid the confuſion which an undefined acceptation of ordinary terms muſt occaſion.

Cure of Hypochondriaſis—The method of treatment, required for the removal of hypochondriaſis, muſt neceſſarily vary in different caſes, according to the age, temperament, and particular ſymptoms of different individuals; and the attention of the phyſician muſt be directed more or leſs to the bodily or to the mental indiſpoſition, accordingly as the one or the other is found to predominate. In all caſes, indeed, theſe two indications muſt principally be kept in view; 1. To correct the particular dyſpeptic or other morbid ſtate of the alimentary canal, and of the organs more immediately connected with it; and 2. To occupy the mind with a variety of intereſting impreſſions, connected by a natural aſſociation, and thus gradually to weaken and deſtroy the morbid concatenation of ideas which had taken place.

So far as the bodily health is concerned, and eſpecially that of the ſtomach, it might ſeem neceſſary only to have recourſe to the uſual remedies for *indigeſtion*; and that practice has generally been carried on with little diſtinction; but Dr. Cullen has juſtly pointed out ſome diſtinction which is to be made. Where the ſymptoms of indigeſtion are particularly urgent, then the ſame means muſt be reſorted to for their relief, as in caſes of ſimple dyſpepſia. Thus, where exceſs of acidity, which, from the ſlow evacuation of the ſtomach in melancholic temperaments, often ariſes to a high degree in hypochondriaſis, occurs, it muſt be obviated and corrected with the utmoſt care, by the uſe of the ſeveral antacids, and other means adapted to that purpoſe. (See INDIGESTION.) In like manner, the diſtreſs ariſing from flatulency, heartburn, coſtiveneſs, &c., may be alleviated by the appropriate means. (See the ſame article; alſo CARDIALGIA, FLATULENCE, and CONSTIPATION.) The point in regard to which Dr. Cullen ſuggeſts an important diſtinction in the treatment of hypochondriaſis and ſimple dyſpepſia in ſanguine habits, relates to the uſe of corroborant medicines, to reſtore the tone of the ſtomach. "In dyſpepſia," he ſays, "the chief remedies are the tonic medicines, which to me ſeem neither neceſſary nor ſafe in hypochondriaſis; for in this there is not a loſs of tone, but a want of activity that is to be remedied." (Firſt Lines, 1239.) And he ſuggeſts, that a practice directly oppoſite to that employed in the caſe of dyſpepſia is often to be followed. Cold bathing, he obſerves, is often highly uſeful to the dyſpeptic, and as a general ſtimulant, may ſometimes ſeem uſeful to the hypochondriac; but it is not commonly ſo to the latter; while, on the other hand, warm bathing, hurtful to the dyſpeptic, is often extremely uſeful to the hypochondriac. Another inſtance, he ſays, of a contrary practice neceſſary in the two diſeaſes, and illuſtrating their reſpective natures, is, that the drinking tea and coffee is always hurtful to the dyſpeptic, but is commonly extremely uſeful to the hypochondriac. Theſe obſervations, however, admit of many exceptions. Chalybeate mineral waters have commonly been employed in hypochondriaſis, and ſeemingly with ſucceſs. But this, Dr. Cullen juſtly ſuppoſes, is probably to be imputed to the amuſement and exerciſe uſually accompanying the uſe of theſe waters, rather than to the tonic power of the ſmall quantity of iron which they contain; and that perhaps the elementary water, by favouring the excretions, may have a ſhare in relieving the diſeaſe.

One of the moſt important parts of the medical treatment of hypochondriaſis, however, regards the diminution of that torpor and ſluggiſhneſs, with which the hepatic functions are performed; if this is not accompliſhed, the other remedies, calculated to obviate the ſymptoms of dyſpepſia, will afford but a brief and temporary alleviation of the diſorder. This degree of morbid action in the liver, may be known by attending to the ſtate of the bowels, and of the fæcal evacuations from them; by the various colour and odour of which the deficiency or morbid condition of the bilious ſecretion may be eſtimated. The moſt uſeful treatment conſiſts in maintaining a gentle ſtimulant operation upon the bowels by means of mild mercurial preparations, varying them in point of ſtrength as the torpor of the alimentary canal is greater or leſs.

Exerciſe, as it ſtrengthens the ſyſtem in general, and the chylopoetic viſcera in particular, as it obviates the preſſure upon thoſe viſcera, which a ſedentary and ſtudious habit occaſions, and as it contributes to maintain a free and active circulation through the moſt minute portions of the arterial ſyſtem, and thus ſupports the proper performance of all the functions of ſecretion, (ſee Exercise,) proves a particularly advantageous remedy in hypochondriaſis. But it is not leſs uſeful, perhaps, by its operation on the mind, than by that upon the body, as we ſhall immediately explain.

The management of the mind, in hypochondriacs, has been conſidered by Dr. Cullen as the moſt important part of the treatment, and as often a nice and difficult point. But as it muſt be admitted, that the morbid perceptions, which characterize the diſeaſe, originate actually in corporeal diſturbance; ſo the ſtate of mind muſt be conſidered as a ſymptomatic and ſecondary part of the complaint. Nevertheleſs, as the morbid aſſociations will be ſtrengthened, if not in any way oppoſed, after they have once gained admittance, independently of any increaſe of the corporeal diſeaſe, they ſhould not be treated with neglect. It muſt be conceded, therefore, to Dr. Cullen, that "the firm perſuaſion which generally prevails in ſuch patients, does not allow their feelings to be treated as imaginary, nor their apprehenſion of danger to be conſidered as groundleſs;"—"ſuch patients therefore are not to be treated either by raillery or by reaſoning. It is ſaid to be the manner of hypochondriacs to change often their phyſician, and indeed they often do it conſiſtently; for a phyſician who does not admit the reality of the diſeaſe, cannot be ſuppoſed to take much pains to cure it, or to avert the danger of which he entertains no apprehenſion." Hence Dr. Cullen allows, that if the pious fraud of a placebo be admiſſible at any time, it ſeems to be in treating hypochondriacs, even with the beſt view to their own ſecurity and advantage; for they, ever anxious for relief and fond of medicines, will apply to every ſource where theſe are offered, and, though frequently diſappointed, will ſtill take every new drug that can be propoſed to them; and thus often become the victims of empiriciſm and ignorance. The following obſervations from the able profeſſor above quoted, ſeem to comprehend all that is rational in regard to the mode of occupying the minds of hypochondriacs.

"As it is the nature of man to indulge every preſent emotion, ſo the hypochondriac cheriſhes his fears, and, attentive to every feeling, finds in trifles light as air a ſtrong confirmation of his apprehenſions. His cure therefore depends eſpecially upon the interruption of his attention, or upon its being diverted to other objects than his own feelings. Whatever averſion to application of any kind may appear in hypochondriacs, there is nothing more pernicious to them than abſolute idleneſs, or a vacancy from all earneſt purſuit. It is owing to wealth admitting of indolence, and leading to the purſuit of tranſitory and unſatisfying amuſements, or to that of exhauſting pleaſures only, that the preſent times exhibit to us ſo many inſtances of hypochondriaciſm. The occupations of *buſineſs* ſuitable to their circumſtances and ſituation in life, if attended with neither emotion, anxiety, nor fatigue, are always to be admitted, and perſiſted in by hypochondriacs. But occupations upon which a man's fortune depends, and which are always, therefore, objects of anxiety to melancholic men; and more particularly where ſuch occupations are expoſed to accidental interruptions, diſappointments, and failures, it is from theſe that the hypochondriac is certainly to be withdrawn.

"The hypochondriac who is not neceſſarily, by circumſtances or habits, engaged in buſineſs, is to be withdrawn from his attention to his own feelings by ſome *amuſement*. The various kinds of ſport and hunting, as purſued with ſome ardour, and attended with exerciſe, if not too violent, are amongſt the moſt uſeful. All thoſe amuſements which are in the open air, joined with moderate exerciſe, and requiring ſome dexterity, are generally of uſe. Within doors, company which engages attention, which is willingly yielded to, and is, at the ſame time, of a cheerful kind, will be always found of great ſervice. Play, in which ſome ſkill is required, and where the ſtake is not an object of much anxiety, if not too long protracted, may be often admitted. In dyſpeptics, however, gaming, liable to ſudden and conſiderable emotions, is dangerous; and the long continuance of it, with night-watching, is violently debilitating. But in melancholics, who commonly excel in ſkill, and are leſs ſuſceptible of violent emotions, it is more admiſſible, and is often the only amuſement that can engage them. Muſic, to a nice ear, is a hazardous amuſement, as long attention to it is very fatiguing.

"It frequently happens, that amuſements of every kind are rejected by hypochondriacs; and in that caſe, *mechanical means* of interrupting thought are the remedies to be ſought for. Such is to be found in briſk exerciſe, which requires ſome attention in the conduct of it. Walking is ſeldom of this kind, though, as gratifying to the reſtleſſneſs of hypochondriacs, it has ſometimes been found uſeful. The required interruption of thought is beſt obtained by riding on horſeback, or in driving a carriage of any kind. The exerciſe of ſailing, except it be in an open boat, engaging ſome attention, does very little ſervice. Exerciſe in an eaſy carriage, in the direction of which the traveller takes no part, unleſs it be upon rough roads, or driven pretty quickly, and with long continuance, is of little advantage.

"Whatever exerciſe may be employed, it will be moſt effectual when employed in the purſuit of a journey; firſt, becauſe it withdraws a perſon from many objects of uneaſineſs and care, which might preſent themſelves at home; ſecondly, as it engages in more conſtant exerciſe, and in a greater degree of it than is commonly taken in airings about home; and, laſtly, as it is conſtantly preſenting new objects which call forth a perſon's attention." Cullen, loc. cit.

We muſt obſerve, however, in concluſion, that the exerciſes, thus recommended, operate perhaps equally by reſtoring the corporeal health, as by abſtracting the attention of the mind from its erroneous perceptions. Upon the ſame principle, *reaſoning* with hypochondriacs is commonly uſeleſs; for, as Dr. Crichton remarks, although the ſingular notions which they entertain may now and then be eradicated from their minds by means of a little art, there is ſeldom any real good to be derived from this, except the diſeaſe be at the ſame time cured; for if diſeaſed impreſſions continue to ariſe in the mind from the diſordered viſcera, other illuſive notions will ſpring up as one ſet is deſtroyed. And we have already alluded to a fatal inſtance of a forcible attempt to convince a hypochondriac of his error by a mechanical proof.

HYPOCHOPHOSIS, a ſlight degree of deafneſs.

HYPOCHYMA, or Hypochysis, from ὑπο, *under*, and χυω, *to pour*, in *Surgery*, the diſeaſe uſually denominated a cataract, which was ſuppoſed to proceed from a humour running under the cryſtalline lens. See Cataract.

HYPOCISTIS, in *Botany*, Tournef. t. 477. See Cytinus.

Hypocistis, Ὑποκιστις, formed of ὑπο, *under*, and κιστος, *ciſtus*, in *Medicine*, a juice uſed in the compoſition of theriaca, &c.

The hypociſtis is the juice of a ſhoot or excreſcence of the ſame name, ſprouting out from the foot of a kind of ciſtus, or rock-roſe, which is called *ledon* or *ladanifera*; common enough in the hot countries.

The ſhoot grows about three or four inches high; and one, two, or three inches thick; and is ſomewhat bigger at top than at bottom; and is ſoft, ſucculent, of a yellowiſh colour, and ſurrounded from ſpace to ſpace with a ſort of rings, or browniſh knots. It bears a number of little bell-ſhaped flowers, but no leaves.

When gathered, they pound it in a mortar, and expreſs the juice: that done, they evaporate it on the fire till it come to the conſiſtence of a hard blackiſh extract, much like Spaniſh liquorice: then they make it up into little maſſes for carriage. It is a mild aſtringent, of no particular ſmell or flavour, and recommended for ſtopping fluxes of the belly, vomitings, and hæmorrhages; though anciently much more than at preſent. It is alſo an ingredient in ſome unguents.

It is ſometimes uſed as a ſubſtitute to acacia.—Dr. Quincy ſays, it is the more powerful aſtringent of the two.

HYPOCRANIUM, in *Surgery*, ſignifies an abſceſs under the cranium, between the bone and dura mater. The term is derived from ὑπο, *under*, and κρανιον, *the ſkull*.

HYPOCRAS. See Hippocras.

HYPOCRATERIFORMIS, *Saucer-ſhaped*, in *Botany*, the name given by Mr. Tournefort to a peculiar ſort of flowers of plants, of the general order of the infundibuliform, but not ſo deep and narrow at the mouth as thoſe ſimply ſo called, but expanded into the figure of a ſaucer.

HYPOCRINE, or Hippocrene. See Helicon.

HYPOCRISY, ὑποκρισις, in *Ethics*, denotes diſſimulation with regard to the moral or religious character.

HYPODIACONORUM Festum. See Calendarium *feſtum*.

HYPO-DIEZEUXIS, in *Muſic*, according to Bacchius, ſen. is the interval of a fifth between two tetrachords ſeparated by a disjunction, and further by a third intermediate tetrachord. Thus there is a hypo-diezeuxis between the tetrachords hypaton and diezeumenon, and between the tetrachords ſynnemenon and hyperbolæon. See Tetrachord.

HYPO-DORIAN, the loweſt of all the modes of *Ancient Muſic*. It has its fundamental a fourth below that of the Dorian mode. It is ſaid to have been invented by Philoxenus. This mode is grand, but cheerful: uniting ſweetneſs with majeſty.

HYPODROME. See Hippodrome.

HYPOESTES, in *Botany*, a name given by Dr. Solander, who meant to write it *Hypoeſthes*, from ὑποεσθης, *an inner veſtment or covering*, expreſſive of the minute membranous internal calyx. Brown. Prodr. Nov. Holl. v. 1. 474. Claſs and order, *Diandria Monogynia*. Nat. Ord. *Perſonatæ*, Linn. *Acanthi*, Juſſ.

Eſſ. Ch. Calyx in five equal ſegments, contained in a four-cleft three-flowered involucrum. Corolla two-lipped. Seeds two in each cell, with an appendage at their baſe. Partition attached to the valves. Anthers of one cell.

A genus ſeparated from *Juſticia* by Solander and Brown, conſiſting of cauleſcent herbs or ſhrubs. The involucrums, naturally three-flowered, though ſometimes, by abortion, ſingle-flowered, grow oppoſite, in axillary or terminal ſpikes, accompanied by leafy bracteas. The flowers are either purple or white. Within the proper calyx is a ſmall white membranous integument.

Examples of this genus are found in the firſt ſection of Willdenow's *Juſticiæ*, as *J. faſtuoſa*, Linn. Mant. 172. Vahl. Symb. v. 1. t. 1. ſent by Koenig from Tranquebar. To this is nearly allied *J. Forſkalei* of Vahl.

Mr. Brown found a new ſpecies in the tropical part of New Holland, which he denominates *H. floribunda*.

HYPOGÆUM, ὑπογειον, formed of ὑπο, *under*, and γαια, *earth*, in the *Ancient Architecture*, is a name common to all the parts of a building that are under ground; as the cellar, butteries, and the like places.

The term hypogæum was uſed by the Greeks and Romans for ſubterraneous tombs in which they buried their dead.

Hypogæum, Ὑπογαιον, in *Aſtrology*, is a name given to the celeſtial houſes which are below the horizon; and eſpecially the *imum cæli*, or bottom of heaven.

HYPOGASTRIC Artery, in *Anatomy*, a name under which the internal iliac is often deſcribed, as the correſponding vein is alſo called the hypogaſtric. More commonly, however, the name is given to thoſe continuations of the trunks of the internal iliacs, which aſcend along the ſides of the bladder to the umbilicus, where they take the name of umbilical. They go to the placenta. See Embryo for their deſcription.

Hypogastric *Region*, is the lower portion of the abdominal cavity. See Abdomen.

HYPOGASTRIUM is the ſame with the Hypogastric *region*; which ſee.

HYPOGASTROCELE, from ὑπογαστριον, and κηλη, a *tumour*, in *Surgery*, a ventral hernia. See Hernia.

HYPOGLOSSUM, in *Botany*. See Ruscus.

HYPOGLOSSUS, in *Anatomy*, from ὑπο, *under*, and γλωσσα, the *tongue*, the nerve of the ninth pair, ſo called from its ſituation under the tongue.

HYPOGLOTTIS, or Hypoglossis, compoſed of ὑπο, *under*, and γλωττα, *tongue*, is a name given to two glands of the tongue.

There are four large glands of the tongue; two of them called hypoglottides, ſituated under it, near the venæ ranulares; one on each ſide of the tongue. They ſerve to filtrate a kind of ſerous matter, of the nature of ſaliva, which they diſcharge into the mouth by little ducts near the gums.

Hypoglottis, or *Hypogloſſis*, in *Medicine*, denotes an inflammation or ulceration under the tongue; called alſo *ranula*.

HYPO-IASTIAN, in *Muſic*. See Hypo-ionian.

HYPO-IONIAN, the ſecond of the modes of *Ancient Muſic* from the loweſt: Euclid calls it hypo-iaſtian, and grave Phrygian. Its fundamental is a fourth below the Ionian mode.

HYPOLÆNA, in *Botany*, from ὑπο, *under*, and χλαινα, *a cloak*, or *covering*, alluding to the ſhort integument which inveſts the baſe of the fruit. Brown. Prodr. Nov. Holl. v. 1.

v. 1. 251. Claſs and order, *Diœcia Triandria.* Nat. Ord. *Calamariæ*, Linn. *Reſtiaceæ*, Brown.

Eſſ. Ch. Male, Cal. ſcales of a catkin. Perianth a huſk of ſix leaves. Stamens three. Anthers ſimple, peltate.

Female, Cal. ſcales numerous, imbricated. Perianth a huſk of ſix leaves, terminal, ſolitary. Style in two or three diviſions, deciduous. Nut bony, naked, ſingle-ſeeded, longer than the perianth.

A genus eſtabliſhed by Mr. Brown, who obſerves, that it has the habit as well as the male flowers, of *Reſtio*, for which reaſons, as well as on account of the want of a lobed external appendage to the perianth, he has ſeparated it from the *Willdenovia* of Thunberg, whoſe fruit is ſimilar, but its male inforeſcence (not well deſcribed by Thunberg), and its habit are different.

The ſpecies are,

1. H. *faſtigiata.* Stems branched, round, ſtriated, aſh-coloured; their branches ſomewhat level-topped. Glumes of the perianth at length oval.

2. H. *exſulca.* Stems branched, round, ſmooth; their branches alternate, quite ſimple. Glumes of the perianth roundiſh.

Both grow in various of the cooler parts of New Holland.

HYPOLEPIS, from ὑπο, *under*, and λεπις, *a ſcale.* Perſoon Syn. v. 2. 598. The ſame plant as *Phelypæa ſanguinea* of Thunberg and Willdenow. See PHELYPÆA.

HYPO-LYDIAN, the fifth mode of the *Ancient Muſic*, beginning from the loweſt. Euclid calls it hypo-iaſtian and hypo-phrygian. Its fundamental is a fourth below the Lydian. Euclid diſtinguiſhes two hypo-lydian modes; the acute, which is that of this article, and the grave, which is the ſame as the hypo-æolian.

The hypo-lydian mode was proper for funeral chants, ſublime and divine meditations: its invention is attributed by ſome to Polymneſtes of Colophon, by others to Damon of Athens.

HYPOLYTRUM, in *Botany*, from ὑπο, *under*, and ελυτρον, *a cover*, or *ſcale*, on account, as we preſume, of the internal ſcaly covering of the ſeeds. Perſoon Syn. v. 1. 70. Claſs and order, *Triandria Monogynia.* Nat. Ord. *Calamariæ*, Linn. *Cyperoideæ*, Juſſ.

Eſſ. Ch. "Scales imbricated every way. Seeds with an internal cover, reſembling a glume of three or four valves. Stamens two or three. Stigmas one or two." *Perſoon.*

This is ſuſpected to be the ſame genus with *Hypælyptum*, (ſee that article,) and even their names are perhaps originally the ſame. Perſoon defines three ſpecies, H. *latifolium ſenegalenſe*, and *gracile*, all communicated by M. Richard. Their definitions, however, do not accord with our above-mentioned ſpecies of *Hypælyptum.*

HYPO-MIXO-LYDIAN, a mode added by Guido d'Arezzo to the *Ancient Muſic* of the church: it is properly the plagal of the mixo-lydian mode, and its fundamental is the ſame as that of the Dorian mode.

HYPOMNEMATOGRAPHUS, 'Υπομνηματογραφος, derived from ὑπο, μνημη, *regiſter*, and γραφω, *I write*, in the *Primitive Church*, an officer who attended on the biſhop, and kept a regiſter of his conſecrations.

HYPOMOCHLION, 'Υπομοχλιον, formed of ὑπο, *under*, and μοχλος, *lever*, in *Mechanics*, the fulcrum of a lever, or the point which ſuſtains its preſſure, when employed either in raiſing or lowering bodies.

The hypomochlion is frequently a roller ſet under the lever; or under ſtones, pieces of timber, &c. that they may be the more eaſily liſted up, or removed.

HYPONITIS, in *Botany*, a name given by Dillenius to a genus of plants, called by Tournefort orobanchoides. See MONOTROPA.

HYPONOMOS, in *Surgery*, from ὑπο, *under*, and νομη, *a phagedenic ulcer*, a deep phagedenic ulcer.

HYPOPHORA, 'Υποφορα, in *Rhetoric*, the firſt part of the prolepſis: thus, in the following inſtance: "but ſome men will ſay, how are the dead raiſed, or with what body do they come?" is the *hypophora;* and, *thou fool, that which thou ſoweſt*, &c. is the *anthypophora*, or ſolution of the objection.

HYPOPHORA, in *Surgery*, a deep, fiſtulous ulcer, from ὑποφερομαι, to be carried underneath.

HYPO-PHRYGIAN, one of the modes of *Ancient Muſic*, derived from the Phrygian. Its fundamental was a fourth higher. Euclid ſpeaks ſtill of another hypo-phrygian mode below it; which was called with more accuracy the hypo-ionian mode.

The character of the hypo-phrygian mode was calm, tranquil, and proper to appeaſe the vehemence of the Phrygian. It was ſaid to have been invented by Damon, the friend of Pythias, and the muſic-maſter of Socrates.

HYPOPHTHALMION, from ὑπο, *under*, and ὀφθαλμος, *the eye*, in *Surgery*, denotes a ſwelling, which ſometimes takes place under the eye in caſes of dropſy and cachexy.

HYPOPHTHALMUM, in *Botany*, a name uſed by ſome authors for the *aſter atticus.*

HYPOPHYLLOCARPODENDRON, in *Botany*, Boerhaave. See LEUCADENDRON and PROTEA.

HYPOPHYLLOSPERMOUS PLANTS, formed of ὑπο, *under*, φυλλον, *leaf*, and σπερμα, *ſeed*, are ſuch plants as bear their ſeeds on the back-ſides of their leaves.

HYPOPHYSIS, from ὑπο, *under*, and φυω, *to produce*, an inflammation of the eye, ariſing from a turning of the eye-lid inwards. See TRICHIASIS.

HYPOPIA, from ὑπο, and ωψ, *the eye*, an ecchymoſis juſt under the eye; a black eye.

HYPOPITYS, in *Botany*, Dill. Gen. 7. See MONOTROPA.

HYPOPODIUM, in *Antiquity*, a piece of furniture belonging to the baths; its uſe was to ſet or reſt the feet on, as the name imports.

HYPO-PROSLAMBANOMENOS, in *Muſic*, the name of an additional ſtring or ſound, which Guido is ſaid to have added to the ſcale of the Greeks, a note below proſlambanomenos, anſwering to gammut or G on the firſt line in the baſe. The author of this new ſound expreſſed it by the letter Γ, gamma, of the Greek alphabet, whence the name of gammut was derived. See DIAGRAM.

HYPOPYON, or HYPOPIUM, is a term in *Surgery*, uſually ſignifying an abſceſs under the cornea, in the interior or poſterior chamber of the aqueous humour. The word is compounded of ὑπο, *under*, and πυον, *pus.*

A diſtinction has been drawn by ſome writers between the caſe, where the matter is ſituated in the anterior chamber, and that where it lies in the poſterior one, the latter inſtance being ſometimes named *empyeſis oculi.* But ſince both chambers always have a free communication with each other through the pupil; ſince one chamber can never have much matter in it, without a part gliding into the other; and laſtly, as the matter in either example may be diſcharged through the ſame opening; Richter contends, that the difference in the caſes is not of much importance. Hypopium is generally a conſequence of a violent inflammation of the eye; yet unuſual inſtances do preſent themſelves, in which the diſeaſe comes on quite unpreceded by any degree of ophthalmy. This is ſaid to happen particularly in venereal and ſcrophulous patients. A woman, in the Royal Infirmary of Edinburgh, had a very conſiderable collection of matter in the anterior chamber, accompanied with very little, or no inflammation. The matter altered its form and place according to the poſition of the head, and, during the day, the agitation of the body, produced by walking, mixed the matter with the aqueous humour, and rendered the whole anterior chamber turbid. Wardrop's Eſſays on the Morbid Anatomy of the Human Eye, p. 51.

Hypopium, when it is a conſequence of inflammation, can only proceed from a violent degree of it, and it commonly makes its appearance under the following ſymptoms. The pain is throbbing and acute, and inſtead of being confined to the eye-ball and upper part of the forehead extends as far as the back of the head. All on a ſudden, however, upon the attack of a ſhivering fit, it undergoes a diminution, and it is at this period that the firſt drop of matter generally makes its appearance at the bottom of the anterior chamber, in the form of a ſemilunar whitiſh ſpeck, which, in proportion as the quantity increaſes, gradually becomes larger, ſpreads upwards, covers the pupil, and at length occupies the whole of the anterior chamber. In this ſtate, the cornea exhibits every where a white appearance. The progreſs of the diſeaſe is various. When the caſe is left to take its own courſe, the pain often becomes again exceſſively ſevere, and no alleviation is experienced, till the matter makes its way through the cornea, and eſcapes, together with the aqueous humour, and, in general, a conſiderable portion of the vitreous. The pain immediately abates; but the eye is irrecoverably deſtroyed. In favourable caſes, the matter, with the aid of proper means, is entirely diſperſed. Sometimes it is only partly abſorbed, and a portion continues, either upon the inſide of the cornea, upon the ſurface of the cryſtalline lens, or in the pupil, ſo as to produce either total blindneſs, or a material impairment of viſion.

The matter of hypopium is commonly repreſented to be pus; but Scarpa, the celebrated ſurgeon at Pavia, adopts the opinion, that it is only coagulating lymph, which is effuſed from the highly inflamed choroides and uvea in ſevere ophthalmies affecting the interior of the eye.

While the violence of the inflammation of the eye laſts, the hypopium never fails to enlarge; but as ſoon as this ſtage ceaſes, and the ophthalmy falls into its ſecond period, or that attended with local weakneſs, the matter in the anterior chamber receives no longer any addition, and, from that moment, is diſpoſed to diminiſh. See Scarpa Sulle Malattie degli Occhi.

Surgical writers have recorded curious examples of a periodical ſpecies of hypopium. A man, of a bad habit of body, became blind the firſt fortnight of every month. A yellowiſh matter, which was ſo thick and opaque as to conceal the iris, could always at this time be remarked in the anterior chamber. The conjunctiva was alſo inflamed; but not painful. On the fourteenth day of each month theſe complaints uſed to diſappear, and the ſight to return. (Janin Mémoires ſur l'Œil, p. 412.) Another perſon was deprived of his eye-ſight every morning, and, during the attack, the aqueous humour was always very turbid. The patient at the ſame time regularly ſuffered pain under the ſhort ribs, on the right ſide. The paroxyſm conſtantly terminated on a copious diſcharge of air being made from the alimentary canal. See Richter's Anfangſgründe Band 3. p. 97.

The treatment of hypopium conſiſts either in attempting to diſperſe the matter collected in the anterior or poſterior chamber, or elſe in making an inciſion for its evacuation. Againſt the latter proceeding, as a general one, Scarpa has urged ſeveral weighty conſiderations, as we ſhall preſently notice.

The tendency of an hypopium to diminiſh, as ſoon as the firſt violence of the ophthalmy is over, ſhews, according to Scarpa's judgment, how important it is, in order to check the progreſs of hypopium, to employ the moſt powerful means for ſubduing the firſt ſeverity of the inflammation of the eye. With this view, copious evacuations of blood, both generally and topically, are recommended. When chemoſis prevails, the conjunctiva is to be divided. Mild aperients, bliſters to the nape of the neck, little bags of emollient herbs applied to the eye, and other meaſures for the relief of the firſt ſtage of ſevere ophthalmy, are highly neceſſary. Theſe will be known to have fulfilled the deſired end, by the abatement of the lancinating pains in the eye, the ceſſation of the febrile ſymptoms, the reſtoration of the free motion of the eye, and the hypopium no longer continuing to increaſe. The firſt meaſures have now anſwered every expectation, notwithſtanding the eye-lids and conjunctiva may ſtill be affected with a degree of redneſs. The lower orders of people are frequently ſeen in the ſecond ſtage of acute ophthalmy, going about with an hypopium, and making no complaint whatever of any of the ſerious ſufferings always attendant on the firſt ſtage of acute ophthalmy. It is only at this criſis, or at the termination of the acute ſtage of violent inflammation of the eye, that the hypopium ceaſes to enlarge, and begins to be abſorbed, provided this ſalutary proceſs be not impeded by any wrong plans.

Scarpa remonſtrates againſt making an inciſion in the cornea to let out the matter; a plan which has been commonly taught by ſurgical authors, and which has been extenſively adopted, but which moſt frequently gives riſe to evils worſe than hypopium itſelf, and this, notwithſtanding Richter's advice be followed, not to let out all the matter at once, and not to promote its exit by preſſure or injections. Scarpa aſſures us, that a wound in the lower part of the cornea, how ſmall ſoever it may be, moſt commonly re-produces the ſevere acute ophthalmy, and occaſions a large extravaſation of lymph, or matter in the chambers of the aqueous humour. Beſides, after opening the cornea, the matter, if left to itſelf, would be ſeveral days in becoming entirely diſcharged, during all which time it would keep the edges of the wound aſunder, and make them ſuppurate. In this manner the cut would be changed into an ulcer, through which the aqueous humour would eſcape, and in all probability a fold of the iris be protruded. Even the cryſtalline lens itſelf might fall out. No arguments in favour of the practice can juſtly be drawn from the ſucceſsful reſult of certain caſes, in which the hypopium ſpontaneouſly burſts. Scarpa reminds us that there is a wide difference between the effects of a ſpontaneous opening into a natural or preternatural cavity of the animal body, or of one made with cauſtic, and the conſequences of an opening made with a cutting inſtrument. In the two firſt methods the ſubſequent ſymptoms are conſtantly milder than in the laſt. Beſides, the fact is, that when an hypopium diſcharges itſelf through an ulcerated opening, it not unfrequently happens that not only the aqueous humour eſcapes, but a prolapſus of the iris alſo happens.

Scarpa only admits the utility and neceſſity of dividing the cornea, when the coagulating lymph, or matter of an hypopium, exiſts in very large quantity, and produces ſuch diſtention of the eye, and ſuch urgent ſymptoms, as put the patient's life into danger, beſides menacing a total deſtruction of the affected organ.

It is maintained by this diſtinguiſhed anatomiſt and ſurgeon, that as the fragments of cataracts, when puſhed through the pupil into the anterior chamber of the aqueous humour, are in time abſorbed, there cannot be a doubt that the coagulating lymph, in the example of hypopium, alſo admits of being taken away by the abſorbents, as ſoon as a further extravaſation no longer goes on, and the lymphatics begin to recover their activity. Scarpa, therefore, inculcates that the reſolution of an hypopium is the firſt thing which the ſurgeon ought to aim at in the treatment of the common form of the diſeaſe, and that the beſt method of doing this is to ſubdue the firſt vehemence of the acute ophthalmy by antiphlogiſtic remedies, and mild, emollient, topical applications.

When ſucceſs attends this plan, as it does in the generality of caſes, the hypopium not only ceaſes to enlarge, but even begins to diminiſh, in proportion as the violence of the inflammation abates.

Various remedies have been recommended for the purpoſe of diſperſing the matter collected in the chambers of the aqueous humour. Monſieur Janin was of opinion, that when the matter diſappeared, it was not abſorbed, but exuded through the pores of the cornea. His advice, conſequently, was to endeavour to make the pores of this membrane as pervious as poſſible, by the topical employment of emollient applications, ſo as to promote the eſcape of the matter. For this object he recommends the decoctum malvæ, as exceedingly efficacious. He uſed to bathe the eye ſeveral times a day with this remedy, and in the intervals apply compreſſes wet with the ſame. Janin aſſures us, that even when both the chambers of the eye were full of matter, and the cornea ſeemed likely to burſt, this method proved ſucceſsful, the diſperſion being generally effected in about twelve or fourteen days. There can be no doubt that benefit has been derived from uſing the decoctum malvæ, eſpecially as Pellier and other eminent oculiſts confirm the accounts of the good effects of the application. But we believe with Scarpa, that it is by no means ſuperior to ſeveral other remedies, and that every topical emollient application, if conjoined with ſuch internal antiphlogiſtic treatment as is the moſt proper for repelling the acute ſtage of the ſevere ophthalmy, would be equally beneficial. Mere warm water is productive of quite as much good.

With reſpect to Janin's notion of the matter of the hypopium exuding through the pores of the cornea, the opinion is altogether deſtitute of foundation. Richter rightly maintains, that when an hypopium is diſperſed, there are no appearances in ſupport of ſuch a ſentiment. When blood is extravaſated in the anterior chamber, and afterwards diſappears, it muſt be by abſorption, for if it exuded out of the cornea, it would be viſible upon the ſurface or in the ſubſtance of this tranſparent membrane.

Woolhouſe recommends, for the diſperſion of an hypopium, the application of a poultice, made of the pulp of a roaſted apple, and containing a ſmall proportion of camphor. Guerin adviſes the uſe of a collyrium, compoſed of roſe-water, muriate of ammonia, aloes, and myrrh. Mauchart ſpeaks in favour of warm collyria, and of fomenting the eye.

We decidedly join Richter in thinking, that, as the eye is in general violently inflamed, all irritating applications muſt be hurtful and improper. Little benefit can be expected from any remedies which only come into contact with the eye-lids, as, for inſtance, Woolhouſe's poultice. But, ſuppoſing the applications to act more extenſively, they can hardly operate effectually upon the ſurfaces, by which the matter of the hypopium is ſecreted. Some good, however, will reſult from emollients, and much more may reaſonably be expected from ſuch means as tend to excite and quicken the action of the abſorbents, as, for example, antimonials, aperients, bleeding, bliſters on the nape of the neck, or behind the ears, &c. Theſe remedies not only promote the abſorption of the matter, they likewiſe have a powerful effect in putting a ſtop to the inflammation.

When the firſt ſtage of ſevere ophthalmy has reſiſted the beſt modes of treatment, or when theſe have been practiſed too late, the matter in the chambers of the eye is occaſionally ſo abundant, after the firſt ſtage of the ophthalmy is over, that it continues for a long while to obſtruct viſion. Scarpa has often ſeen patients, eſpecially paupers, who, from negligence or wrong treatment, have remained a great while after the ceſſation of the acute ſtage of an ophthalmy, with the anterior chamber almoſt entirely filled with the glutinous matter of hypopium. When the inflammation ceaſes, theſe perſons are deſcribed as wandering about the ſtreets with great unconcern, and having no affliction but the impairment of their ſight. In this ſecond ſtage of ophthalmy, the hypopium cannot be diſperſed, either ſo ſpeedily, or by exactly the ſame treatment as in the firſt ſtage. In a caſe of this deſcription, Scarpa recommends ſuch remedies as are moſt calculated to invigorate the debilitated tone of the vaſcular ſyſtem of the eye, particularly the lymphatics. The time neceſſary for the completion of this object will vary according to the patient's age and the nature of his conſtitution. The ſurgeon ought carefully to try the degree of irritability in the eye, by introducing, between the globe and the eyelids, a few drops of a collyrium, containing ſome ſulphate of zinc, and mucilage of quince-ſeeds. Should the eye ſeem too ſtrongly ſtimulated by this application, it muſt not be uſed, and little bags, filled with warm mallows and a few grains of camphor, are to be ſubſtituted for it. In the intervals the vapour of the ſpiritus ammoniæ comp. may be applied to the eye. A bliſter is alſo to be put on the nape of the neck. As ſoon as the eye will eaſily bear the vitriolic collyrium, this is to be employed, and its ſtrength may afterwards be gradually increaſed by the addition of a few drops of camphorated ſpirit.

Under ſuch treatment, the hypopium may often be obſerved to diſappear regularly as the chronic ophthalmy is removed.

We are not, however, always to expect to be thus ſucceſsful with regard to hypopium, attended either with the firſt or ſecond ſtage of ophthalmy. When the extravaſated matter ſtrongly diſtends the chambers of the aqueous humour, and the cornea in particular, the moſt ſkilful treatment will ſometimes not avail in preventing ulceration, opacity, and the burſting of the central part of the cornea.

When the ulcerated opening is formed, ſome of the matter of the hypopium eſcapes, and a degree of amendment follows; but the relief is only of ſhort continuance, as a portion of the iris is ſoon protruded through the aperture. If, in an urgent caſe of this kind, the burſting of the cornea were not ſpeedily to happen, the violent ſymptoms depending on the diſtention of the eye-ball would compel the ſurgeon to make an opening in that membrane. This form of the diſeaſe is deſcribed as being exceſſively ſevere, and even attended with danger. The head-ache, and pain in the eye, are frequently ſo grievous as to occaſion delirious ſymptoms. According to Scarpa, the ſurgeon may the more readily make up his mind to practiſe an inciſion, as there is hardly any hope of ſaving the eye.

Should there be any reaſonable chance of reſtoring the tranſparency of the cornea, and of preſerving the eye, Scarpa approves of opening this membrane at its lower part, juſt as is done in the operation of extracting the cataract. But when no ſuch pleaſing proſpect occurs, he thinks the beſt and quickeſt way of relieving the ſevere pain of the hypopium, is to introduce acroſs the central point of the cornea a ſmall biſtoury, ſo as to make a cut about one line and a half broad. The little flap is then to be raiſed with forceps, and removed with one ſtroke of a pair of ſciſſors.

The opening, thus made, will not be liable to cloſe like a ſimple inciſion. The fluid part of the matter immediately eſcapes, and reſt ſome time afterwards, followed, ſooner or later, by the cryſtalline lens and vitreous humour.

As ſoon as the operation is done, a bread and milk poultice is to be applied, and care taken to change it every two hours. At the ſame time ſuch means are indicated as are moſt calculated to avert and diminiſh inflammation, and ſooth nervous irritation. The eye gradually ſuppurates and heals, after which it is generally in a ſtate to admit of the application of an artificial eye. See Eye, *Artificial.*

Although Scarpa ſanctions the performance of an inciſion in the foregoing caſe of hypopium, which is attended with urgent, diſtreſſing, and perilous ſymptoms, he maintains that the practice is highly improper in common inſtances, for reaſons already explained.

With reſpect to cutting out a piece of the centre of the cornea, as is adviſed by Scarpa, we feel perſuaded that nothing can juſtify this proceeding unleſs it is decidedly certain that the eye and eye-ſight are beyond recovery. In any other circumſtance, the inciſion ſhould undoubtedly be executed, as in the extraction of the cataract. See Cataract.

HYPORCHEMA, formed of ὑπορχεομαι, *I accommodate my dancing to a ſinging chorus*, of ὑπο and ορχεομαι, *I dance*, in the *Greek Poetry*, a poem compoſed of divers kinds of verſes, and of different lengths; but always very ſhort, and full of Pyrrhic feet. This poem was compoſed either to be ſung or played with the flute or cithara, but to regulate a dance according to the ſound of voices and inſtruments. Proclus ſays, it was a dance accompanied with a ſong. Theſe were, probably, the origin of the Italian *Ballata;* which ſee.

HYPORISMA, in *Surgery*, an aneuriſm.

HYPOSCENIUM, Ὑποσκηνιον, in *Antiquity*, a partition under the pulpit or logeum of the Greek theatre, appointed for the muſic.

HYPOSCHESIS, Ὑποσχεσις, in *Rhetoric*, the ſame with diviſion.

HYPOSPADIAS, in *Surgery*, from ὑπο, *under*, and σπαω, *I draw*, a Greek name anciently given to a perſon, who had the orifice of the canal of the ureter not directly at the extremity of the gland. Galen applies the ſame name to thoſe, the frenum of whoſe penis is too ſhort, on which account it is bent in erection; this is eaſily remedied by cutting the ligament, and waſhing the wound with warm wine.

HYPOSPATHISMUS, in the *Ancient Surgery*, an operation practiſed, by making three inciſions in the forehead, to the very bone, about two inches long; in order to cut or divide all the veſſels between thoſe inciſions. The deſign of the operation was to prevent defluxions on the eyes.

The word is ὑποσπαθισμος, formed of ὑπο, *under*, and Σπαθη, *ſpatula;* by reaſon after inciſions were made they thruſt a ſpatula all along between the pericranium and the fleſh.

HYPOSPHAGMA, in *Surgery*, a contuſion of the eye, attended with ecchymoſis; a black eye.

HYPOSTAPHYLE, from ὑπο, *under*, and σταφυλη, *the uvula*, a relaxation, or elongation of the uvula.

HYPOSTASIS, Ὑποστασις, compounded of ὑπο, *under*, and ἱστημι, *I ſtand, I exiſt*, q. d. *ſubſiſtentia*, a Greek term, literally ſignifying *ſubſtance*, or *ſubſiſtence;* it is uſed in theology for *perſon*.

Thus ſome have held that there is but one nature or eſſence in God, but three hypoſtaſes, or perſons.

The term hypoſtaſis is of a very ancient ſtanding in the church. St. Cyril repeats it divers times, as alſo the phraſe, *union according to hypoſtaſis*. The firſt time it occurs in all Chriſtian antiquity, is in a letter of that father to Neſtorius, where he uſes it inſtead of προσωπον, the word we commonly render *perſon*, which did not ſeem expreſſive enough. "The philoſophers, ſays St. Cyril, have allowed three hypoſtaſes: they have extended the divinity to three hypoſtaſes: they have even ſometimes uſed the word Trinity: and nothing was wanting but to have admitted the conſubſtantiality of the three hypoſtaſes, to ſhew the unity of the divine nature, excluſive of all triplicity in reſpect of diſtinction of nature, and not to hold it neceſſary to conceive any reſpective inferiority of hypoſtaſes."

This term has occaſioned great diſſentions in the ancient church; firſt among the Greeks, and afterwards alſo among the Latins.

In the council of Nice, hypoſtaſis was defined to denote the ſame with *eſſence*, or *ſubſtance;* ſo that it was hereſy to ſay, that Jeſus Chriſt was of a different hypoſtaſis from the Father; but cuſtom altered its meaning. See Trinity.

Hypostasis, in *Medicine*, the ſediment of the urine, or that thick heavy part of the urine which ſubſides and ſettles at bottom.

HYPOSTATICAL, in *Theology*, is a term uſed in ſpeaking of the myſtery of the incarnation.

Hypoſtatical union, is a phraſe uſed by ſome divines for the union of the human nature with the divine in the perſon of Jeſus Chriſt.

Hypostatical *Principles*, among the *Chemiſts*, and particularly the *Paracelſiſts*, are the three chemical elements, *ſalt*, *ſulphur*, and *mercury;* called alſo the *tria prima*. See Principle and Element.

HYPO-SYNAPHE, in the *Greek Muſic*, the disjunction of two tetrachords ſeparated by the interpoſition of a third tetrachord conjoint with both; ſo that the homologous or relative ſtrings of the two tetrachords, disjoined by the hypoſynaphe, have the interval of five tones, or a minor ſeventh between them. Such are the two hypaton and ſynnemenon tetrachords.

HYPOTHECA, in the *Civil Law*, an obligation, whereby the effects of a debtor are made over to his creditor, to ſecure his debt.

The word comes from the Greek, ὑποθηκη, *a thing ſubject to ſome obligation;* of the verb ὑποτιθεμαι, *ſupponor, I am ſubjected;* of ὑπο, *under*, and τιθημι, *pono, I put*.

As the hypotheca is an engagement procured on purpoſe for the ſecurity of the creditor, various means have been made uſe of to ſecure him the benefit of the convention. The uſe of the pawn or pledge is the moſt ancient, which is almoſt the ſame thing with the hypotheca; all the difference conſiſting in this, that the pledge is put into the creditor's hands; whereas, in a ſimple hypotheca, the thing remained in the poſſeſſion of the debtor. It was found more eaſy and commodious to engage an eſtate by a civil covenant than by an actual delivery: accordingly, the expedient was firſt practiſed among the Greeks; and from them the Romans borrowed both the name and the thing: only the Greeks, the better to prevent frauds, uſed to fix ſome viſible mark on the thing, that the public might know it was hypothecate, or mortgaged by the proprietor; but the Romans, looking on ſuch advertiſements as injurious to the debtor, forbad the uſe of them.

The Roman lawyers diſtinguiſhed four kinds of hypothecas: the *conventional*, which was with the will and conſent of both parties: the *legal*, which was appointed by law, and for that reaſon called *tacit;* the *prætor's pledge*, when by the flight or non-appearing of the debtor, the creditor was put in poſſeſſion of his effects; and the *judiciary,* when the creditor was put in poſſeſſion by virtue of the ſentence of the court.

The *conventional* hypotheca is ſubdivided into *general* and *ſpecial.* The hypotheca is *general,* when all the debtor's effects, both preſent and future, are engaged to the creditor. It is *ſpecial,* when limited to one or more particular things.

For the *tacit* hypotheca, the civilians reckon no leſs than twenty-ſix different ſpecies thereof.

HYPOTHECATE, from the Latin *hypotheca, a pledge;* to hypothecate a ſhip, is to pawn the ſame for neceſſaries: and a maſter may hypothecate either ſhip or goods, for relief, when in diſtreſs at ſea. For he repreſents the traders as well as the owners; and in whoſe hands ſoever a ſhip or goods hypothecated come, they are liable. 1 Salk. 34. 2 Litt. Abr. 95.

HYPOTHENAR, in *Anatomy,* a name given by Winſlow to two muſcles of the little finger. The abductor minimi digiti is his hypothenar minor; and the adductor oſſis metacarpi minimi digiti is the hypothenar metacarpi.

HYPOTHENUSE, or rather Hypotenuse, *ὑποτεινουσα, ſubtendens,* formed of *ὑποτεινω, ſubtendo, I ſubtend,* in *Geometry,* is the longeſt ſide of a right-angled triangle; or that ſide which ſubtends, or is oppoſite to the right angle.

Thus in the triangle A B C (*Plate* VIII. *Geometry, fig.* 100.) the ſide A C, oppoſite to the right angle A B C, is called the hypothenuſe.

It is a celebrated theorem in geometry, that in every rectilinear right-angled triangle, as A B C, the ſquare of the hypothenuſe, A C, is equal to the ſquares of both the other ſides, A B and B C. This is particularly called the Pythagorean theorem, from its inventor Pythagoras, who is ſaid to have ſacrificed a whole hecatomb to the Muſes, in gratitude for the diſcovery. For proof of this theorem, let A D be the ſquare on the hypothenuſe A C, and B G, B I, the two ſquares on the ſides A B and B C: let M B H be parallel to A E, meeting G F, produced, in H; and let E A be produced to meet G H in N, and D C to meet I K in O. If from the equal right angles G A B, C A N, the angle N A B, common to both, be taken away, there will remain N A G = B A C; whence, as the angle G is alſo = A B C, and the ſide A G = A B, the ſides A N and A C (= A E) are likewiſe equal; and therefore the parallelogram A M = the parallelogram A H (being both on equal baſes and between the ſame parallels); which laſt, and conſequently the former, is equal to the ſquare B G, ſtanding on the ſame baſe A B, and between the ſame parallels. By the ſame mode of reaſoning, the parallelogram C M is = the ſquare B I; and, conſequently, the ſquare A D (= A M + C M) = both the ſquares B G and B I. The ſame reaſoning is applicable to circles or any other ſimilar figures; *viz.* that any figure deſcribed on the hypothenuſe is equal to the ſum of the two ſimilar figures deſcribed on both the other two ſides.

HYPOTHESIS, *ὑποθεσις,* formed of *ὑπο, under,* and *θεσις, poſitio, of τιθημι, pono, I put,* in *Logic,* is a propoſition or principle which we ſuppoſe, or take for granted, in order to draw concluſions for the proof of a point in queſtion.

In diſputation, they frequently make falſe hypotheſes, in order to draw their antagoniſts into abſurdities: and even in geometry, truths are often deducible from ſuch falſe hypotheſes.

Every conditional or hypothetical propoſition may be diſtinguiſhed into hypotheſis and theſis: the firſt rehearſes the conditions under which any thing is affirmed or denied; and the latter is the thing itſelf affirmed or denied.

Thus in the propoſition, a triangle is half of a parallelogram, if the baſes and altitudes of the two be equal; the latter part is the hypotheſis, if the baſes, &c. and the former the theſis, a triangle is half a parallelogram.

In ſtrict logic, we are never to paſs from the hypotheſis to the theſis; that is, the principle ſuppoſed muſt be proved to be true, before we require the conſequence to be allowed. Dr. Barrow ſays, that hypotheſes, or poſtulatums, are propoſitions aſſuming or affirming ſome evidently poſſible mode, action, or motion of a thing, and that there is the ſame affinity between hypotheſes and problems, as between axioms and theorems; a problem ſhewing the manner, and demonſtrating the poſſibility of ſome ſtructure, and an hypotheſis aſſuming ſome conſtruction which is manifeſtly poſſible.

Hypothesis, in *Phyſics,* &c. denotes a kind of ſyſtem laid down from our own imagination, by which to account for ſome phenomenon or appearance of nature.

Thus we have hypotheſes to account for the tides, for gravity, for magnetiſm, for the deluge, &c.

The real and ſcientific cauſes of natural things generally lie very deep: obſervation and experiment, the proper means of arriving at them, are in moſt caſes extremely ſlow; and the human mind is very impatient: hence we are frequently driven to feign or invent ſomething that may ſeem like the cauſe, and which is calculated to anſwer the ſeveral phenomena, ſo that it may poſſibly be the true cauſe.

Philoſophers are divided as to the uſe of ſuch fictions or hypotheſes, which are much leſs current now than they were formerly. The lateſt and beſt writers are for excluding hypotheſes, and ſtanding wholly on obſervation and experiment.

Whatever is not deduced from phenomena, ſays ſir Iſaac Newton, is an hypotheſis; and hypotheſes, whether metaphyſical or phyſical, or mechanical, or of occult qualities, have no place in experimental philoſophy. Phil. Nat. Prin. Math. in calce.

The Carteſians take upon them to ſuppoſe what affections in the primary particles of matter they pleaſe; juſt what figures, what magnitudes, what motions, and what ſituations, they find for their purpoſe. They alſo feign certain unſeen, unknown fluids, and endue them with the moſt arbitrary properties; give them a ſubtlety which enables them to pervade the pores of all bodies, and make them agitated with the moſt unaccountable motions. But is not this to ſet aſide the real conſtitution of things, and to ſubſtitute dreams in their place? Truth is ſcarcely attainable even by the ſureſt obſervations; and will fanciful conjectures ever come at it? They who found their ſpeculations on hypotheſes, even though they argue from them regularly, according to the ſtricteſt laws of mechanics, may be ſaid to compoſe an elegant and artful fable; but it is ſtill only a fable. Cotes in Præfat. ad Newton. Princip.

Hypothesis is more particularly applied, in *Aſtronomy,* to the ſeveral ſyſtems of the heavens; or the divers manners wherein different aſtronomers have ſuppoſed the heavenly bodies to be ranged, moved, &c.

The principal hypotheſes are the Ptolemaic, Copernican, and Tychonic.

The Copernican is now become ſo current, and is ſo well warranted by obſervation, that the advocates of it hold it injurious to call it an hypotheſis.

HYPOTHETICAL *Propoſition* and *Syllogiſm.* See Conditional.

HYPOTRACHELION, from *ὑπο, under,* and *τραχηλος, neck,* in *Anatomy,* denotes the lower part of the neck.

Hypotrachelion, in *Architecture,* is uſed for a little frieze in the Tuſcan and Doric capital, between the aſtragal and annulets; called alſo the *colerin* and *gorgerin.*

The word is alſo applied by ſome authors, in a more general ſenſe, to the neck of any column; or that part of the capital thereof below the aſtragal.

HYPOTYPOSIS, or *Imagery*, ʽΥποτυπωσις, formed of the verb ὑποτυποω, *per figuram demonſtro, I ſhow, repreſent, or make any thing to be ſeen*; of ὑπο, *under*, and τυπος, *type, image, reſemblance*, in *Rhetoric*, a figure whereby a thing is deſcribed or painted in ſuch ſtrong and bright colours, that it does not ſeem to be read, or heard, but actually ſeen, or preſented before the eye.

Such is that elegant one of Cicero, wherein he paints the barbarity of Verres: "Ipſe inflammatus ſcelere et furore, in forum venit. Ardebant oculi; toto ex ore crudelitas emanabat. Expectabant omnes quo tandem progreſſurus, aut quidnam acturus eſſet; cum repente hominem corripit, atque in foro medio nudari ac deligari, et virgas expedire jubet. Clamabat ille miſer ſe civem eſſe Romanum, &c." Such is alſo the picture which he has drawn of Catiline, conſiſting of an unaccountable mixture of contrary qualities. Pro. Cœl. c. 5.

The hypotypoſis is frequently uſed by the poets, and particularly Virgil, who abounds in paintings.

This figure is peculiarly ſuited for drawing characters, and often affords the fineſt ornaments in poetry and hiſtory, as well as oratory. It is alſo adapted to move and intereſt different paſſions, according to the nature of the ſubject, and the artful management of the ſpeaker.

HYPOXIS, in *Botany*, from ὑπο, *underneath*, and οξυς, *ſharp*, alluding, as it ſhould ſeem from the generic deſcription, to the tapering and pointed baſe of the capſule. Linn. Gen. 166. Schreb. 221. Willd. Sp. Pl. v. 2. 106. Mart. Mill. Dict. v. 2. Brown. Prodr. Nov. Holl. v. 1. 288. Juſſ. 55. Lamarck. Illuſtr. t. 229. Gærtn. t. 11.—Claſs and order, *Hexandria Monogynia*. Nat. Ord. *Coronariæ*, Linn. *Narciſſi*, Juſſ.

Gen. Ch. *Cal.* none. *Cor.* of one petal, ſuperior, in ſix deep, equal, ovate-oblong, ſpreading ſegments, permanent. *Stam.* Filaments ſix, very ſhort, capillary; anthers oblong, ſhorter than the petals. *Piſt.* Germen inferior, turbinate; ſtyle thread-ſhaped, the length of the ſtamens; ſtigma three-cleft, bluntiſh. *Peric.* Capſule rather oblong, tapering at the baſe, crowned with the permanent corolla, and compoſed of three cells, not burſting. *Seeds* numerous, roundiſh, "with a lateral beak-like projection." *Brown.*

Eſſ. Ch. Corolla ſuperior, permanent, in ſix deep equal ſegments. Capſule tapering at the baſe, without valves. Seeds numerous, with a lateral beak.

Obſ. Mr. Brown, like Gærtner, deſcribes the capſule as not ſeparating into valves, which is true of ſome ſpecies, but the whole have not yet, in his opinion, been ſufficiently examined.

Undoubted ſpecies of *Hypoxis* are,

1. H. *erecta*. Linn. Sp. Pl. 439. Curt. Mag. t. 710. A native of dry paſtures in North America.

2. H. *ſobolifera*. Jacq. Ic. Rar. t. 372. Curt. Mag. t. 711. Found at the Cape of Good Hope.

3. H. *ſerrata*. Linn. Suppl. 197. Jacq. Ic. Rar. t. 369. Curt. Mag. t. 709. Found alſo at the Cape.

Theſe are bulbous herbs, with numerous radical leaves of a lanceolate form, channelled, hairy or ſmooth. Stalks radical, more or leſs corymboſe. Flowers reſembling thoſe of the Engliſh *Ornithogalum luteum*, yellow within, green underneath.

Willdenow enumerates 15 ſpecies in all, ſome of which are ſuſpected to be varieties.

H. *juncea*. Sm. Spicil. 15. t. 16. brought by the late Mr. Fraſer from Carolina, is ſuppoſed to be a ſtarved narrow-leaved variety of the *erecta*, the ſtalks of which are ſingle-flowered.

HYPOZOMA, in *Anatomy*, a name given to ſuch membranes as ſeparate two cavities.

In this ſenſe the mediaſtinum is an hypozoma.

HYPPASUS of Metapontus, or Crotonia, in *Biography*, is enumerated among the diſciples of Pythagoras, late in his life. Theon of Smyrna informs us, that Laſus and Hyppaſus ſeeking celebrity, and in order to avoid the tedioufneſs of calculation by the ratio of numbers, as Pythagoras found the proportions of intervals by means of hammers and ſtrings, his two diſciples diſcovered by means of different portions of water in two vaſes or glaſſes of equal ſize, and in uniſon with each other; that when one of them was half filled with water, leaving the other empty, the reſult was the octave 2 to 1. Then filling one vaſe or glaſs three parts full of water, and the other half full, they produced the proportion or conſonance of the 5th or 3 to 2; and, laſtly, four portions of water in one glaſs, and three in the other, produced the fourth or 4 to 3. The ſame proportions of conſonances were ſtill produced as in the Syrinx from reeds of different lengths, or by holes in the flute, or tibia.

This article has been inſerted by Padre Martini without telling us that he had proved it to be true by experiment.

HYPPIAS, according to Lucian, was an excellent muſician, and the firſt man of his time for geometry, perſpective, and aſtronomy. He was alſo a great architect. A deſcription of the magnificent baths of his conſtruction may be read in Lucian.

HYPPOPHORBION, in the *Ancient Muſical Inſtruments*. The Lybians, according to Pollux, invented a kind of flute called hyppophorbion, becauſe its ſound reſembled the acute neighing of a horſe.

The hyppophorbion was made of a ſtick of laurel ſtript of its bark and pith, and ſerved thoſe who had the care of horſes at paſture as a kind of lure or horſe-call.

HYPPOMACHUS, in the *Ancient Greek Muſic*. An eminent performer on the flute, perceiving one day at a public exhibition, that one of his diſciples of ordinary talents was violently applauded by the common people, ſilenced him by a blow of his cane; telling him that the greateſt proof of his ignorance was the being applauded by the mob.

HYPPONAX was the inventor of Iambic verſe, according to Athenæus, lib. 14.

HYPSA, in *Ancient Geography*, a river of Sicily, placed by Ptolemy between Heraclea and Agrigentum, and according to this geographer, diſcharging itſelf into the ſea to the ſouth of the latter city. It is now called *Belici*; which ſee.

HYPSELE, an epiſcopal town of Egypt, W. of the Nile, in a nome of which it was the chief place, called the Hypſelites nomos.

HYPSICLES, in *Biography*, an ancient mathematician who flouriſhed in the ſecond century, under the reigns of Marcus Aurelius and Lucius Verus, was a native of Alexandria, and a diſciple of Iſidorus. He was author of a work entitled "Αναφορικος, ſive de Aſcenſionibus," which was publiſhed at Paris by Mentelius, with the Optics of Heliodorus in 1657. He is ſuppoſed to be author of the 14th and 15th books of the "Elements of Geometry," which are commonly attributed to Euclid. Gen. Biog.

HYPSICRYMNOS, in *Ancient Geography*, a town in the vicinity of Caucaſus, ſaid by Æſchylus, in his Prometheus, to have been peopled by Arabs.

HYPSILOGLOSSUS, in *Anatomy*, the ſame with baſiogloſſus. See Hyoglossus.

HYPSILOIDES, from ὑψιλον, and ειδος, *form*, the ſame with *hyoides*; which ſee.

HYPSISTARII, Hypsistarians, ὑψιςαριοι, formed from ὑψιςος, *higheſt*, in *Eccleſiaſtical Hiſtory*, a ſect of heretics in the fourth century; thus called from the profeſſion they made of worſhipping the moſt High God.

The doctrine of the Hypſiſtarians was an aſſemblage of Paganiſm, Judaiſm, and Chriſtianity. They adored the moſt High God with the Chriſtians; but they alſo revered fire and lamps with the Heathens; and obſerved the ſabbath, and the diſtinction of clean and unclean things, with the Jews.

The Hypſiſtarii bore a near reſemblance to the Euchites or Maſſalians.

HYPSOPHYLLUM, in *Surgery*, an ulcer under a cicatrix or ſcab.

HYPSUS, in *Ancient Geography*, a town of the Peloponneſus, in Arcadia, N. of Megalopolis.

HYPTIS, in *Botany*, a genus named by Jacquin from ὑπτιος, *reſupinate*, becauſe the limb of the corolla is turned, as it were, upon its back.—Schreb. 388. Willd. Sp. Pl. v. 3. 84. Mart. Mill. Dict. v. 2. Jacq. Collect. v. 1. 101. Juſſ. 449. Lamarck. Dict. v. 3. 184. Illuſtr. t. 507.—Claſs and order, *Didynamia Gymnoſpermia*. Nat. Ord. *Verticillatæ*, Linn. *Labiatæ*, Juſſ.

Gen. Ch. *Cal.* Perianth turbinate, permanent, divided half way down into five, lanceolate, acute, generally equal, erect ſegments. *Cor.* of one petal, ringent; tube funnel-ſhaped; throat dilated; limb ſpreading widely, reſupinate; the upper lip (which is reverſed as to its ſituation) cut into three, lateral, ovate, acute ſegments, the middle one roundiſh, concave, obtuſe; the lower lip (turned uppermoſt) is divided half way down into two half-ovate, flat, acute ſegments. *Stam.* Filaments four, awl-ſhaped, two ſhorter; anthers twin, dependent. *Piſt.* Germen four-cleft; ſtyle thread-ſhaped; ſtigma bifid or ſimple. *Peric.* none, the calyx protecting the four *ſeeds*.

Eſſ. Ch. Calyx five-toothed. Corolla ringent, reverſed, its upper lip bifid, lower one trifid, the middle ſegment formed like a little pouch. Stamens declined.

1. *H. verticillata.* Willd. n. 1. Jacq. Ic. Rar. v. 1. t. 113.—"Flowers in whorls. Leaves lanceolate, toothed."—A native of Hiſpaniola. It flowers in the ſtoves of Europe about November or December.—This *ſhrub* is about ten feet high, with one or two upright *ſtems*, which are ſmooth, browniſh-aſh-coloured, round and woody; the younger branches ſquare and herbaceous. *Leaves* oppoſite, on footſtalks, lanceolate, acute, unequally ſerrated, ſmoothiſh, from three to ſix inches long, ſlightly odorous. *Whorls* on the younger branches, at each pair of leaves, ſeſſile, ſix-flowered. *Corolla* white, with the ſegments of the upper lip purpliſh. *Calyx* a little hiſpid at the back and at the edges of the ſegments. *Anthers* pale yellow.

2. *H. capitata.* Willd. n. 2. Jacq. Ic. Rar. v. 1. t. 114.—"Flowers in little ſtalked heads. Leaves ovate, toothed."—This is alſo found in Hiſpaniola, flowering in December.—*Stem* rather ſhrubby, about a yard in height, ſquare, brown. *Branches* annual, ſubdivided, roughiſh. *Leaves* oppoſite, on footſtalks, veined, unequally ſerrated, rather hairy on both ſides, dark green; the lower ones wrinkled, about ſeven inches long. *Flower-ſtalks* bearing numerous white or bluſh-coloured *flowers* collected together into a ſemi-globular head. The *tube* of the corolla is a little hairy on its outſide, eſpecially on the back of the helmet. Whole plant inodorous.

Willdenow refers *Clinopodium rugoſum*, Linn. Sp. Pl. 882. to this genus, as well as *Clinopodium chamædrys*, Vahl. Symb. p. *3.* 77; the former, under the name of *Hyptis radiata*, and the latter of *H. Chamædrys*.

HYPULUS, in *Surgery*, an ulcer under a cicatrix.

HYRAX, in *Zoology*, a genus of mammalia in the order Glires. The eſſential character conſiſts in having two broad and diſtant fore-teeth in the upper jaw, in the lower jaw four, of a flattened form, broad, notched, and placed contiguous; grinders large, tuberculated, and ten in number (or ſometimes eight); fore-feet four-toed; hind-feet three-toed; tail and clavicle none.

In the general aſpect this animal bears ſome reſemblance to the guinea-pig; the length from the muzzle to the end of the rump is about fifteen inches. The head is ſhort, the ſnout blunt, blackiſh, and without hair; the ears oval, open, brown, and woolly; the body thick and ſhort, and the belly prominent; the hair of the fur woolly, above or on the back browniſh, mixed with longer black and a few briſtles; the colour becoming grey in deſcending on the ſides, and being towards the abdomen whitiſh. The limbs appear very ſhort, the ſhoulders and thighs being concealed under the fur. The anterior feet are four-lobed, and each lobe is armed with a flat rounded nail; the poſterior feet are only two-lobed, but have beſides a toe which is furniſhed with a long ſharp claw.

According to Schreber there are two ſpecies of the hyrax genus, one of which is found at the Cape, the other an inhabitant of Syria. In this opinion he is followed by Gmelin, who thus deſcribes the two preſumed ſpecies under the names of Capenſis and Syriacus, "*Capenſis;* palmarum unguibus planis plantarum unico ſubulato,"—and "*Syriacus;* pedibus unguiculatis." Schreber. The ſpecies capenſis is that above deſcribed, and is the ſame as the Cavia capenſis of Erxleben, Marmotte du Cap of Buffon, and Cape cavy of Pennant. That called Syriacus is the animal mentioned by Bruce under the name of the "Lamb of Iſrael," and which that author concludes to be the Saphan of holy writ; it ſeems to differ principally from the former in being about two inches longer, the body more elongated in proportion, the muzzle longer, and the fur reddiſh-grey. The difference between theſe two animals is confeſſedly inconſiderable, inſomuch, perhaps, as to juſtify an idea that they may not be ſpecifically diſtinct; Sonnini is convinced they are the ſame, and confidently aſſerts it to be the only ſpecies of this genus known.

At the Cape this animal is called by the natives *klip-daas*, or rock badger, but as its haunts are the more retired, and inacceſſible parts of the mountains, its habits in a natural ſtate are little known; it is ſaid to form its retreat in the hollows of rocks and caverns, where it makes a litter compoſed of moſs and leaves that occaſionally ſerves to afford it reſt or nouriſhment, as herbage conſtitutes its natural food. Some writers, and among the number Dr. Pallas, ſeem to believe this animal forms burrows in the earth like the marmot and the badger, but this appears improbable when we conſider the flat and rounded form, as well as weakneſs of the toe-nails, the ſtructure of which is very different from thoſe of animals which we well know are deſtined by nature to ſcratch and burrow in the earth, the ſolitary toe nail on each of the poſterior feet excepted, and this, it is ſuppoſed, is principally uſeful to the animal in aſſiſting it to remove from the ſkin ſome portion of thoſe numerous pediculi with which it is infeſted and tormented. The fleſh of the hyrax is eſteemed by the inhabitants of the Cape good eating; the Hottentots endeavour alſo to diſcover its haunts for another reaſon as well as that of its capture, for they collect in the places of its retreat a particular ſubſtance ſuppoſed by them to be depoſited from the urine of this animal after long expoſure to the air; and which they maintain to be a ſovereign remedy in many diſorders; the colour of this ſubſtance when dry is blackiſh, and the ſmell offenſive in the extreme.

When domeſticated the Cape hyrax becomes a familiar and intereſting animal, and one ſuſceptible of attachment. If called by any name by which it is accuſtomed to be diſtinguiſhed, it replies in a ſhort but ſharp and piercing cry, and approaches thoſe it knows in confidence. It dreads cold, and places itſelf cloſe to the fire when it can conveniently. The diſpoſition of this animal is remarkably timid. Thoſe tranſported from the Cape into European climates have been known to ſubſiſt on bread, potatoes, fruits, and various other vegetables.

HYRCAN I., John, in *Biography*, high-prieſt and prince of the Jews, was the ſon of Simon Maccabeus. On the invaſion of Judea by the Syrian governor in the year B.C. 139, he and his brother Judas led a body of troops, who entirely defeated the invaders. After his father's murder by his ſon-in-law, Ptolemy, he went to Jeruſalem, where he was declared Simon's ſucceſſor in the prieſthood and ſovereignty. This was in the year 135. Antiochus Sidetes laid ſiege to Jeruſalem, but was induced to grant a peace to the Jews upon condition of their diſmantling the city, and the payment of a large ſum of money. Hyrcan afterwards made an alliance of friendſhip with Antiochus, and accompanied him in his war againſt Phraates, king of Parthia, in which he did much ſervice, and after the death of Antiochus, he took advantage of the civil diſſentions prevailing in Syria, made himſelf maſter of ſeveral neighbouring towns, and entirely ſhook off all dependance on that crown. He afterwards became the aggreſſor, and made conſiderable conqueſts for his country, till at length he extended his dominion not only over Paleſtine, but alſo over the provinces of Samaria and Galilee, and the Jewiſh ſtate appeared with greater luſtre than under any of his predeceſſors ſince the captivity. He was zealous for his religion, and attached to the ſect of Phariſees, but a quarrel with that haughty and powerful body embittered the latter part of his life. He died in the year 107, and was ſucceeded by Ariſtobulus.

Hyrcan II., high-prieſt and king of the Jews, was eldeſt ſon of Alexander Jannæus; but at the death of his father, his mother Alexandra took the reins of government, and allotted to him the ſucceſſion of the prieſthood. On her deceaſe Hyrcan was declared king, but being of a quiet and unenterpriſing diſpoſition, he was quickly diſpoſſeſſed of his dignities, and reduced to a private ſtation. He was afterwards perſuaded by Antipater to accompany him to Arabia, in the vain hope of obtaining the aſſiſtance of king Aretas to reſtore him. The Romans, gained over by Ariſtobulus, the brother of Hyrcan, defeated Aretas, and the two brothers at length pleaded their cauſe in perſon before Pompey. In the year 63 B.C. Hyrcan was reſtored to his pontifical office with the title of prince, but he was diveſted of royalty, and made tributary to Pompey. He lived ſeveral years under the protection of the Romans; and was very much favoured by Cæſar, but at length he fell into the hand of his nephew Antigonus, who cut off his ears, in order to incapacitate him for the prieſthood. He was then carried into Parthia, where he was well treated, till he complied with an invitation from Herod to return to Jeruſalem, and reſume the pontificate. His honours were of ſhort duration, being beheaded by the tyrant when he was in the eightieth year of his age. Joſephus. Univer. Hiſt.

HYRCANIA, in *Ancient Geography*, a large country of Aſia, ſituated to the ſouth of the eaſtern part of the Caſpian ſea, hence called the Hyrcanian ſea. It had on the W. Media, on the S. Parthia, and on the E. Margiana. This country was mountainous, covered with foreſts, and inacceſſible to cavalry. It was ſeparated from Parthia by mount Corone. According to Ptolemy the Maxaræ, and S. of them the Chrindi, and alſo the Aſtabeni, were ſituated towards the ſea. Its towns were Barange, Adrapſa, Caſape, Aberbina, Amaruſa, Sinica, Hyrcania the metropolis, Sale or Sacæ, Aſmura or Aſmurna, and Mauſoca.

It is now well known that Timotheus, the Neſtorian pontiff, who had been raiſed to that dignity A.D. 778, converted to the Chriſtian faith by the miniſtry of Subchal Jeſu, whom he had conſecrated biſhop, firſt the Gelæ and Dailamites, by whom a part of Hyrcania was inhabited; and afterwards, by the labours of other miſſionaries, the reſt of the nations, which had formed ſettlements in Hyrcania, Bactria, Margiana, and Sogdia. It is alſo certain, that Chriſtanity enjoyed in theſe vaſt regions, notwithſtanding the violent attacks of the Mahometans, to which it was ſometimes expoſed, the advantages of a firm and ſolid eſtabliſhment for a long courſe of ages; while the biſhops, by whoſe miniſtry it was propagated and ſupported, were all conſecrated by the ſole authority of the Neſtorian pontiff.

Hyrcania, or *Hyrcanus Campus*, a country of Aſia Minor.

Hyrcania, a country of Aſia, S. of Babylonia; inhabited by the Hyrcanii, who, as well as the Sacs and Caduſians, occupied that diſtrict which lay between the Tigris and the Euphrates. Theſe people were powerful enemies of the king of Aſſyria; and an alliance with them was ſought for by Cyrus in his war againſt this prince. He formed of theſe people 2000 cavalry, and a very conſiderable body of infantry; and having diſpoſſeſſed the Aſſyrians of their garriſons on the frontier of the country, Cyrus aſſigned them to his new allies. The Hyrcanians, who inhabited Hyrcania, on the coaſt of the Caſpian ſea, were a ferocious people.

HYRGALE, a town of Aſia, in Phrygia Salutaris; ſituated on a river towards the northern part of this province. The chief magiſtrate bore the title of Archon. The worſhip of Cybele was eſtabliſhed in this city; but abandoned on the introduction of Chriſtianity. Its biſhop aſſiſted at the council of Chalcedon, in 451.

HYRIA, a town built by the Cretans, who aſſumed the name of Japyges Meſſapii. It was ſituated in the interior of the country between Tarentum and Brunduſium. Strabo calls it Ouria, and the Latins Uria. It is now Dria.

HYRYNSELMI, in *Geography*, a town of Sweden, in the government of Ulea; 34 miles N.E. of Ulea.

HYS, a town of the Arabian Irak, on the Euphrates; 120 miles S. of Bagdad.

HYSSOP, in *Botany* and *Gardening*. See Hyssopus.

Hyssop, *Common*, *Hyſſopus officinalis*, in the *Materia Medica*, is a native of Siberia, and the mountainous parts of Auſtria, and flowers from June till September. The hyſſop mentioned in the Old Teſtament is not ſuppoſed to be this plant, which is neither the *eſof* of the Hebrews, nor the *υσσωπος* of the Greeks. It was firſt cultivated in England by Gerarde in 1596, and is now extremely common in our gardens. The leaves of hyſſop have an aromatic ſmell, and a bitteriſh, moderately warm taſte. They give out their active matter both to water and rectified ſpirit; the watery infuſions are of a browniſh or greeniſh yellow, and the ſpirituous tinctures of a blackiſh green colour. On inſpiſſating the latter, the remaining extract retains its flavour, is bitteriſh, and very warm, and diſcovers a penetrating pungency, reſembling that of camphor. Water, diſtilled from the freſh herb, is found pretty ſtrongly impregnated with its flavour.

An eſſential oil is obtained from the diſtillation, which riſes to the ſurface, to the quantity of about an ounce from ſix pounds of the leaves: this oil is very pungent, and in ſmell exactly reſembles the hyſſop.

The ſtimulating quality of hyſſop is aſcribed to the quantity of eſſential oil which it contains; and with a view to its aromatic and ſtimulant effects, Bergius recommends it as an emmenagogue and antihyſteric; but it is chiefly employed as a pectoral, and has been long thought an uſeful medicine in humoral aſthmas, coughs, and catarrhal affections: for this purpoſe, an infuſion of the leaves, ſweetened with honey or ſugar, and drank as tea, is recommended by Lewis.

Hyſſop is greatly commended in caſes of bruiſes from falls, blows, &c. uſed externally by way of fomentations or cataplaſms, or only a little bundle of the plant ſewed up in a linen rag, and applied to the part. Ray gives an account from Mr. Boyle, of a violent contuſion of the thigh, from a kick of a horſe, which was happily cured by this herb, boiled and applied as a cataplaſm. He tells us, the violent pain was almoſt inſtantly removed, and the very mark and blackneſs taken off in a few hours. It is alſo recommended as a vermifuge by Roſenſtein. Woodv. Mat. Med.

Hyſſop was commonly made uſe of, as we learn from the ſcriptures, in purification. Thus God commanded the Hebrews when they came out of Egypt, to take a bunch of hyſſop, to dip it in the blood of the paſchal-lamb, and ſprinkle the lintel and two ſide-poſts with it. (Exod. xii. v. 22.) Sometimes a little wool was added to it of a ſcarlet colour. So in the purification of lepers, a bunch, compoſed of hyſſop, the branches of cedar, and red wood, was dipped in water, mingled with the blood of a bird, and with this the leper was ſprinkled. (Levit. xiv. v. 4.) David alſo alludes to theſe ceremonial cleanſings in his 51ſt Pſalm, v. 7th. "Purge me with hyſſop, and I ſhall be clean."—Cruden obſerves it is very probable that this plant grows to a great height in Judea, ſince it is ſaid in the Goſpel, that the ſoldiers having filled a ſponge with vinegar, they put it upon a ſtick of hyſſop and preſented it to our Saviour's mouth, who was then upon the croſs.

Hyssop, *Hedge*, in *Botany* and the *Materia Medica*. See Gratiola.

Hyssop, *Mountain*. See Thymbra.

HYSSOPIC Art, a name which Paracelſus gave to chemiſtry, conſidered as the art which purifies metals, minerals, &c. in alluſion to that text in the Pſalms, "Purge me with hyſſop, and I ſhall be clean."

HYSSOPUS, in *Botany*, generally taken for *ὑσσωπος* of Dioſcorides, derived by ſome from *ὑω*, *to rain*, or *to be ſhowered on*, and *ωψ*, *the countenance*, becauſe the duſt of this plant, when dried and pulverized, was uſed in the Grecian ſacrifices for ſprinkling the head and eyes, as the Catholics now uſe holy water for the purpoſe of *croſſing* themſelves, and this operation was ſuppoſed to cleanſe the impurities of thoſe over whom hyſſop was ſprinkled. Profeſſor Martyn more juſtly deduces the word from the Hebrew, *Eſob*. Linn. Gen. 289. Schreb. 385. Willd. Sp. Pl. v. 3. 47. Mart. Mill. Dict. v. 2. Ait. Hort. Kew. v. 2. 283. Juſſ. 113. Tournef. t. 95. Lamarck Dict. v. 3. 185. Illuſtr. t. 502.—Claſs and order, *Didynamia Gymnoſpermia*. Nat. Ord. *Verticillatæ*, Linn. *Labiatæ*, Juſſ.

Gen. Ch. *Cal.* Perianth of one leaf, cylindrical, oblong, ſtriated, acutely five-toothed, permanent. *Cor.* of one petal, ringent; tube cylindrical, ſlender, as long as the calyx; throat inclined; upper lip ſtraight, flat, ſhort, roundiſh, emarginate; lower lip divided into three ſegments, the lateral ones ſhorter and obtuſe; the middle one crenate, obcordate, acute, with diſtant lobes. *Stam.* Filaments four, erect, longer than the corolla, diſtant; the two upper ones ſhorter, but the two longer ones nearer to the lower lip; anthers ſimple. *Piſt.* Germen four-cleft; ſtyle thread-ſhaped, under the upper lip, and of the ſame length; ſtigma bifid. *Peric.* none; the calyx containing the *ſeeds*, which are four in number, and ſubovate.

Eſſ. Ch. Corolla with a ſmall middle crenate ſegment in its lower lip. Stamens ſtraight, diſtant.

1. *H. officinalis*. Common Hyſſop. Linn. Sp. Pl. 796. Jacq. Auſtr. t. 254.—"Spikes all leaning in the ſame direction. Leaves lanceolate."—A native of the ſouth of Europe, flowering from June to September. *Root* woody, half an inch thick. *Stem* about 18 inches high, at firſt ſquare, then round. Leaves ſeſſile, the lower ones in pairs, narrow, ſmooth, entire, like thoſe of lavender, but ſhorter. *Flowers* in whorls, from the boſoms of the leaves, continued into a ſpike, of a blue colour, but varying to red and white. The whole plant has a ſtrong aromatic ſcent, and was cultivated in this country by Gerarde in the year 1596.

2. *H. Lophanthus*. Mint-leaved Hyſſop. Linn. Sp. Pl. 796. Jacq. Hort. Vind. v. 2. t. 182.—"Flowers reſupinate, lower ſtamens ſhorter than the corolla. Leaves cordate."—Native of Siberia, flowering in Auguſt and September. *Root* perennial, fibrous, ſending out many ſquare ſtalks, which divide into branches. *Leaves* heart-ſhaped, rough, pale on the under ſide. *Cluſters* of four or five purple flowers are produced at each joint of the ſtem. The tube of the corolla is longer than the calyx.

3. *H. nepetoides*. Square-ſtalked Hyſſop. Linn. Sp. Pl. 796. Jacq. Hort. Vind. v. 1. t. 69.—Stem ſharply quadrangular. Flowers in cloſe whorls. Leaves ovate.—Native of Virginia and Canada, flowering from Auguſt to October.—*Root* perennial. *Stem* erect, about four feet high. *Leaves* obliquely cordate, or ovate, ſerrated, acute, on ſhort footſtalks. *Flowers* yellow, in thick cloſe ſpikes four or five inches long; upper lip of the corolla divided into two roundiſh ſegments. *Seeds* brown.

There is a variety of this ſpecies with purple ſtalks and flowers, the leaves on longer footſtalks, and the ſpikes of flowers denſer, but Willdenow has made a new ſpecies of it, we preſume, under the name of *H. ſcrophularifolius*. Vide Willd. Sp. Pl. v. 3. 48.

Hyssopus, in *Gardening*, affords a plant of the low under-ſhrubby kind; of which the ſpecies cultivated is the common hyſſop (H. officinalis).

There are ſeveral varieties, as the blue-flowered, the white-flowered, the red-flowered, the long-ſpiked, with deep blue flowers, the curled-leaved, and the ſtriped-leaved.

Method of Culture.—This is a kind of plant which is capable of being raiſed by means of ſeeds, cuttings, and ſlips.

The ſeeds ſhould be ſown in a bed or border of light mould, prepared for the purpoſe, in the ſpring ſeaſon, being well raked in. When the plants appear, they ſhould be thinned where they ſtand too cloſe, and as ſoon as they are three or four inches in height, be planted out in the places where they are to grow. In the forming of edgings of this plant, the ſeeds may be depoſited in drills run along the edges of the borders, &c. where they are to grow, being covered in about half an inch in depth.

In the two latter modes, ſome of the more robuſt ſide-ſhoots ſhould be cut or ſlipped off, and planted in a ſhady border, or other place, in the latter part of the ſummer, at the diſtance of five or ſix inches from each other, water being immediately given, and occaſionally repeated. The plants ſoon take root, when in the autumn they may be ſet out where they are to grow.

It is the common blue-flowered hyſſop that is the kind moſtly made uſe of, and which is commonly cultivated either in cloſe rows, or by way of edging to beds and other parts, in which latter caſe the plants are kept regular and in order, by annual clippings. The rows ſhould be about fifteen or eighteen inches apart where that method is employed, and nearly at an equal diſtance between the plants in the rows.

They are the young leafy ſhoots and flower-ſpikes which are uſually employed, being cut as they are wanted. And the flower ſtems may be cut over during the ſummer, and be tied up in bunches for uſe.

Plants of the ſeveral different varieties may likewiſe be planted out ſeparately, in the borders, clumps, and other parts of the pleaſure grounds, in order to form ſmall buſhy plants for the purpoſe of ornament.

HYSTERA, a term uſed by ſome of the old writers in medicine to expreſs the fecundines.

HYSTERALGIA, in *Medicine*, from the Greek ὑστέρα, ſignifying the *womb* or *uterus*, and ἄλγος, *pain*, a term uſed by the noſologiſts to denote all the ſlow painful diſorders of that organ.

Sauvages deſcribes ſixteen ſpecies of hyſteralgia, diſtinguiſhing them by the various circumſtances by which the pain is excited. Thus he includes, under this genus, the pains ariſing from *prolapſus* of the uterus (Spec. 1. H. *ab hyſteroptoſi*) ; from *hernia* of the ſame viſcus (2. H. *ab hyſterocele*) ; from *dyſmenorrhœa*, or painful menſtruation (3. H. *à menoſtaſia*) ; from cancer of the uterus (4. H. *canceroſa*) ; from ulceration and ſcirrhus (5 and 6. H. *ulceroſa*, *ſcirrhoſa*) ; from pruritus in the uterus (7. H. *pruriginoſa*) ; from a bony ſubſtance in it (8. H. *ab oſſe*. See Hody, in Philoſ. Tranſact. vol. ix. p. 191.) ; from intermitting fever (9. H. *febricoſa*, Morton, Pyretologia, p. 92.) ; from hyſterical affections (10. H. *vaporoſa*) ; from abſceſs ſucceeding to inflammation of the uterus (11. H. *ex abſceſſu*. See Hysteritis) ; from the gradual diſtention of the uterus in pregnancy (12. H. *impregnatarum*); from ſuppreſſion of the milk (13. H. *lactea*) ; from the natural contractions of the uterus after delivery, during the diſcharge of the *lochiæ*, commonly called *after-pains* (14. H. *lochialis*) ; from a ſuppoſed tranſlation of the milk to the hypogaſtric region (15. H. *ab ſparganoſi*) ; and, laſtly, from calculous concretions formed in the uterus (16. H. *calculoſa*). See his Noſol. Meth. Claſs vii. Ord. 4. It will be obſerved, that ſome of theſe varieties of hyſteralgia, ſuch as thoſe connected with the enlargement of the gravid uterus (ſp. 12) and the after-pains (ſp. 14.), can ſcarcely be conſidered as diſeaſes, unleſs they occur in an unuſual degree of ſeverity : while, on the other hand, ſome of them are extremely rare ; ſuch as the caſe deſcribed by Hody (ſp. 8.), and the variety occaſioned by the preſence of calculi. The firſt and ſecond ſpecies, depending upon prolapſus of the vagina and hernia, can only be relieved by mechanical means, by which the uterus may be replaced in its natural ſituation. (See Prolapsus *Uteri*, and Hysterocele.) Ulceration and cancer of the womb conſtitute the moſt painful and diſtreſſing diſeaſes to which the female frame is ſubject, and will be treated of under their proper heads. See Womb.

But, in addition to theſe inſtances of hyſteralgia, there are caſes in which pain, referred to the uterus and its appendages, is a leading ſymptom, and cannot be aſcribed exactly to any of the cauſes above-mentioned. Such pains ſometimes come on a few weeks after delivery in married women, and are often dated from the laſt child-birth. They are moſt commonly accompanied by ſome irregularity in the menſtrual diſcharge, generally by an increaſe of it, or by alternations of a bloody, with a thinner, leſs coloured, and offenſive evacuation. The ſymptoms vary a little in different caſes, apparently according as the uterus itſelf, or its particular appendages are diſordered. In general the patient complains of pains in the loins, extending round the margin of the pelvis to the groin, on one or both ſides, and ſhooting down the thigh to the knee, or, in more ſevere caſes, even to the foot. Sometimes the pain is more ſtrictly referred to the uterus itſelf, or its neck, and the loins are ſcarcely affected ; and ſometimes it is fixed, in one ſide, above the ilium, as if ſeated in the ovarium. In one caſe we have ſeen the diſeaſe confined apparently to the ovarium and ligaments of one ſide, in which there was great ſoreneſs of the part, where the round ligament paſſes to the pubes. The ſtomach is frequently diſordered by ſympathy, and the patient complains of nauſea, flatulence, and other ſymptoms of indigeſtion ; and occaſionally ſome degree of febrile action attends theſe complaints.

Theſe forms of hyſteralgia are by no means unfrequent, eſpecially among the poor ; and ſeem to originate often in ſome degree of chronic inflammation, and diſeaſed ſecretion in the uterus, conſequent on the irritations of child-birth, or produced by cauſes ſuddenly interrupting or deranging the lochial and menſtrual diſcharges. Sometimes it is probable that they are merely the ſigns of incipient ſcirrhus.

There are no medicines which operate ſpecifically upon the uterus. When there is clearly a feveriſhneſs connected with hyſteralgia, laxatives and diaphoretics are the moſt uſeful medicines, the pain being at the ſame time ſoothed by conium, opium, humulus, or other anodynes. The tincture of the hop, or humulus lupulus of Linnæus, has ſometimes appeared to afford eaſe in theſe caſes, when the other narcotics had failed ; but perhaps this obſervation is applicable to any medicine of this claſs. When the hyſteralgia is connected with great weakneſs and lowneſs of ſpirits, and a conſiderable leucorrhœa, cordials and tonics, combined with the anodynes juſt mentioned, muſt be adminiſtered. In the caſe attended with pain and ſoreneſs in the courſe of the round ligament, the application of leeches to the groin, and the uſe of ſaline laxatives, afforded relief. In all theſe caſes reſt, or abſtinence from all motion, eſpecially from walking, ſeem to be beneficial ; although perhaps negatively, by allowing the veſſels of the part to recover their natural actions, which the erect poſture and the irritation of walking tend to prevent. See Edin. Med. and Surg. Journal, vol. iv. p. 241.

In the volume of the Journal, juſt quoted, a caſe of hyſteralgia is related, which continued, without one day's ceſſation, for twenty-ſix years, yet no derangement in the ſtructure of the uterus, ſufficient to account for it, was diſcovered after death. See p. 168.

HYSTERIA, Hysterics, or *Hyſterical Affection*, from ὑστέρα, the *uterus*, or *womb*, implies literally the *uterine diſeaſe* ; it denotes a ſtate of conſtitution, in which a variety of ſpaſmodic, convulſive, and painful affections occur, together with extreme variability of the ſpirits, and a frequent ſenſe of ſuffocation, from a ball riſing from the abdomen to the throat, which has been called the *globus hyſtericus*, and conſidered by ſome as the eſſential characteriſtic of the diſeaſe.

Other appellations have been given to the diſeaſe, with reference to its origin from the womb, eſpecially to the convulſive paroxyſms, or *hyſteric fits*, which have been called *ſuffocation of the womb*, *ſuffocatio uteri*, *fits of the mother*, &c. The appellation of *vapours* has alſo been applied to this diſeaſe in females, as well as to the hypochondriaſis in men ; and from a ſimilar notion, that it is occaſioned by vapours, aſcending from the *uterus*, and affecting the brain, lungs,

&c. ; as vapours ariſing from the ſtomach, liver and ſpleen, were ſuppoſed to give riſe to hypochondriaſis.

All medical writers have admitted the difficulty of deſcribing, in a conciſe manner, the various forms of this diſorder, which exhibits ſuch a number of phenomena, which rapidly appear and change, that it imitates almoſt every diſeaſe of the nervous claſs, and even ſeveral of the more fixed and organic diſeaſes. "Dies me deficeret," ſays Sydenham, "ſi omnia, quæ adfectus hyſtericos gravant, ſymptomata enumerare velim ; tam diverſa atque ad invicem contraria ſpecie variantia, quam nec Proteus luſit unquam, nec coloratus ſpectatur chamæleon." (Diſſertatio Epiſtolaris ad Gul. Cole.) The moſt complete form of *hyſteria*, however, is ſeen in the paroxyſms, or *fits*, which occur at various periods, without any regularity. Theſe are commonly preceded by a ſenſe of laſſitude, coldneſs of the feet, and a copious diſcharge of pale limpid urine : often by pain in the head, loins, or ſtomach ; which latter organ, as the fits commence, is ſometimes affected with vomiting. The paroxyſms commonly begin by ſome pain and fulneſs felt in the left ſide of the belly. From this a ball ſeems to move, with a grumbling noiſe into the other parts of the belly ; and, making as it were various convolutions there, ſeems to move into the ſtomach, and more diſtinctly ſtill riſes up to the top of the gullet, where it remains for ſome time, and by its preſſure upon the larynx gives a ſenſe of ſuffocation. There is occaſionally much difficulty of breathing, and a palpitation of the heart at the onſet. By the time the diſeaſe has proceeded thus far, the patient is affected with a ſtupor and inſenſibility, while at the ſame time the body is agitated with various convulſions : the trunk of the body is writhed to and fro, and the limbs are variouſly agitated ; commonly the convulſive motion of one arm and hand, is that of beating with the cloſed fiſt upon the breaſt very violently and repeatedly. The whole of the belly, and particularly the navel, is often drawn ſtrongly inwards ; ſometimes there is a violent working, or alternate riſing and falling of the belly, attended with conſiderable noiſe. The *ſphincter ani*, during the fit, is ſometimes ſo firmly conſtricted as not to admit a ſmall glyſter-pipe, and there is at the ſame time an entire ſuppreſſion of urine. This ſtate continues for ſome time, with ſome remiſſions and renewals of the convulſive motions ; but they at length ceaſe, leaving the patient in a ſtupid and ſeemingly ſleeping ſtate. More or leſs ſuddenly, and frequently with repeated ſighing and ſobbing, together with a murmuring noiſe in the belly, the patient returns to the exerciſe of ſenſe and motion, but generally without any recollection of the ſeveral circumſtances that had taken place during the fit.

Such fits are very liable to recur from time to time, and during the intervals the patients are ſubject to involuntary motions, to fits of laughing and crying, with ſudden tranſitions from one to the other ; while ſometimes falſe perceptions and ſome degree of delirium alſo occur, as well as all the various incongruities of the diſeaſe to which we alluded above. The preceding account is that of the moſt common form of the *hyſteric paroxyſm* ; but this is conſiderably varied in different perſons, and even in the ſame perſon at different times. It differs chiefly by having more or fewer of the circumſtances above-mentioned, by the greater or leſs degree of violence of theſe, and by the different duration of the whole fit. See Cullen, Firſt Lines, par. 1514. *et ſeq.*

Sydenham has enumerated the principal varieties of form, which the *irregular hyſteria*, as it has been termed, aſſumes ; or, to uſe perhaps a more correct expreſſion, the principal diſorders of the functions, which take place in the intervals of the paroxyſms, or occur where the paroxyſms do not appear. "The diſeaſe," he ſays, "is not more remarkable for its frequency, than for the numerous forms under which it appears, reſembling moſt of the diſtempers wherewith mankind are afflicted. For in whatever part of the body it be ſeated, it immediately produces ſuch ſymptoms as are peculiar to that part ; ſo that unleſs the phyſician be a perſon of judgment and penetration, he will be miſtaken, and ſuppoſe ſuch ſymptoms to ariſe from ſome eſſential diſeaſe of this or that particular organ, and not from the *hyſteric paſſion*." (Loc. cit.) Dr. Ferriar, in his chapter on the "converſion of diſeaſes," has remarked that the converſions of hyſteria are very common ſources of error to young practitioners, and ſometimes deceive even the moſt experienced. "Whoever would preſent us with a good book," he ſays, on the *fallacy of ſymptoms*, which is greatly wanted, muſt be completely maſter of this unaccountable diſeaſe." Ferriar, Med. Hiſtories and Reflections, vol. ii. See alſo CONVERSION *of Diſeaſes*, where the ſubſtance of that ingenious diſſertation will be found.

"When the hyſteric diſpoſition is ſet in motion, the ſame author obſerves, it is not uncommon to find many of the different viſcera attacked by it in turns, and the diſeaſes peculiar to each counterfeited with much exactneſs. I have ſeen ſymptoms of paralyſis, jaundice, palpitation, and nephritis, ſucceed each other rapidly in the ſame patient, while ſome of the characteriſtic marks of hyſteria have been diſcernible, and where the unity of the diſeaſe was proved, by the diſappearance of all menacing affections, on the approach of regular fits. In one caſe, the bowels were attacked, and the ſymptoms of *enteritis* were ſo preciſely imitated, as to give much alarm for the patient's ſafety. I ſuſpected the real nature of the diſeaſe, from obſerving that the pulſe was ſoft and full, that the evacuations were natural, and that her ſpirits were agitated, even to involuntary emotions, by ſlight cauſes. This caſe terminated ſucceſsfully, on the acceſſion of clear hyſteric ſymptoms. Several years ago, I attended an elderly lady, for a complaint which ſeemed to vibrate between apoplexy and palſy : after lying for ſeveral weeks in a ſtate which afforded little hope of amendment, ſhe was affected with involuntary ſobbing and weeping ; the complaints in her head and limbs were converted into hyſterical convulſions, and ſhe recovered completely.

"It is very common to meet with ſyncope, or palpitations of the heart and great veſſels, accompanied with a ſoporific depreſſion, or extreme dejection of ſtrength and ſpirits, and converted, after deep ſighing or diſcharge of tears, into the hyſterical paroxyſm. In theſe caſes, the pulſe is ſometimes full and regular during the moſt alarming appearance of ſinking, and ſometimes variable to ſuch a degree, as to exclude all conjecture, excepting that of an hyſteric origin.

"I have met with ſeveral caſes of hyſterical hæmoptoë, in which the quantity of blood evacuated was very conſiderable ; ſix or eight ounces were ſometimes ſpit up daily, for a fortnight or three weeks ſucceſſively. Moſt of the uſual ſymptoms attended, which denote danger in this complaint, when it ariſes from other cauſes ; but the equal moderate ſtate of the pulſe, and the appearance of ſome degree of *globus hyſtericus*, ſeemed to determine the nature of the complaint ; a converſion accordingly ſoon took place to the ordinary hyſteric paroxyſm, and no bad conſequence followed the hæmorrhage from the lungs.

"In all ſimilar inſtances, the ſupervening hyſterical paroxyſm puts a favourable termination to the irregular appearances." Loc. cit.

Sydenham's account of theſe irregularities differs, in ſome reſpects, from the one juſt detailed ; eſpecially inaſmuch as he does not generally notice the ſolution of the local complaint by the occurrence of the regular hyſteric paroxyſm, which he mentions only as one of the forms which the diſeaſe aſſumes. He ſeems to conſider the copious diſcharge of limpid urine, as the chief characteriſtic of the hyſteric attacks, which counterfeit other diſeaſes; (Opera Univerſa, Edit. Lugd. Bat. 1726, p. 392. 394. 570. Wallis's Tranſlat. p. 111. 114. and 399, vol. ii.) but he looks upon this ſymptom as belonging in common to hyſteria in women, and to hypochondriaſis in men.

Among the diſeaſes which he has obſerved to be counterfeited by hyſteria, are *apoplexy*, when it attacks the head, which terminates in *hemiplegia*, and is chiefly ſeen in lying-in-women, after difficult parturition, attended with great hæmorrhage: the *clavus hyſtericus*, or acute pain in one ſmall ſpot in the head, which is often accompanied by vomiting, and *palpitation* of the heart; theſe are moſt frequent in delicate and chlorotic girls: pain in the ſtomach, colic, with porraceous vomiting, reſembling the *iliac paſſion*, terminating in *jaundice*, and always accompanied by great deſpondency; chiefly attacking women of lax fibre, who have ſuffered ſevere labours from large children: pains in the kidnies and bladder, like *fits of the ſtone*, with *ſuppreſſion of urine*; occurring in women much debilitated by previous hyſteric fits, and in a bad ſtate of health; who are alſo liable to long-continued *vomiting* and *diarrhœa*, without pain, diſcharging green bile. He likewiſe remarks, that the diſeaſe is liable to attack the external parts and muſcular fleſh, ſometimes cauſing pain, ſometimes ſwelling, in the throat, ſhoulders, hands, thighs, and legs, more eſpecially in the laſt; which ſwelling, however, is to be diſtinguiſhed from œdema, by being greateſt in a morning, by leaving no pit after preſſure with the finger, and by commonly affecting only one leg; though its external appearance much reſembles that of œdema. But the moſt ſevere of thoſe pains, is that which affects the back. He adds, that theſe pains have this circumſtance in common, that they all leave the parts extremely ſore and tender, as if they had been ſeverely beaten, ſo that they cannot bear the touch for ſome time; and that theſe pains and other ſymptoms are all preceded by a death-like coldneſs of the external parts. Diſſ. Epiſtolaris.

To conclude, the regular hyſteric paroxyſm ſometimes alternates with the *cataleptic* ſtate, in which the patient remains fixed in one inſenſible poſition (ſee CATALEPSY); ſometimes with a loſs of voice; with *carus*; and with various ſtates of mental derangement, as *nymphomania*, fatuity, &c.

Cauſes of Hyſteria.—The *prediſpoſing* cauſe of this diſeaſe appears to conſiſt chiefly in a certain mobility of the nervous ſyſtem, which is almoſt peculiar to the female conſtitution, the "varium et mutabile, fœmina," more eſpecially to females of a ſanguine temperament, and of a plethoric and irritable habit. The diſeaſe, therefore, is very rarely ſeen in the male ſex, and never in the ſame exquiſite degree in which it occurs in women. In the latter, it appears moſt generally from the age of puberty to that of thirty-five or forty years; very ſeldom before the firſt or after the laſt of thoſe periods; but at all ages, the time at which it moſt readily occurs is that of the menſtrual period, and it is often obviouſly connected with ſome irregularity or deficiency in the uterine functions; as with ſuppreſſed or difficult menſtruation, pain in the uterus, &c. It affects barren women, more than thoſe who are breeding, and therefore frequently young widows. It occurs eſpecially in thoſe females who are liable to nymphomania; and the noſologiſts have properly enough marked one of the varieties of this diſeaſe by the title of *hyſteria libidinoſa*. It is more frequent in cold than in hot climates.

The *exciting* cauſes of hyſteria, which readily operate on a conſtitution pre-diſpoſed to the complaint, are eſpecially all violent paſſions, and every conſiderable emotion of the mind, particularly thoſe brought on by ſurpriſe. Some females, liable to this diſeaſe, acquire ſuch a degree of ſenſibility, as to be ſtrongly affected by every impreſſion, however ſlight, that comes upon them ſuddenly and by ſurpriſe; even by diſagreeable odours, ſights, &c. An indolent life and a luxurious manner of living tend both to augment the pre-diſpoſition to the diſeaſe, and to call it into action. Any irritation, eſpecially in the alimentary canal or in the uterus, will excite hyſteria; whence it often accompanies a ſtate of inanition, or emptineſs of the ſtomach from long faſting (Sydenham, *loc. cit.*); the uſe of a ſtrong emetic or purgative (*idem.*); painful menſtruation; and an immoderate diſcharge of the menſes, either in child-bed, or at other times. It is alſo occaſionally excited by a prolapſus of the uterus, though more rarely; and it has been ſaid to follow the repreſſion or metaſtaſis of chronic cutaneous eruptions, intermittent fevers, and other acute diſeaſes.

As to the *proximate* cauſe of the diſeaſe, it may be remarked, that its paroxyſms appear to begin by a convulſive and ſpaſmodic affection of the alimentary canal, which afterwards influences the brain and a great part of the nervous ſyſtem. But, as Dr. Cullen obſerves, "although the diſeaſe appears to begin in the alimentary canal, yet the connection which the paroxyſms ſo often have with the menſtrual flux, and with the diſeaſes that depend on the ſtate of the genitals, ſhews that phyſicians have at all times judged rightly in conſidering this diſeaſe as an affection of the uterus and other parts of the genital ſyſtem." Par. 1520.

He confeſſes himſelf, however, unable to explain in what manner the uterus and the ovaria are affected in the diſeaſe; how the affection of theſe is communicated with particular circumſtances to the alimentary canal; or how the affection of this part, riſing upwards, affects the brain, ſo as to occaſion the particular convulſions which take place. To ſay that there is a great ſympathy between the uterine and digeſtive organs, is but to expreſs the fact in other terms; and with this general expreſſion we muſt be content at preſent.

Sydenham refers all the phenomena to the irregular motions of the animal ſpirits; which is a ſtill more hypothetical expreſſion of the fact, becauſe the very exiſtence of ſuch ſpirits is a mere aſſumption, which a better inveſtigation has rejected as altogether unfounded. He denies that the diſeaſe is to be aſcribed "to the aſcent of malignant vapours from the corrupted ſemen or menſtruous blood in the uterus to the parts affected, as ſome authors have aſſerted; or, as others affirm, to a latent depravity of the juices, or a collection of acrid humours." And his reaſon is very concluſive againſt the humoral pathology: "for," he ſays, "that the cauſe of the diſeaſe does not lie concealed in any morbific matter, appears evident from this ſingle inſtance. If a ſlender weak woman, otherwiſe uſually healthy, happens, by miſtake, to be debilitated and exhauſted by a ſtrong vomit or purgative, ſhe will be infallibly ſeized with ſome one of the concomitant ſymptoms of this diſeaſe; which would, by theſe means, rather have been carried off, than occaſioned, if the cauſe of it had been any preſent humour. The ſame may be ſaid of too great loſs of blood, whether it be taken away by bleeding, flows immoderately after delivery, or be diminiſhed by inanition and too long abſtinence from fleſh; all which would rather be preventive than productive of hyſteric diſeaſes, if the cauſe of theſe conſiſted in ſome kind of morbid matter; whereas, on the contrary, they are never more certainly occaſioned than by theſe evacuations." Nevertheleſs, Sydenham was unable to baniſh completely his prejudices in favour of the humoral pathology, although refuting it thus ſatisfactorily; and therefore, he maintains that "the irregular motion of the ſpirits generates putrid humours in the body;" and that theſe corrupt juices, collected in the blood, are ſent to various organs, producing chloroſis, and other cachectic diſeaſes. Loc. cit.

It would be quite ſuperfluous to enter into any diſcuſſion reſpecting the abſurd notions of the ancients, who attributed the diſeaſe either to the aſcent of vapours from the uterus, producing the ſenſe of ſuffocation and convulſions, or to the aſcent of the uterus itſelf, which was ſuppoſed to roam about the abdomen at times, and, by preſſing the diaphragm upwards, to give riſe to the ſymptoms. The latter opinion ſeems to have been held both by the philoſophers and phyſicians; for Hippocrates (de Natura Mulierum) and Plato (Timæus) have expreſſed the ſame notion; the latter comparing the uterus to an animal, deſirous of impregnation, and wandering through the whole body. Galen's knowledge of anatomy enabled him to refute theſe abſurdities (de locis affect. cap. 5.); and therefore the notion of riſing vapours was adopted, and it continued to be eſpouſed for a conſiderable period after the reſtoration of learning. For a ſtatement of the arguments, the reader may conſult Sennert. Pract. lib. i. ſect. 1. cap. 14. and lib. iv. part 2. ſect. 3. cap. 4. the works of Fernel, &c.

Of the Diagnoſis.—The hyſteric paroxyſm ſcarcely reſembles any other affection of the body, except occaſionally the paroxyſm of *epilepſy*; but in epilepſy, the convulſive motions are generally much more violent, and the inſenſibility more complete; there is foaming at the mouth, and a ſtate of coma or profound ſleep follows the fit; on the contrary, there is no *globus* riſing into the throat, no agitation of the abdomen, no ſcreaming, laughing, or crying, nor any copious diſcharge of limpid urine, as is common in the commencement of the hyſteric fit.

The diſeaſe in general has been conſidered by many phyſicians as the ſame with hypochondriaſis, the latter term being appropriated to it, when occurring in the male ſex, and hyſteria when it is found in the female. But this ſeems to be improper, if the ſymptoms of the two diſeaſes be accurately examined. They may have, indeed, ſome ſymptoms in common; but for the moſt part they differ widely. Spaſmodic affections occur in both; but they are generally local, confined to particular parts, and much leſs ſevere in hypochondriaſis, as well as much leſs frequent than in hyſteria. Indigeſtion occaſionally affects hyſteric patients; but they are often entirely free from it, which never happens in hypochondriacs. But the diſeaſes are ſtill more certainly diſtinguiſhed by the temperament which they uſually attack, and by the time of life at which they appear to be moſt exquiſitely formed: youth and a ſanguine temperament being moſt liable to hyſteria, while the middle or advanced periods of life, and a melancholic temperament, are peculiarly favourable to hypochondriaſis. Nor are they limited to the reſpective ſexes; for the male ſex, when youth and the ſanguine temperament, exquiſitely marked, concur, is not abſolutely free from the attacks of hyſteria; and inſtances of hypochondriaſis in the female ſex, of the oppoſite age and temperament, are very common.

With reſpect to the irregular forms of hyſteria, under which it reſembles many other diſeaſes, we have already anticipated the means of forming a diagnoſis. Dr. Ferriar conſiders the ſupervention of the regular paroxyſm as the principal ſource of diſcrimination: but as the diſeaſe is generally removed by this occurrence, it is deſirable to detect the nature of thoſe irregular affections at an earlier period. Beſides the copious diſcharge of limpid urine, which Sydenham conſidered as the pathognomonic ſymptom of hyſteric complaints, the ſame accurate obſerver deemed the ſtate of the mind a valuable index of their preſence; and it is obvious, from the obſervations above quoted from Dr. Ferriar, that he alſo attended to this point, and to the ſtate of the pulſe. As the moſt frequent exciting cauſes of hyſteric fits are ſome ſudden and ſtrong emotions of the mind, whenever Sydenham was conſulted by women concerning any particular diſorder, which could not be accounted for on the ordinary principles of inveſtigating diſeaſes, he always inquired whether they were not chiefly attacked with it after fretting or any diſturbance of mind; and if they acknowledged this, he concluded that the diſorder was of the hyſterical claſs, eſpecially when the other diagnoſtic, copious pale urine, at the ſame time occurred. Epiſt. ad Dom. Cole.

Although the paroxyſm of hyſteria is extremely alarming to the inexperienced obſerver, it is ſcarcely ever fatal in its own form, unleſs when it is induced by ſome very violent cauſe; and the diſorder generally diſappears in the decline of life. Inſtances have occurred, indeed, in which it has continued to harraſs a patient from the commencement to the ceſſation of the catamenial diſcharge, and then ceaſed.

Of the Cure.—In the treatment of hyſteria, as in many other diſeaſes, conſiderable diſcrimination will be required in the application of remedies, which muſt be varied according to the form or degree of the complaint, to the temperament, habit of body, and condition in life, of the patient, and to the nature of the cauſes exciting it. Although that peculiar mobility of the nervous ſyſtem, on which the diſorder chiefly depends, is moſt frequently connected with a plethoric habit, and a purely ſanguine temperament; yet this is by no means univerſal: for it is often obſerved in habits the reverſe of plethoric, in which a conſiderable degree of debility, and a pale and phlegmatic temperament prevail. In aſcribing the convulſive paroxyſms of hyſteria to a local plethora or turgeſcence of blood in the uterus, from the analogy of epilepſy and aſthma, which he refers to a turgeſcence of blood in the veſſels of the brain and of the lungs reſpectively, Dr. Cullen has obviouſly hit upon a falſe analogy, which will not bear him out in the explanation. For in the epilepſy and aſthma the peculiar functions of the brain and of the lungs are diſordered by plethora of theſe organs; the functions of ſenſe and motion, in the one caſe, and of reſpiration in the other, are almoſt excluſively deranged. But in hyſteria, if the analogy were correct, the uterine functions ſhould be alone or principally diſeaſed: whereas the functions of the brain, the lungs, and the alimentary canal, are chiefly deranged, to which the ſuppoſed plethora does not extend. See Cullen, Firſt Lines, par. 1523.

Whatever notion be adopted as to the pathology of the diſeaſe, the curative indications ſeem to reſolve themſelves into two; namely, *firſt*, in the paroxyſm, to check its violence; and, *ſecondly*, in the interval, to endeavour to leſſen or remove the prediſpoſing and exciting cauſes.

The firſt indication will be fulfilled by different means, according to the ſtate of the patient's habit. If ſhe is of a robuſt and plethoric conſtitution, *blood-letting* is the moſt effectual antiſpaſmodic that can be employed; and when the convulſions are ſevere, or long continued, with a fluſhing or fulneſs of the veſſels of the face and external parts, it is the only antiſpaſmodic that can be adminiſtered with ſafety.

At the ſame time, the turgeſcence and activity of the blood-veſſels, and the conſequent over-irritation of the nervous ſyſtem, may be diminiſhed by the application of cold to the head and abdomen, or to the body in general. The uſe of nauſeating emetics has alſo been recommended for this purpoſe. Where the plethora is not ſo conſiderable as to warrant general blood-letting, cupping from the neck, or from any part in pain, may be ſubſtituted.

But in theſe habits, which exhibit no marks of plethora or of conſiderable ſtrength, evacuations of blood, ſo far from being beneficial, are extremely detrimental, and are abſolutely enumerated among the cauſes which induce the diſeaſe. In ſuch conſtitutions, the hyſteric paroxyſm is to be diminiſhed or cut ſhort by ſtimulant and antiſpaſmodic medicines. Of theſe, opium, in its various preparations, is one of the moſt effectual; and its efficacy is conſiderably aided by a combination with the more diffuſible ſtimulants, eſpecially with æther and ammonia, or the volatile alkali. It is moſt commonly not difficult to force the patient to ſwallow twenty or thirty drops of ſulphuric æther and of tincture of opium, in any liquid, at the commencement or during the continuance of the fit; and this is frequently followed by a ſpeedy ceſſation of the ſpaſmodic motions. Various other ſtimulant medicines, eſpecially thoſe of ſtrong and pungent odour, may be adminiſtered with good effect under the ſame circumſtances; ſuch are the preparations of valerian, muſk, caſtor, camphor, aſſa-fœtida, oil of amber, oleum animale, &c. At the ſame time, any ſtrong impreſſion made upon the nervous ſyſtem will frequently arreſt the progreſs of the paroxyſm; as the application of any ſtrong-ſmelling ſubſtance to the noſtrils, ſuch as burning feathers, and volatile ſalts. The ſtimulus of heat may likewiſe be reſorted to for the relief of the paroxyſm, when it is obſtinate; and it may be applied to the whole body, by means of the warm bath; or to the lower extremities, in the way of pediluvium.

After the paroxyſm is over, the means for fulfilling the *ſecond* indication muſt be adopted, in order to prevent relapſes: and as the principal prediſpoſing cauſe and the leading feature of the hyſterical habit, (the great mobility of the nervous ſyſtem,) is connected with the oppoſite conditions of plethora and of inanition or debility, the firſt object will be to correct this prediſpoſition, by the means adapted to the removal of the one or the other of theſe conditions reſpectively. In robuſt and plethoric habits, the adherence to a moderate ſyſtem of living, to a light and ſpare diet, chiefly of vegetable matters, or weak animal broths, which may be taken in ſufficient quantity to diſtend the ſtomach, and relieve the ſenſation of inanition, without affording a copious nutriment, muſt be ſtrongly recommended. The uſe of ſtrong cathartics for this purpoſe is deprecated by Sydenham; becauſe the irritation of theſe medicines, and the ſudden depletion which they occaſion, when draſtic, are liable to excite the paroxyſms, in the mobile conſtitution of hyſterical perſons, and thus to produce the evil which it is the object of medicine to prevent. With a view to reduce the ſtrength and fulneſs of the habit, the conſtant repetition of hydragogue purgatives is ſurely not adviſable; but for other purpoſes they are requiſite, and ſhall be mentioned preſently. The gradual abſtraction of nutriment is the ſafeſt method of reducing the plethoric condition, eſpecially when combined with regular exerciſe. In the oppoſite ſtate of conſtitution, in thin ſpare habits, the oppoſite method of repleniſhing the ſyſtem by nutritious and full diet will neceſſarily be reſorted to, attending at the ſame time to the uſe of exerciſe. Sydenham obſerves that thin and bilious habits often derive the moſt eſſential benefit from a *diet of milk*, and that "ſome women have been cured of long and obſtinate hyſteric diſorders, which had baffled all the endeavours of the phyſicians, by living on milk only for ſome time." The hyſteric *colic*, he ſays, has eſpecially been removed by this diet, which, being much eaſier of digeſtion than a more heterogeneous mixture of food and drink, affords leſs irritation to the alimentary canal. On the whole, indeed, milk, as it partakes of a middle nature between that of the animal and vegetable aliments, and being in its qualities nearly aſſimilated to the chyle, affords the beſt means of reſtoring ſtrength to valetudinarians, and thoſe of weak digeſtive powers, where it agrees with the individual conſtitution. But where the debility is not ſo great, a moderate quantity of animal food, with ſome wine or fermented liquors, will be requiſite.

When the ſtate of plethora has been corrected, or pretty free evacuations have been made, and ſtill more particularly when the habit is ſpare and feeble, various tonic remedies are to be reſorted to, with a view to leſſen the irritability and to improve the general ſtrength of the conſtitution. Among tonic remedies, the metallic medicines have been found very ſerviceable, and eſpecially the various preparations of *iron*. After evacuations, and in debilitated habits without any previous evacuation, Sydenham preſcribed ſome chalybeate medicine to be taken for thirty days, conſidering it one of the moſt effectual ſtrengtheners. He preferred, as Baglivi, Hoffmann, and other able phyſicians have alſo done, to give the iron in ſubſtance; and as he affirms, he had never found or heard that it injured any one, who uſed it in this manner, ſo much experience had convinced him that it cures with more expedition and certainty than any of the common preparations. Dr. Cullen, however, gave the preference to the ſalts of iron, ſuch as the ſulphate and tartrite, and the ammoniated iron. The oxyd, which is precipitated by adding an alkali to a ſolution of the ſulphate of iron, and is in a ſtate of impalpable powder, is a very convenient form for exhibition. The *chalybeate waters* have been alſo drank with great benefit in hyſterical caſes; but, as has been before obſerved, the very minute portion of iron, contained in theſe waters, ſeems ſcarcely ſufficient to produce thoſe beneficial effects; and much of the advantage, gained during a courſe of the waters, is to be aſcribed to the other concomitant circumſtances, which tend to re-eſtabliſh the general health; namely, the conſtant exerciſe, the early and regular hours, the cheerful ſociety, and the various amuſements, which divert the attention of the patient from brooding over her feelings. See HYPOCHONDRIASIS.

Many other tonic and corroborant medicines, both of the metallic and vegetable claſſes, have been employed with benefit to reſtore the general ſtrength of hyſteric patients. Such are the oxyd and ſaline combinations of zinc, the ammoniated copper, and even the nitrate of ſilver, which have been adminiſtered in the intervals between the paroxyſms of *epilepſy* (which ſee). But the vegetable tonics, as being on the whole more ſafe, have generally had the preference; among theſe the *cinchona*, or Peruvian bark, ſtands moſt eminent for its ſtrengthening qualities. Where the ſtomach is particularly affected, the bark may be advantageouſly combined with ſome of the more aromatic bitters, all of which poſſeſs more or leſs of a tonic power; ſuch as the bark of the *caſcarilla*, the roots of gentian, and colombo, a powder or extract of the flowers of chamomile, &c. Sydenham conſiders the Peruvian bark as next to ſteel in its beneficial operation upon hyſterical females, and eſpecially in that form of it in which violent convulſions take place, and the patients beat their breaſts; or, in other words, where the regular paroxyſms occur with conſiderable violence. He likewiſe recommends an infuſion of gentian, angelica, wormwood, centaury, orange-peel, and other bitters, in *canary*, to be taken in the quantity of a few ſpoonfuls three times a day.

"But," the ſame intelligent phyſician remarks, "the beſt thing I have ever found for ſtrengthening and cheering the ſpirits, is riding on horſe-back ſome hours almoſt every day." This exerciſe, indeed, appears to have been conſidered by Sydenham as a *panacea* in almoſt all chronic diſorders; and, although confirmed conſumption may not yield to it ſo readily as his obſervations might lead us to expect, we are perſuaded, that in all diſeaſes, in which the alimentary and chylopoëtic viſcera are chiefly diſordered, this mode of exerciſe, ſteadily perſevered in, affords the moſt certain relief.

In attempting to reſtore the general ſtrength, and to leſſen the irritability of the nervous ſyſtem, all thoſe expedients, which are now well underſtood as being conducive to health, ſhould be employed with regularity and perſeverance. The forms of exerciſe, as well as the quantity of it, ſhould be proportioned to the ſtrength of the patient, and increaſed as the increaſing ſtrength renders it capable of being taken with ſlight fatigue. The clothing ſhould alſo be regulated, with attention to the varying conditions of the atmoſphere; and eſpecially with care, that in chilly weather, the deviations from the mean may be always on the ſide of warmth; the attempts to harden the conſtitution, in habits extremely delicate and irritable, being as pernicious as they are abſurd in principle. All anxieties and conſiderable emotions of the mind ſhould be avoided, as far as poſſible, and the cauſes of them removed. And there are circumſtances at times, which render it adviſable to change the ſexual condition of the patient, by marriage; by which the mental ſtate in ſome caſes may be probably relieved, and the uterus, being called upon to perform its natural functions, may likewiſe be reſtored to a more healthy condition.

From what has been ſaid above, in regard to the deceptive forms of the irregular hyſteria, when it mimics, as it were, the various organic diſeaſes, according to the organ in which it takes its ſeat, we by no means wiſh to miſlead the inexperienced into a belief, that theſe organs are not often ſeriouſly affected, and that active remedies are not often to be applied to them under ſuch diſorders. On the contrary, Sydenham has mentioned the hyſteric apoplexy as being ſometimes fatal. All that is to be underſtood by calling theſe local organic attacks *hyſterical*, is, that where they occur in a conſtitution, in which either imperfect paroxyſms of hyſteria, or the great nervous mobility and variable ſpirit of the hyſteric habit appear, in ſuch caſes the ſymptoms are to be conſidered as much leſs formidable than thoſe of ordinary organic diſeaſe, and as likely to yield more readily to remedies, which therefore require to be uſed with leſs activity and vigour, and to be repeated with more caution. Whenever the individual organs and their functions are greatly diſordered, it is the duty of the phyſician not to omit the remedies which experience has ſhewn to be effectual in reſtoring them to health in other caſes; watching, at the ſame time, the various concomitant appearances which may indicate the peculiar ſtate of the habit, and may lead him to diſcriminate the counter-indications. Such diſcrimination, however, is not peculiar to the treatment of hyſteria; it is in all diſeaſes requiſite, and the poſſeſſion and exerciſe of it conſtitute the principal characteriſtic of an experienced phyſician.

Before we conclude, we muſt obſerve, that the apprehenſions which Sydenham and many other phyſicians have entertained, relative to the danger of uſing purgatives freely in hyſteria, appear to have been carried to a degree far beyond what unprejudiced obſervation would lead us. In this, as in many other diſeaſes in which the alimentary canal is much deranged, a free purgation is not only ſafe, but moſt beneficial; and a conſiderable diſcharge of dark, offenſive, and unnatural fæces is often thus procured. Dr. Hamilton affirms, that he has adopted this practice with great ſucceſs, calling in at the ſame time the aid of fœtid and tonic medicines, which, however, he conſiders as merely ſubſidiary. At all events, though Dr. Hamilton may have kept one indication too excluſively in view, yet the leſſon which he has taught us, to unload the bowels in all theſe nervous caſes, is doubtleſs extremely important. See his Obſ. on the Utility of Purgative Med. 2d edit. chap. vii.

Hystericus *Lapis*, in *Natural Hiſtory*, a name given to an American ſtone, called alſo *lapis uterinus*, ſuppoſed to be famous for its virtues againſt diſorders of the womb, externally applied. It is black, and capable of a fine poliſh.

Hystericus *Clavus*. See Clavus.

HYSTERITIS, in *Medicine*, from ὑστερα, the *womb*, with the termination *itis*, uſed to denote inflammation, ſignifies inflammation of the womb. Sauvages, and ſome other writers, have employed the term *Metritis*, from μήτρα, alſo ſignifying the *womb* or *uterus*, to denote the ſame diſeaſe. Noſol. Method. Claſs iii. Gen. 15.

The uterus is obviouſly liable to ſuffer inflammation, like the other viſcera of the body, from the common cauſes of inflammatory diſeaſe. In the unimpregnated ſtate, however, it is leſs frequently attacked by this diſorder than moſt of the neighbouring organs; and ſeldom, if ever, is thus affected, except about the periods when its veſſels are in a ſtate of increaſed action, in conſequence of the occurrence of the menſtrual diſcharge. At theſe periods, when not only the uterine ſyſtem, but the conſtitution in general, undergoes a ſlight erethiſm, or tendency to febrile excitement, ſudden expoſure to cold, violent exerciſe, great heats, or very high feeding, occaſionally bring on inflammation in the womb; more eſpecially in females of plethoric habit, and ſtrong fibre, who are accuſtomed to a ſyſtem of diet above the rules of juſt temperance. Where the uterus has become ſubject to inflammation in this way, it appears often to become unfit for the office of conception, and leaves the patient childleſs.

The moſt frequent cauſe of inflammation of the womb, however, is the irritation or injury which it is liable to ſuffer during the proceſs of parturition or abortion. When it is conſidered, indeed, how much preſſure different parts of this organ neceſſarily undergo, during theſe proceſſes, even by the long continued actions of the uterus itſelf upon the body of the child; and that, in the early part of labour, it not unfrequently occurs, that the lower ſegment of the uterus is protruded into the cavity of the pelvis, along with the head of the child, and in this ſituation is ſqueezed between the head and the ſides of the pelvis; (not to mention the occaſional neceſſity of uſing inſtruments;) it muſt be obvious that many cauſes of violence will be applied in a natural labour, and more in difficult and preternatural caſes. Perhaps the free diſcharge of the *lochia*, which is a neceſſary conſequence of the ſeparation of the *placenta*, anſwers the ſecondary purpoſe of local depletion, and thus, like a copious blood-letting inſtituted by art, prevents the evils which would otherwiſe be very likely to enſue. This ſuppoſition is rendered farther probable, from the circumſtance that inflammation of the uterus, when it comes on a few days after child-birth, commonly ariſes where the patient has been expoſed to cold, by being taken out of bed too early, (a practice deſervedly reprobated by Sydenham,) and is connected with a ſuppreſſion of the lochial diſcharge. See

Clarke's Eſſays on the Management of Pregnancy and Labour, &c. p. 59.

Inflammation of the ſubſtance of the uterus, when it exiſts ſimply, is tolerably well marked by its ſymptoms. It uſually begins about the ſecond or third day after delivery, and is firſt known to exiſt by a ſenſation of pain felt at the lower part of the abdomen, which gradually increaſes in violence, and is diſtinguiſhable from *after-pains* by its conſtancy. After-pains are intermittent, like the pains of labour, depending, like them, upon contractions of the uterus; but the pain of inflammation, ariſing from the uninterrupted action of the veſſels, is neceſſarily unremitting. The patient complains much of any preſſure applied externally to the region of the uterus; and this organ feels larger than common under the hand, as well as much harder, reſembling almoſt a ſtone in firmneſs. Marks of conſtitutional affection ſoon appear in the increaſe of heat over the whole body, a white and dry tongue, thirſt, head-ache, a hard, full, and ſtrong pulſe, (when the diſeaſe occurs in full habits,) and in all caſes a frequency of pulſe, from 100 to 120 ſtrokes in a minute. Very ſoon after the attack, the ſtomach is uſually affected with ſickneſs and vomiting; but this ſymptom is not invariably preſent. There is commonly a conſiderable degree of pain in the back, ſhooting round the pelvis to the groins, and down the thighs. Not only the lochial diſcharge, but alſo the ſecretion of milk is for the moſt part interrupted. The bowels are variouſly affected; often coſtive in the commencement of the diſeaſe, but frequently very looſe as it advances. The urine is commonly high-coloured, depoſiting ſometimes a pink-coloured ſediment, when it can be ſeen unmixed with the uterine diſcharges. It will ſometimes be found, when the diſeaſe has communicated with the neck of the bladder, or when the uterus and bladder have ſuffered, that ſuppreſſion of urine will take place, ſo that the catheter muſt be employed two or three times a day to draw it off. On the other hand, we have ſeen the inflammation apparently extend to the kidnies, in which caſe no urine was ſecreted for two or three days; yet the patient experienced the ſenſation of an urgent deſire to make water, probably from the inflammation being likewiſe communicated to the neck of the bladder. If the inflammation is very great, it may ſpread to the peritoneum, covering the fundus of the uterus, and lining the cavity of the belly; in which caſe there is great ſwelling, tenſion, and ſoreneſs of the belly, and other new ſymptoms ariſe, ſuch as characterize the child-bed fever, deſcribed in another place. See PERITONITIS *Puerperarum*.

In the progreſs of the diſeaſe, ſlight ſhiverings frequently take place at different times in the day, while the acuteneſs of the pain is diminiſhed, and the face of the patient becomes occaſionally fluſhed. Theſe ſymptoms, together with the increaſed frequency and weakneſs of the pulſe, mark the tendency of the diſeaſe either to ſuppuration, or to a dangerous failure of the vital powers. The tongue puts on a fiery red or ſcarlet appearance, which is often followed by aphthæ: ſymptoms of great general irritation ſucceed; and the patient is often cut off in a ſhort time. Now and then, however, a flow of fœtid lochia relieves theſe ſymptoms, the pulſe becomes leſs frequent; the fluſhings more rarely appear; the tongue grows paler, and the ſkin, which before had been hot and dry, now relaxes and is cooler; a ſpontaneous diarrhœa comes on, and the patient recovers. (Clarke, loc. cit.) The caſe is more favourable, and the proſpect of recovery greater, where theſe ſhiverings and fluſhings have never occurred; but where the uterus gradually becomes ſofter, and leſs tender on preſſure, the lochial diſcharge returns in its uſual quality and quantity, and the ſecretion of milk begins again.

Of all the acute diſeaſes, to which women are liable in the puerperal ſtate, inflammation of the womb appears, on the whole, to be the leaſt fatal; partly, perhaps, becauſe the pain and fever accompanying it, at a time when the patient is neceſſarily under the care of her medical attendant, ſpeedily call for the application of remedies. When the diſeaſe deſtroys life, it is uſually by ſymptoms of exceſſive irritation: ſometimes it goes on to ſuppuration; but rarely, it would ſeem, to mortification. It is true, as Dr. Clarke obſerves, that mortification has been often deſcribed as occurring in the uterus; but he is ſatisfied from experience that this has been chiefly ſaid to happen by perſons not habituated to the examination of the bodies of women who have died in child-bed, and who have miſtaken the appearance of that part of the uterus, to which the placenta had adhered, for gangrene: whereas, it is commonly only the remainder of the maternal portion of the placenta, and of the coagula of blood formed at the extremities of the large veſſels of the uterus, upon the ſeparation of the placenta; and a very little attention, by gently ſcraping off this ſubſtance, will detect the ſound internal ſurface of the uterus beneath.

On diſſection, after death produced by *hyſteritis* in puerperal women, the uterus is commonly found very firm in its ſubſtance, but larger than when naturally contracted. Upon cutting into it, *pus* is often found, which is ſituated in the large veins, and not in any circumſcribed cavity, like that of an abſceſs. Inflammation is often obſerved running along the Fallopian tubes, and into the ovaria, which when cut open are found loaded with blood. Pus is alſo ſometimes found in the cavity of the Fallopian tube, as well as in the ſubſtance of the ovaria, which are in ſome caſes diſtended by inflammation and matter, ſo as to equal in bulk a pigeon's egg. When the inflammation has exiſted in the uterus ſimply, little or no extravaſated or ſecreted fluids have been found in the cavity of the abdomen: the peritoneal ſurfaces have alſo been diſcovered free from diſeaſe in ſome caſes. In others, however, the peritoneum which covers the uterus has been obſerved to be partially inflamed, as well as that covering the poſterior part of the bladder. Clarke, loc. cit. Baillie, Morbid Anatom. p. 364, 2d edit.

When the ſymptoms of inflammation of the uterus concur with the puerperal ſtate, or ſevere abortion, little doubt will ariſe as to the ſeat of the diſeaſe. But when it occurs in the unimpregnated ſtate, the ſymptoms may be miſtaken for thoſe of inflamed bowels, kidnies, or bladder, if not very attentively inveſtigated. When, however, we obſerve a woman complaining of a burning pain, with a ſenſe of weight and diſtention in the lower part of the belly, the pain being conſtant, fixed, and throbbing; when there is alſo a pain in the loins, frequently ſhooting round the pelvis to the groins, and down the thighs, and in addition to theſe, an acute fever, with ſickneſs at the ſtomach, and extreme reſtleſſneſs, little doubt can remain reſpecting the exiſtence of inflammation in the uterus. An examination *per vaginam*, when the *os uteri* will be found extremely tender and painful to the touch, will more completely decide the matter, where it is permitted. The inflammation, however, is liable to become complicated, in this caſe too, by extending to the kidnies, bladder, and other contiguous parts; and a degree of ſtrangury and *teneſmus* (or fruitleſs deſire to go to ſtool) is liable to occur from the mere vicinity of the uterine irritation.

Cure of Hyſteritis.—As the diſeaſe, therefore, is often extended to different organs at the ſame time, and the ſymptoms muſt neceſſarily be rather complicated, the functions of all the ſuffering organs being in ſome meaſure deranged, an accurate diſtinction of the ſeat of the diſorder is often difficult. This, however, is the leſs important, as the ſame remedies will remove the inflammation, in whichſoever viſcus it may occur. Of theſe, *blood-letting* is the moſt efficacious; and, even in the puerperal ſtate, in ſtrong conſtitutions, it ſhould be early and liberally employed. In the diſeaſe happening independent of parturition, it cannot be omitted with ſafety, perhaps, under any circumſtances; but the repetition of it muſt be determined by the conſtitution of the patient, the violence of the ſymptoms, and the effect of the previous bleeding on the diſeaſe. It may frequently be found neceſſary a ſecond and a third time. But in leſs robuſt habits, it will be expedient, if the ſymptoms, although diminiſhed, have not been entirely removed by the firſt bleeding, to take away more blood by applying ſix or more leeches, incloſed in a baſin, to the belly, or by cupping the ſkin of the abdomen. *A bliſter* may be alſo applied to the belly, as near the ſeat of the pain as may be. Dr. Clarke, however, is of opinion that theſe applications are not ſo beneficial in this affection, as in ſome other inflammatory diſorders; and thinks that he has often obſerved them to increaſe the frequency of the pulſe, and the irritation in the ſyſtem at large. At the ſame time, the decided advantages obtained from bliſters, in peripneumonies and other internal inflammations, lead him to ſpeak heſitatingly againſt the general employment of them. Gentle *cathartics*, eſpecially of the ſaline claſs, are evidently uſeful in the caſe of hyſteritis, unconnected with child-birth; but in that which follows delivery, a courſe of purging is not to be recommended. It is always right, indeed, in the firſt inſtance, to procure two or three evacuations from the inteſtines; but, afterwards, it will generally be enough to preſerve the regular motions of the bowels, by giving, from time to time, ſmall quantities of caſtor oil, or a little rhubarb mixed with ſome ſaline purgative. Dr. Clarke ſtates this objection to long continued purging, that it has the effect of preventing that gentle perſpiration, which, if it can be produced and kept up, does more towards curing the diſeaſe than any internal remedy can effect. With a view of producing this ſalutary determination to the ſkin, ſmall doſes of antimony and opium, or the compound powder of ipecacuanha, which bears the name of Dr. Dover, with the addition of a little rhubarb, and an occaſional ſaline draught, may be uſefully adminiſtered. In caſe a ſpontaneous diarrhœa ſhould come on, it ſhould not be interfered with, farther than taking care that the ſtrength of the patient be not too much reduced by it. Except where there is reaſon to ſuſpect the exiſtence of undigeſted or indigeſtible aliment in the ſtomach, the action of vomiting ſhould always be avoided; inaſmuch as it conſtantly increaſes the pain by the agitation which it occaſions, and the preſſure made by the muſcles of the abdomen on the inflamed uterus.

It is ſcarcely neceſſary to add, that, during the whole courſe of the diſeaſe, every thing heating and ſtimulating ſhould be cautiouſly avoided; that the food of the patient ſhould be of a mild and digeſtible nature, conſiſting of liquid and vegetable ſubſtances, and her drink watery and diluent, every ſort of animal food, and of fermented and ſpirituous liquors, being abſtained from.

As hyſteritis occurs, both connected with and independent of parturition, particularly in thoſe who indulge in full diet, and in the uſe of heating food and liquors; ſo the prevention of the diſeaſe muſt depend principally upon temperance and regularity in this reſpect. In the former caſe, this end may be obtained by attention to the proper management of the woman both before and during labour.

If the diminution of pain, and the acceſſion of ſhiverings, announce the commencement of ſuppuration, little, it is to be feared, can be done by medicine. Under ſuch circumſtances, a great proportion of patients will be carried off. The moſt favourable tendency of the ſuppuration will be, when the pus is in the veins of the uterus, or in the Fallopian tube, that it may eſcape into the cavity of the uterus. The only means within the power of the phyſician, in this caſe, are to recommend a milk-diet, or ſome other light and nutritious aliment, and to ſoothe the irritation and pain by moderate doſes of narcotic medicines.

HYSTERIUM, in *Botany*, a name given by Perſoon and others to a ſpecies of Fungi, compoſed of various ſpecies, amongſt which is the *Lichen pulicaris* of preceding authors, but this name will probably not be retained.

HYSTEROCELE, in *Surgery*, a rupture, or hernia, containing the uterus. The term is derived from ὑστηρα, *the womb*, and κηλη, *a tumour*. See Hernia.

HYSTEROCYSTICA Ischuria, a retention of urine, ariſing from the preſſure of the uterus upon the bladder.

HYSTEROLITHUS, formed of ὑστερα, *womb*, and λιθος, *ſtone*, or *Cunnolithus*, in *Natural Hiſtory*, a ſtone thus called, from its reſemblance to the external parts of generation of the female ſex. This is a ſpecies of helmintholithus in the Linnæan ſyſtem. Theſe ſtones are found in great abundance near the caſtle of Braubach, upon the Rhine, on the confines of the landgravate of Heſſe.

Hysterolithus is alſo a name given by Ol. Wormius (Muſeum, p. 83.) to the caſt or inſide impreſſion of a ſort of Anomia ſhell, as Dr. Woodward ſtates in his Letters on the Method of Foſſils (p. 10.), and thus ſhews the abſurdities of the tales which had been related of this ſtone. This ſpecies of anomia occur with mytilites, in argillaceous rubble-ſtone, or ſlate. Kirwan's Geo. Eſſays, p. 244.

HYSTEROLOGY, Ὑστερολογια, ſignifying a *diſcourſe inverted*, in *Rhetoric*, a ſpecies of hyperbaton, or a vicious manner of ſpeaking, wherein the natural order of things is inverted; called alſo by the Greeks ὑστερον προτερον; *q. d.* putting the firſt thing where the laſt ſhould be.

Thus Terence uſes *valet & vivit*, for *vivit & valet*. And Virgil *moriamur & in media arma ruamus*, for *in media arma ruamus & moriamur*. Quintilian expoſes this fault, lib. xi. cap. 2. where he ſays, *quædam——turpiter convertuntur*, *ut* ſi peperiſſe *narres*, *deinde* concepiſſe; *in quibus, ſi id quod poſterius eſt dixeris de priore tacere* optimum *eſt*.

HYSTEROPHORUS, in *Botany*. See Parthenium.

HYSTEROPOTMI, Ὑστεροποτμοι, in *Antiquity*, the ſame with deuteropotmi.

HYSTEROPTOSIS, in *Surgery*, a bearing down of the uterus.

HYSTEROTOMIA, from ὑστηρα, *the womb*, and τομος, *a ſection*, the operation of cutting through the parietes of the abdomen into the uterus, for the purpoſe of extracting the fœtus, a proceeding ſometimes neceſſary: the Cæſarian ſection.

HYSTEROTOMOTOCY, Ὑστεροτομοτοκια, an operation more uſually called the Cæſarian ſection.

HYSTRIX, in *Zoology*, a genus of mammalia, in the order Glires, the fore-teeth in which are two in number, and cut off obliquely; the grinders eight; toes either four or five; and the body covered with ſpines and hair. Theſe conſtitute the porcupine genus of Engliſh writers.

Species.

Cristata. Anterior feet four-toed; poſterior pair five-toed; head creſted; tail ſhort. S. G. Gmelin. *Hyſtrix capite criſtato*, Briſſ. *Hyſtrix*, Geſner, &c. *Stachelſchwein*, Ridinger. *Porc-epic*, Buff. *Creſted porcupine*.

The length of this ſpecies is about two feet; the head long and compreſſed; the ſnout ſhort and obtuſe; the upper lip cleft to the noſtrils; eyes ſmall, and black; ears oval, broad, and ſhort; tail conic and ſpinous; feet ſhort; hair between the ſpines cinereous; the ſpines long, ſtout, ſmooth, and annulated with black and white. The longeſt of theſe ſpines, and alſo the briſtles of the neck, it is able to erect at pleaſure. This animal is found in Aſia, Africa, and the ſouth of Europe, as Italy and Spain; it burrows in the earth, where it forms a number of convenient apartments, with a ſingle entrance. During the day time the porcupine remains in its burrows; which it leaves at night in ſearch of fruits, roots, herbs, and other vegetables of which its food conſiſts. When frightened it rolls itſelf up like the hedgehog, and preſents its formidable armament of ſpines, for it has no other means of defence, but this is alone ſufficient to repel the temerity of moſt animals that venture to attack it. The porcupine brings from two to four young at a litter, is eaſily tamed, and the fleſh is reputed excellent for the table. There appear to be ſeveral varieties of the common porcupine.

PREHENSILIS. Feet four-toed; tail long, prehenſile, naked at the end beneath. Schreber. *Hyſtrix Americanus*, Briſſ. *Cuandu Braſilienſibus, Luſitanis Ourico cachiero*, Marcg. *Braſilian porcupine.*

A native of the woods of Brazil, New Guinea, and New Spain. This ſpecies climbs trees, feeds on fruits and ſmall birds; grunts like the ſwine, rolls itſelf up, ſleeps in the day, is eaſily tamed, and is taken for the ſake of its fleſh, which is eſteemed an article of food. The length of the body is about fifteen inches; the tail ſeven inches; the whiſkers are long and white; feet cinereous; claws ſtrong and black. A ſuppoſed variety, with the tail longer and ſpines ſhorter, (Hyſtrix longius caudatus, brevioribus aculeis,) is deſcribed by Barrer. Fr. équin. The animal called Hoitztlacuatzin, ſeu Tlacuatzin, by Hernandez and Nieremberg, is preſumed by Gmelin to be another variety of this kind; it has the tail ſhort and thick; a third kind is ſaid to be ſmaller than the common Braſilian porcupine, and has the head white.

MEXICANA. Tail long, prehenſile; hind feet four-toed; ſpines nearly concealed among the long hair. *Mexican porcupine.*

Length eighteen inches; tail nine inches; body duſky. This kind inhabits Mexico.

DORSATA. Interior feet four-toed; hind feet five-toed; back ſpinous. Schreber. *Hyſtrix piloſus Americanus*, Cateſby. *Cavia Hudſonis*, Klein. *Urſon*, Buffon. *Hudſon's-bay or Canadian porcupine.*

Inhabits North America; the body is ruſty brown above; tail beneath white at the tip; and the ſpines nearly concealed among the hair. This animal is nearly the ſize of the hare; it digs holes under trees, and feeds on fruits and the bark of the juniper. The Canadian porcupine is ſometimes found entirely white.

MACROURA. Feet five-toed; tail very long; ſpines clubbed or jointed. Schreber.—*Porcus aculeis ſylveſtris*, Seba.

The ears in this ſpecies are ſhort and naked; the tail the length of the body, the tip crowned with a tuft of long, knotted, ſilvery hairs; body ſhort and thick; ears ſhort and naked; and the eyes large and bright. Inhabits the woods of the iſlands in the Indian ocean.

HYTH, or HITH, a port, wharf, or little haven, to embark or land wares at. Such is *Queen-hith*, &c.

HYTHE, or HITHE, in *Geography*, a market town and one of the principal Cinque Ports, is ſituated in the pariſh of Saltwood, hundred of Heane, and county of Kent, England. Its name ſignifies, in Saxon, a port or haven; and it was anciently of far greater importance, as a maritime town, than at preſent. Leland ſays, "it hath bene a vere great towne yn length, and conteyned iiii paroches, that now be clene deſtroied; that is to ſay, St. Nicolas paroche, Our Lady paroche, St. Michael's paroche, and our Lady of Weſthithe."—And again—"to cownt from Weſthive to the place wher the ſubſtans of the towne ys now, ys ii good myles yn length al along on the ſhore." He mentions a fire in the reign of Edward II., which deſtroyed nearly four hundred houſes, and was followed by a peſtilence; ſo that the town was greatly diminiſhed. In the beginning of the next century, it again ſuffered much by ſimilar viſitations. At the time of the maritime ſurvey, in the reign of Elizabeth, there were 122 inhabited houſes in Hythe, and perſons "lacking habitation" ten: its ſhipping conſiſted of "ſeventeen traivellers, at five tuns; ſeven ſhoters, of fifteen tuns; three crayers, of thirty tuns; and four crayers, of forty tuns." Since this ſurvey, the haven has been wholly loſt, and the ſea beach is now nearly three quarters of a mile from the town. According to the returns under the act of 1801, the number of houſes in Hythe was 217; that of inhabitants 1365. The houſes are chiefly compriſed in one long ſtreet, running parallel with the ſea; but having two or three leſſer ones branching off at right angles. The civil government of the town is veſted in a mayor, twelve jurats, and twenty-four common-council-men; by whom, together with the freemen, the repreſentatives are elected; the number of voters being about 180. The firſt return of barons to parliament from this port, was in the forty-ſecond year of Edward III. The church occupies a very elevated ſituation on the acclivity of the hill above the town. It is built in the form of a croſs, with a tower at the weſt end, and appears to have had originally another tower, riſing above the roof, from the interſection of the nave and tranſept. The weſt tower, with the ſouth end of the tranſept, was rebuilt between the years 1748 and 1751, at which time the whole church underwent a general repair. Near the altar, on the ſouth ſide, but partly concealed by the wainſcotting, are four beautiful ſtone ſeats, with trefoil heads, and a range of circles and quatrefoils above them. The church-yard commands a fine view of the ſea, and coaſt of France. Near the middle of the principal ſtreet are the court-hall and market-place; and in one of the ſtreets leading towards the beach, on the oppoſite ſide, is a ſmall theatre. In this pariſh are two hoſpitals, or alms-houſes, of ancient foundation; the one called St. John's, the other St. Bartholomew's. The former was founded for lepers previouſly to the year 1336, but at what particular era is uncertain; the other was built by biſhop Hamo Noble, ſurnamed De Hythe, from his having been born in the town; and his deed of foundation, which is printed in the Regiſtrum Roffenſe, deſcribes it as "erected on the ſpot where he and his anceſtors firſt had their origin." Beſides the Martello towers that have been recently erected along this coaſt, there are ſeveral ſmall forts on the beach in this vicinity, which were built ſhortly after the commencement of the laſt war. On the heights immediately above Hythe are extenſive ranges of barracks for infantry, erected ſince the beginning of the preſent century; and near theſe are numerous mud-wall cottages for the wives and families of the ſoldiers. Other barracks, of a temporary kind, are within the town. Hythe is diſtant from London 67 miles; and has a weekly market on Thurſday.

About one mile north-weſt from Hythe ſtands Saltwood caſtle, the original foundation of which has been attributed to the Romans, though probably on inſufficient authority. Kilburne ſays, that it was erected by Oeſc, ſon of Hengiſt: and Groſe ſtates that "on examining theſe ruins, every ſtone of them evidently appears to have been laid by the Normans."

mans." This laſt aſſertion is not only diſproved by hiſtorical authorities, but is demonſtratively erroneous; as the principal buildings now ſtanding are of a much later date, and in a different ſtyle of architecture. Haſted ſtates that it was rebuilt by Henry de Eſſex, baron of Ralegh, and ſtandard-bearer to Henry II. Archbiſhop Courtenay, who was promoted to the ſee of Canterbury in the fifth year of Richard II., expended great ſums in rebuilding this caſtle, to which he annexed a park, and made it his uſual place of reſidence. The ſcite of this caſtle was well choſen; the walls encircle an extenſive area, of an elliptical form, ſurrounded by a very broad and deep moat, partly natural, and partly artificial. The entrance into the firſt court was by a gateway, now in ruins, defended by a portcullis: the outer walls were ſtrengthened by ſeveral circular and ſquare towers, all of which are dilapidated.

About half a mile from Saltwood, weſtward, is Sandling, the new ſeat of William Deedes, eſq. who has built here a large manſion, under the direction of Bonomi, on a hill which commands fine views of the ſea, and yet looks down on its own demeſne, conſiſting of wooded vallies, and recluſe rural ſcenery, poſſeſſing many beauties. Haſted's Kent, vol. iii. Beauties of England and Wales, vol. viii.

I and J.

I, The ninth letter of the Engliſh alphabet, may be conſidered both as a vowel and a conſonant; agreeably to which two different powers, it has two different forms; though, ſince the vowel and conſonant differ in their form as well as ſound, they may, as Dr. Johnſon obſerves, be more properly accounted two letters.

The Hebrews call the *j* conſonant *jod*, יוד, from יד, *hand* and *ſpace*; becauſe it is ſuppoſed to repreſent the hand clenched; ſo as to leave the ſpace underneath void. With them it was pronounced as the conſonant *y*, as it ſtill is among the Germans, and ſome other people. The Greeks had no *j* conſonant, and for that reaſon uſed their vowel *i* inſtead of it, as coming the neareſt in ſound. The letter *i* was uſed as a conſonant among the Latins. In Engliſh *j* conſonant has invariably the ſame ſound with that of *g* in *giant*; and ſerves to mollify that of the vowels; as in *Jew*, *juſt*, *jovial*. *I* vowel varies in its ſound: in ſome words it is long, as *fine*, *thine*, &c. In others ſhort, as *fin*, *thin*. Prefixed to *e*, it makes a diphthong of the ſame ſound with the ſoft *i*, or double *ee*, in *field*, *yield*, except in *friend*, which is pronounced *frend*. Subjoined to *a* or *e*, it makes them long, as *fail*, *neigh*; and to *o* makes a mingled ſound, which approaches more nearly to the true notion of a diphthong, or ſound compoſed of the ſounds of two vowels, than any other combination of vowels in the Engliſh language, as *oil*, *coin*. The ſound of *i* before another *i*, and at the end of a word, is always expreſſed by *y*. Johnſon.

The vowel *i*, according to Plato, is proper for expreſſing fine and delicate, but humble things; on which account that verſe in Virgil,

> "Accipiunt inimicum imbrem, remiſque fatiſcunt,"

which abounds in *i*'s, is generally admired.

The vowel *i* was the only vowel which the Romans did not mark with the daſh of a pen, to ſhew when it was long; inſtead of which, to denote it long, they uſed to make it bigger than ordinary, as in *PIſo*, *VIvus*, &c. According to Lipſius, they often repeated it when it was to be long, as in *dii*. They ſometimes alſo denoted the length of this letter by adding *e* to it, and turning it into a diphthong, as *divei* for *divi*, *omneis* for *omnis*, &c.

I, in *Grammar*, *ik*, Gothic, ic, Saxon, *ich*, Dutch, is a pronoun perſonal. By Shakſpeare I is more than once written for *ay*, or *yes*: *e. g.*

> "Did your letters pierce the queen?"
> — I, ſir; ſhe took 'em and read 'em in my preſence,
> And now and then an ample tear trill'd down."

I, in *Logic*, denotes a particular affirmative propoſition.

I was anciently a numeral letter, and ſignified a hundred, according to the verſe.

> "I. C. compar erit, et centum ſignificabit."

I, in the ordinary way of numbering, ſignifies one; and when repeated, it ſignifies as many units as it is repeated times. When put before a higher numeral, it ſubtracts itſelf, as IV, IX, &c. but when ſet after it, it is added as often as it is repeated; as VI, XI, VIII, XIII, &c.

In abbreviatures and ciphers, I frequently repreſents the whole word Jeſus, whereof it is the firſt letter.

Neither the long nor the ſhort I, the conſonant *ja*, nor the vowel I, is the initial of any technical term in *Muſic*.

I, in the *French Coinage*, characterizes the money of Limoges.

JA, in *Geography*, a town of Sweden, in Eaſt Bothnia; at the mouth of the river Jaſari; 12 miles N. of Ulea.

Ja, *St.*, *St. Ya*, or *St. Agatha*, a town of France, in the department of the Seſia, ſituated on the Naviglio, containing five churches. N. lat. 43° 22′. E. long. 8° 8′. See *St.* Agatha.

JAATSURO, a town of Japan, in the iſland of Niphon; 65 miles N.W. of Jedo.

JAB, a town of Africa, in the kingdom of Woolli, ſituated on the river Gambia.

JABA, a town of Africa, in Bambarra, on the Niger. N. lat. 13° 15′. W. long. 4° 45′.

JABADII Insula, an ancient name given to Sumatra, according to M. D'Anville, though others have ſuppoſed it to be Java. Ptolemy ſpeaks of this iſland and ſays, that it abounded with gold. He calls the capital Argentea, the poſition of which ſeems to correſpond with that of Achen.

JABAJAHITES, a ſect among the Muſſulmen, who, according to Ricaut, teach, that God is not perfectly wiſe; that his knowledge does not extend to every thing; and that time and experience have furniſhed him with the knowledge of many things whereof he was before ignorant. Thus, ſay they, not being appriſed from all eternity of every event that ſhall happen in the world, he is now obliged to govern it according to the chance and occurrence of thoſe events.

JABARABA, in *Geography*, a town of Brazil, in the government of Minas Geraes; 32 miles S. of Villa Rica.

JABARIANS, a ſect of Mahometans, in direct oppoſition to the *Kadarians*, diſtinguiſhed by denying free agency in man, and aſcribing his actions wholly to God. They take their denomination from Al Jabr, which ſignifies neceſſity or compulſion, becauſe they maintain that man is neceſſarily and inevitably conſtrained to act as he does, by force of God's eternal and immutable decree. Some of theſe, who are more rigid in their opinion, are called *pure* Jabarians, and others, who are more moderate, are called *middle* Jabarians. The former will not allow men to have any power at all; aſſerting that man can do nothing, and that he is deſtitute of power, will, or choice, as much as an inanimate agent. They aſſert alſo, that rewarding and puniſhing are the effects of neceſſity, and they alſo ſay the ſame of the impoſing of commands. This was the doctrine of the "Jahmians," the followers of Jahm Ebn Safwan, who likewiſe held that paradiſe and hell will vaniſh, or be annihilated, after thoſe who are deſtined to theſe habitations ſhall have entered them, ſo that at laſt there will be no exiſting being beſides God. The moderate Jabarians aſcribe ſome power to man, but ſuch as has no influence on the action. As to thoſe who grant the power of man to have ſome influence on the action, which influence is called "acquiſition," ſome will not allow their being denominated Jabarians; whereas others reckon them in the number of middle Jabarians, and contend for the middle opinion between abſolute neceſſity and abſolute liberty, attributing to man acquiſition or concurrence in producing the action, or in conſequence of which he gains commendation or incurs blame; and they make the "Aſharians" a branch of this ſect. To the middle or moderate Jabarians, belong the "Najarians," whoſe founder Al Haſan Ebn Mohammed al Najar taught, that God created the actions of men, both good and bad, and that man acquired them, and that man's power had an influence on the action, or a certain co-operation, which he called "acquiſition," agreeing in this reſpect with Al Aſhari; and the "Derârians," the diſciples of Derâr Ebn Amra, who alſo held that men's actions are really created by God, but that man really acquired them. The Jabarians alſo ſay, that God is abſolute Lord of his creatures, and may deal with them according to his own pleaſure; ſo that if he ſhould admit all men without diſtinction into paradiſe, it would be no partiality, or if he ſhould caſt them all into hell, it would be no injuſtice, concurring in this reſpect with the Aſharians. Sale's Prel. Diſc.

JABBEE, in *Geography*, a large town of Africa, in the kingdom of Bambarra, having in it a Mooriſh moſque, and ſituated on the Niger; 55 miles S.W. of Sego. N. lat. 13° 59'. W. long. 3° 21'.

JABBUAH, a town of Hindooſtan, in the circar of Banſwaleh; 25 miles S.S.E. of Tandla.

JABEZ, or Jabesh-Gilead, in *Scripture Geography*, a city in the half-tribe of Manaſſeh beyond Jordan, ſituated in Gilead, at the foot of the mountain ſo called. Euſebius places it ſix miles from Pella towards Geraſa.

JABI, or Yabbah, a diſtrict of Africa, on the Gold Coaſt, ſituated to the eaſt of Anta, the ſoil of which is rich and fertile; but the gold obtained here is adulterated.

JABIRU, or Jabiru-guacu, in *Ornithology*, the Mycterea *Americana;* which ſee.

JABLONOW, in *Geography*, a town of Poland, in the palatinate of Braclaw; 64 miles N.W. of Braclaw.

JABLONOWSKY, Joseph Alexander Von, in *Biography*, a Poliſh prince, who devoted himſelf chiefly to the ſciences, and, for the ſake of improvement, made ſeveral tours through Germany and France. When the troubles broke out in Poland he reſigned his ſenatorial dignity, left the country, and took up his reſidence at Leipſic, where he diſtinguiſhed himſelf not only as a friend and protector of ſcience, but as a man of great literary acquirements. He founded a ſociety which was named after himſelf, and aſſigned a liberal ſum for the purpoſe of diſtributing premiums to the authors of the beſt anſwers to queſtions propoſed on various literary ſubjects. This ſociety ſtill exiſts, holds its meetings at Leipſic, and occaſionally preſents the world with the fruit of its labours. The prince died in 1777, at the age of ſixty-five. His works are, "The Lives of twelve Generals:" written in the Poliſh language: "A Treatiſe on the Sclavonic Poetry," and ſome pieces of a ſimilar nature. Gen. Biog.

JABLONSKI, Daniel Ernest, was born at Dantzic in the year 1660: he was educated partly at Liſſa and partly at Frankfort on the Oder. He ſpent ſome time in his maturer ſtudies at Holland, and from thence he went to England, and took all the advantages which the univerſity of Oxford could afford him. On his return to his native country in 1683, he was admitted to the miniſtry, and appointed paſtor of the reformed church at Magdeburg. After ſome ſucceſſive changes he was at length appointed to be miniſter to the court of Berlin. He was extremely anxious to promote an union between the Calviniſts and Lutherans, and to introduce into Pruſſia a conſtitution of church government reſembling that of the Engliſh eſtabliſhment: but his well-meant efforts proved ineffectual. He was not however diſheartened by want of ſucceſs, but directed all his attention to the ſame ſubject twelve years afterwards. Some account of the meaſures taken in this buſineſs will be found at the end of Dr. Maclaine's tranſlation of Moſheim's Eccleſiaſtical Hiſtory. To this account is annexed "A Plan of Eccleſiaſtical Diſcipline and Public Worſhip," drawn up by Jablonſki, and ſeveral original papers. In 1706, M. Jablonſki received the diploma of doctor of divinity from the univerſity of Oxford. In 1718 the king of Pruſſia nominated him counſellor of the Conſiſtory, in 1729 member of the Directory of the reformed churches, and in 1733 preſident of the Academy of Sciences at Berlin. He died at the age of eighty, in 1741. He was author of a great number of works, chiefly theological, but his moſt important were, 1. "Biblia Hebraica, cum Notis Hebraicis et Lemmatibus Latinis ex recenſione, et cum Præfatione Latina, D. E. I." 2. "Jura et Libertates Diſſidentium in Religione Chriſtiana in Regno Poloniæ et Magno Ducatu Lithuaniæ, ex legibus Regni, et aliis Monumentis authenticis excerpta." Moreri. Moſheim.

JABLONSKY, Charles Gustavus, private ſecretary to the queen of Pruſſia, and a conſiderable naturaliſt, began his career, as an author, by the publication of "A Syſtem of all known indigenous and foreign Inſects," arranged according to the Linnæan ſyſtem, and intended as a continuation of Buffon's Natural Hiſtory. The ſhare which Jablonſky had in this work extends only to the ſeventh ſheet of the third part, relating to butterflies. His illneſs prevented him from continuing a work that demanded much labour and attention. It was carried on by Mr. Herbſt, a clergyman at Berlin; who alſo continued another work on the deſcription of the Scarabæi, begun by Jablonſky. Our author died in the year 1787, at the age of thirty-one, to the regret of his friends, who had high expectations from his talents and great aſſiduity. Gen. Biog.

Jablonsky, John Theodore, brother of D. Erneſt, was born at Dantzic in 1654. He was educated partly at Amſterdam, and partly at Berlin, from whence he was ſent to the Gymnaſium of Konigſberg, and then to Frankfort on the Oder. In 1680 he made a tour through Germany, Holland, and England, and in 1687 he accompanied the princeſs of Deſſau to Poland, where he remained till the death of the prince Radzivil, the huſband of his patroneſs. He was now appointed ſecretary at the court of the duke of Saxe-Barby, and in 1700 was elected ſecretary to the Academy of Sciences at Berlin, then newly eſtabliſhed. In 1715 he accompanied on his travels, in the capacity of tutor, Frederic William, hereditary prince of Pruſſia, and upon his return was appointed a counſellor of ſtate. He died in 1731, leaving behind him a great number of very learned works, among which was "A General Dictionary of Arts and Sciences;" which was afterwards augmented and improved by J. J. Schwabe, profeſſor of philoſophy at Leipſic. Gen. Biog..

Jablonsky, Paul Ernest, ſon of Daniel Erneſt, was born at Berlin in 1693. His great talents were diſcovered at an early period, and having ſtudied at Frankfort, and acquired a deep knowledge of theology and the Coptic language, he was admitted among the royal candidates; and at the king's expence made a literary tour through Germany, Holland, England, and France. In the courſe of his travels he had an opportunity of improving himſelf in the Coptic, particularly by conſulting the different works in that language at Leyden, Oxford, and Paris. In 1720 he was appointed profeſſor of philoſophy, and preacher to the reformed congregation of Frankfort on the Oder: in 1722, public profeſſor of theology, and afterwards member of the Academy of Sciences at Berlin. He died in the month of September, 1757. He was author of many learned and theological works; and was by his labours of much ſervice to biblical literature. Two of his principal pieces were "Rhempha Ægyptiorum Deus ab Iſraelitis in Deſerto cultus," and "Pantheon Ægyptiorum, ſive de Diis eorum Commentarius."

JABLUNKAU, in *Geography*, a town of Sileſia, in the principality of Teſchen, on the river Elſe, with an adjoining fort; 11 miles S.S.E. of Teſchen. N. lat. 49° 32′. E. long. 18° 48′.

JABOK, or Jabbok, in *Scripture Geography*, a brook on the other ſide of Jordan, whoſe ſpring was in the mountains of Gilead. It fell into Jordan, near the ſea of Tiberias, ſouth; and ſeparated the land of the Ammonites from Gaulonitis, and that of Og king of Baſhan. Gen. xxxii. 42 to 43.

JABOLPOUR Gurrah, a town of Hindooſtan, in Gurry Mundella; 28 miles E.N.E. of Gurrah.

JABOROSA, in *Botany*, a name given by Juſſieu from the Arabic appellation of the Mandrake, *Jaboroſe*, with which the plants in queſtion agree in habit, and almoſt, as Juſſieu himſelf hints, in genus. Juſſ. 125. Willd. Sp. Pl. v. 2. 1016. Lamarck. Illuſtr. v. 2. 11. t. 114. Claſs and order, *Pentandria Monogynia*. Nat. Ord. *Luridæ*, Linn. *Solaneæ*, Juſſ.

Gen. Ch. *Cal.* Perianth inferior, of one leaf, bell-ſhaped, in five nearly equal ſegments, permanent. *Cor.* of one petal, tubular, much longer than the calyx; tube nearly cylindrical; limb in five acute, ſomewhat ſpreading, ſegments. *Stam.* Filaments five, ſhort, flat, inſerted into the upper part of the tube, and ſcarcely extending beyond its orifice; anthers erect, heart-ſhaped. *Piſt.* Germen ſuperior, roundiſh; ſtyle thread-ſhaped, the length of the tube, erect; ſtigma capitate, with a ſmall point. *Peric.* and *Seeds* unknown.

Eſſ. Ch. Corolla tubular. Stamens inſerted into the top of the tube. Stigma capitate. Berry?

1. *J. integrifolia.* Lamarck. Illuſtr. t. 114.—Leaves elliptic-oblong, ſlightly toothed.—Native of Buenos Ayres, where it was gathered by Commerſon, from whoſe ſpecimens alone, of this and the following ſpecies, any thing is known concerning them in Europe. They appear to be perennial herbaceous plants, of the ſize of a primroſe, with ſeveral radical rather downy *leaves*, without any *ſtem*. *Flowers* on ſimple radical ſtalks, ſhorter than the leaves, the tube an inch and a half long, rather ſlender.

2. *J. runcinata.* Lamarck. n. 2.—Leaves lyrate. Tube of the corolla ſomewhat bell-ſhaped.—Gathered by Commerſon near Monte Video. Its lyrate, deeply toothed *leaves*, and ſhorter bell-ſhaped *flower*, much like that of *Atropa Belladonna*, ſufficiently diſtinguiſh it from the preceding.

JABOTAPITA. See Ochna.

JABOTI, in *Zoology*, the name of a remarkable ſpecies of tortoiſe found in America. The ſhell of this ſpecies is black, and has many hexangular figures marked upon it; the head and legs are brown, variegated with ſpots of a duſky greeniſh hue. The liver of this ſpecies is accounted a very delicate food.

JABOU, in *Geography*, a country of Africa, W. of Benin.

JABRIN, a diſtrict of Arabia, S.W. of Hadſjar, abounding with ſalt.

JACA, a town of Spain, in Aragon, at the foot of the Pyrenées, on the river Aragon; the ſee of a biſhop ſuffragan of Saragoſſa. This ancient town, which has a citadel built in 1592, was formerly the capital of Aragon, as it is now of a diſtrict, comprehending nearly 200 towns and villages; 45 miles N. of Saragoſſa. N. lat. 42° 29′. W. long. 0 41′.

Jaca, in *Natural Hiſtory*, the name of a kind of nut, very common in China, which is reckoned the largeſt of all yet known. It is produced from the trunk of the tree, as if the branches, however large and ſtrong, were not able to bear it; its ſhell is ſo ſtrong, that there is occaſion for an ax or hatchet to open it; and within are innumerable cells or veſicles, containing a pulp of a yellow colour, which ſurrounds a kernel like the cheſnut, that is exceedingly ſweet when ripe.

JACAMACIRI and Jacamar, in *Ornithology*. See Alcedo *Galbula*.

JACANA. See Parra *Jacana*.

JACAPA, or Jacapu. See Tanagra *Jacapa*.

JACARAY, in *Geography*, a town of Brazil, in the government of St. Paul; 50 miles N.E. of St. Paul.

JACARE, in *Zoology*. See Lacerta *Alligator*.

JACARINI, in *Ornithology*. See Tanagra *Jacarina*.

JACCA, in *Ancient Geography*, a town of Spain, in the interior of the country of the Vaſconi. Ptol.

JACCATRA, in *Geography*, one of the empires of the iſland of Java, bounded on the E. by that of Cheribon, and to the W. by the kingdom of Bantam. It was formerly governed by its own kings; but the laſt of theſe, having been ſubdued by the arms of the Dutch Eaſt India Company in the year 1619, they have ever ſince poſſeſſed it by the right of conqueſt, as ſovereigns. It is under the immediate government of the governor-general and the council of India, and all the Javaneſe of Jaccatra are therefore born the company's ſubjects. Before this revolution, Jaccatra was the capital of the empire, but Batavia, which is built near the former, is now the chief place. The Preanger lands are diſtricts which did not formerly belong to the kingdom of Jaccatra, but which have been united to the company's poſſeſſions ſince the year 1677; and the adminiſtration of them is divided between Batavia and the reſidency of Cheribon. The whole country of Jaccatra, with the Preanger lands, is 110 Dutch miles in circumference, and comprizes 30 diſtricts, containing together 33,914 families, or 203,384 inhabitants; of which the diſtrict of Batavia alone includes 19,469 families, or 116,814 inhabitants. Hence it appears, that the other diſtricts are much leſs populous, ſo that a great extent of excellent land remains uncultivated and neglected, and that which is tilled is owing to the induſtry and perſeverance of the Chineſe, who are ſettled here. The depopulation of Jaccatra has been chiefly owing to the conqueſts of the company, which having taken the capital and defeated the army of Bantam, carried away the inhabitants into the latter kingdom; in conſequence of which Jaccatra remained for a conſiderable time nearly in an uninhabited ſtate. Since the year 1753, however, the population has here been conſiderably augmented. Jaccatra is watered and fertilized by ſeveral rivers, of which the largeſt are the Sadani, or the river of Tangerang, and that of Crawang, which deſcend from the inland mountains, and flow into the ſea in a northerly direction. The river of Tangerang runs into the ſea, not far from the point of Ontong Java, and near its mouth the company have a ſmall port called the "Kwal." This river gives part of its water to a canal that ſupplies the canals and moats of the city of Batavia; but the greater part is furniſhed by other rivers. The productions of Jaccatra are principally coffee, ſugar, and rice; likewiſe indigo, cotton, yarn, turmeric, and cadjung, or lentiles, from which laſt oil is preſſed. In 1778 there were ſold in Holland the following articles, being productions of the colony of Jaccatra; *viz.* 2,000,000lbs. of ſugar, at 4 ſtivers; 2,000,000lbs. of coffee, at 11 ditto; 500,000lbs. of pepper, at 17 ditto; 100 leagers of arrack; 10,000lbs. of candied ginger; cotton-yarn to the amount of 200,000 florins, and indigo to the amount of 1000 florins. This may be taken as the annual quantity of what Jaccatra is able to furniſh for Europe, and the gain upon theſe articles is conſiderable, as none of them coſt much; the pepper and coffee nearly $2\frac{1}{2}$, and the ſugar $1\frac{1}{2}$ ſtivers per pound. Of ſugar, the company farther diſpoſe every year full four millions of pounds weight in Japan, Surat, Malabar, and other eſtabliſhments, from which they likewiſe make conſiderable profits; and about the ſame quantity, 400,000lbs. is exported in private trade, together with immenſe quantities of arrack, rice, and other articles. Stavorinus's Voyage to the Eaſt Indies, &c. vol. iii.

JACCHAGOGI, Ιακχαγωγοι, in *Antiquity*, thoſe who carried the ſtatue of the hero Jacchus in proceſſion, at the celebration of the Athenian feſtival called *Eleuſinia*. They had their heads crowned with myrtle.

JACCHUS, in *Zoology*. See SIMIA.

JACEA, in *Botany*. See CENTAUREA.

JACI, in *Geography*, a ſmall well built and populous town of Sicily, in the valley of Demona, where a great quantity of ſilk is manufactured. It was formerly called Acis. (See ACIS.) The modern town is ſituated far higher than the ancient city, if we judge from its actual elevation above the level of the ſea, and the number of ſtrata of lava which are diſcovered in deſcending the flight of ſteps, leading from this town to the Caricatore, which is below it; 12 miles N.N.E. of Catania. N. lat. 37° 40′. E. long. 15° 15′.

JACINA, a river of Naples, which runs into the gulf of Squillace, N. lat. 38° 57′. E. long. 17°.

JACINTH, in *Botany*. See HYACINTHUS.

JACK, in *Falconry*, ſignifies the male of birds of ſport. See FALCON and HAWK.

JACK, or *Pike*, in *Ichthyology*. See ESOX *Lucius*.

JACK, in *Mechanics*, is an inſtrument in common uſe for raiſing heavy timber, or very great weights of any kind. See *Plate* XXX. *Mechanics*, *fig.* 1.

But as the wheel-work of this engine is incloſed in the ſtrong piece of timber C B, the inſide of it is repreſented in *fig.* 2, where the rack A B muſt be ſuppoſed at leaſt four times as long in proportion to the wheel Q, as the figure repreſents it; and the teeth, which will be then four times more in number, to be contained about three in an inch. Then if the handle H P be ſeven inches long, five turns of it; *i.e.* five times 22 inches, or 110 inches, will be the velocity of the power, whilſt the weight raiſed by the claw A, or depreſſed by the claw B, moves one inch: for as the pinion of the handle has but four leaves, and the wheel Q twenty teeth, there muſt be five revolutions of the handle to turn the wheel once round, whoſe three-leaved pinion R will, in that revolution, juſt move the rack three teeth, or one inch. This might have been alſo known without ſeeing, or even knowing the number of the teeth of the wheel and pinions, by meaſuring a revolution of the handle in *fig.* 1; and comparing the ſpace gone through by it with the ſpace gone through by the end A or B. This machine is ſometimes open behind from the bottom almoſt up to the wheel Q, to let the lower claw, which in that caſe is turned up as at B, draw up any weight. When the weight is drawn, or puſhed ſufficiently high, it is kept from going back by hanging the end of the hook S, fixed to a ſtaple, over the curved part of the handle at *h*.

JACK is alſo the name of a well known engine uſed for turning a ſpit: the weight is the power applied; the friction of the parts, and the weight with which the ſpit is charged, are the force to be overcome; and a ſteady uniform motion is maintained by means of the fly. See the conſtruction of this engine more particularly explained and illuſtrated by a figure, under the article MECHANICAL *powers*.

JACK, *Smoke*, is an engine uſed for the ſame purpoſe with the common jack, and is ſo called from its being moved by means of the ſmoke or rarefied air; aſcending the chimney, and ſtriking againſt the tail of the horizontal wheel A B, (*fig.* 3.) which being inclined to the horizon, is moved about the axis of the wheel, together with the pinion C, which carries the wheels D and E; and E carries the chain F, which turns the ſpit. The wheel A B ſhould be placed in the narrow part of the chimney, where the motion of the ſmoke is ſwifteſt, and then the greateſt part of it muſt ſtrike upon the ſails. The force of this machine depends on the draught of the chimney, and the vehemence of the fire.

JACK, in a *Ship*, is a ſort of flag or colours, diſplayed from a maſt erected on the outer end of a ſhip's bowſprit. In the Britiſh navy the jack is nothing more than a ſmall union flag, compoſed of the interſection of the red and white croſſes; but in merchant-ſhips this union is bordered with a red field. See FLAG.

JACK is uſed alſo for a horſe or wooden frame to ſaw timber upon; for an inſtrument to pull off a pair of boots; for a great leathern pitcher to carry drink in; for a ſmall bowl that ſerves as a mark, at the exerciſe of bowling; and for a young pike.

JACK, a *Muſical* implement in a virginal, ſpinnet, and harpſichord; it is a ſmall machine, uſually made of pear-tree wood, in which is a tongue, armed with a quill. This tongue moves on a ſwivel, and when the quill has ſtruck the ſtring, by the jack being thrown up with the key, on the end of which it reſts, if the finger is taken off, it returns to its place under the ſtring, and the tongue, thrown back by paſſing the ſtring, is forced into its perpendicular ſituation by the ſpring of a briſtle behind it.

JACK-*Arch*, in *Architecture*, is an arch of one brick thickneſs.

JACK-*Head*, in *Hydraulics*, a part ſometimes annexed to the forcing-pump. See PUMP.

JACK-*in-a-Box*, in *Botany*. See HERNANDIA.

JACK *by the Hedge*. See ERYSIMUM.

JACK-*Daw*. (See CORVUS *Monedula*.) This bird is very miſchievous to the farmer and gardener, and is of ſuch a thieviſh diſpoſition, that he will carry away much more than he can make any uſe of. There is a method of deſtroying this bird by a particular ſort of ſpringe, which is much practiſed in ſome parts of England, and is ſo uſeful, that it ought to be made univerſal. The method is this: a ſtake of about five feet long is to be driven firmly into the ground, and made ſo faſt that it cannot move, and ſo ſharp pointed at the top, that the jack-daw cannot reſt upon it. Within a foot of the top there muſt be a hole bored through it, of three quarters of an inch in diameter; through this hole is to be put a ſtick of about eight inches long, then a horſe-hair ſpringe or nooſe is to be faſtened to a thin hazel-wand, and this brought up to the place where the ſhort ſtick is placed, and carried with it through the hole; the remainder being left open under that ſtick. The other end of the hazel-rod is to be put through a hole in the ſtake near the ground, and faſtened there; the ſtake is to be planted among the jack-daw's food, and he will naturally be led to ſettle on it; but finding the point too ſharp, he will deſcend to the little croſs ſtick; this will ſink with his weight, and the ſpringe will receive his leg, and hold him faſt.

JACK-*Daw*, *Purple*. See GRACULA *Quiſcala*.

JACK-*Ketch*, is a name given by the populace to the common hangman.

JACK-*in-a-Lantern*. See IGNIS *Fatuus*.

JACK-*Snipe*, in *Ornithology*. See SCOLOPAX *Gallinula*.

JACK *Wambaſium*, in our *Old Writers*, a kind of defenſive coat-armour, worn by horſemen in war, not made of ſolid iron, but of many plates faſtened together; which ſome perſons by tenure were bound to find upon any invaſion.

JACK, *Wood*, a ſort of ſtool made uſe of for ſawing or cutting wood upon.

JACKALL, in *Zoology*, the name of a creature of the dog-kind, the canis aureus of Linnæus, called by authors *lupus aureus*, the gold-coloured wolf, and by the modern Greeks *ſquilachi*. See AUREUS.

JACKSON, JOHN, in *Biography*, was born at Senſey, near Thirſk, in Yorkſhire, in 1686. He was educated at Doncaſter, under Dr. Henry Bland, afterwards head-maſter of Eton ſchool. From Doncaſter he went to Cambridge, and was entered, in 1702, of Jeſus college. Here he took his degree of B. A. and quitted the univerſity in 1707, and engaged himſelf as private tutor in the family of a gentleman of Derbyſhire. In the following year he was ordained, and ſoon after obtained the rectory of Roſſington, which had been reſerved for him, by the corporation of Doncaſter, after the death of his father. In 1714 he commenced his career as author, by publiſhing three letters in defence of Dr. Samuel Clarke's "Scripture Doctrine of the Trinity," under the name of a country clergyman. This work was the means of introducing him to the notice of Dr. Clarke, who was anxious to procure for him ſome preferment in the church. In 1714, Mr. Jackſon engaged in the Bangorian controverſy, and proved an able defender of biſhop Hoadly, in the cauſe of liberty. In 1716 he engaged in a controverſy with Dr. Waterland, in defence of the ſentiments maintained by Dr. Clarke. He purſued the ſubject ſtill farther in a correſpondence with Mr. Whiſton, by which he was led to determine never more to ſubſcribe to the thirty-nine articles. In conſequence of this reſolution, he loſt, about the year 1724, the hopes which he had been led to entertain of a prebendary of Saliſbury, which biſhop Hoadly refuſed to give him without ſubſcription. This refuſal was ſo extraordinary, eſpecially as it came from Hoadly, and as the law did not make ſubſcription neceſſary, that the prelate was cenſured for it by his beſt friends. Whiſton exclaimed, "how conſiſtent this was with his own notion of liberty of conſcience, or with that Chriſtian freedom, of which he was always an advocate, I do not well underſtand." Upon the death of his friend Dr. Clarke, in 1729, Mr. Jackſon was preſented to the maſterſhip of Wigſton's hoſpital, in Leiceſter, by the duke of Rutland, which place he filled, till his death, with much reputation and credit, candidly admitting into the houſe perſons of different religious perſuaſions, even ſome who had been violent partizans againſt him. Mr. Jackſon next appeared as an author in defence of human liberty, or the liberty of the will, in oppoſition to Anthony Collins, who had publiſhed a pamphlet in behalf of the doctrine of neceſſity: he alſo wrote in juſtification of human reaſon; and in defence of the Chriſtian religion, in oppoſition to Tindal's work, entitled "Chriſtianity as Old as the Creation." His other ſmaller treatiſes we ſhall paſs over, though very uſeful and important in the controverſies and diſcuſſions of the period in which the author flouriſhed. In 1752 he ſent his great work into the world, entitled "Chronological Antiquities, or the Antiquities and Chronology of the moſt ancient Kingdoms from the Creation of the World, for the Space of Five thouſand Years." This work, the reſult of much ſtudious application, and very extenſive reading, conſiſted of three volumes 4to., was well received by the literati of our own country, and was tranſlated into the German language. He had other works in view, particularly an edition of the New Teſtament in Greek, with ſcholia in the ſame language; this he meant to have accompanied with all the various readings which he had collected, but the infirmities of age prevented him from accompliſhing his deſigns. He died in 1763, in the 78th year of his age. He was a man of deep and very extenſive learning, particularly in Greek and Roman literature, and his induſtry was indefatigable. He was the avowed friend of civil and religious liberty, and was never afraid of avowing the truth on any ſubject, although he was fully ſenſible of the obloquy and temporal loſſes to which ſuch conduct would expoſe him. Biog. Brit.

JACKSON, THOMAS, was born at Witton, in the county of Durham, in the year 1579. Having obtained a good claſſical education, he was entered of Queen's college in the year 1595, and in the following year he was, on account of his great merit, unanimouſly elected a ſcholar of Corpus Chriſti college, notwithſtanding the utmoſt intereſt was made for another candidate. He took his degrees in regular courſe, and was at length choſen vice-preſident of his college ſeveral years ſucceſſively. He firſt obtained a benefice in his native country, which, in a ſhort time, he relinquiſhed for the vicarage of St. Nicholas, in Newcaſtle-upon-Tyne. He was in ſentiment a rigid Calviniſt, and was much admired and followed as a preacher. Being afterwards appointed chaplain to Dr. Neile, biſhop of Durham, that prelate was the means of making him a convert to Arminianiſm. In 1650 he was elected preſident of Corpus Chriſti college, on which occaſion he reſigned the vicarage in Newcaſtle, and ſoon afterwards was nominated chaplain in ordinary to his majeſty, and collated to the vicarage of Witney in Oxfordſhire. In 1635 he was made a prebend of Wincheſter, and in 1638 he was promoted to the deanery of Peterborough. He died in 1640, leaving behind him a character for a ſolid and penetrating judgment, and for extenſive and ſound learning. His works are numerous, but wholly theological; the principal of them conſiſt of "Commentaries on the Apoſtle's Creed," in twelve books. His works, thirty years after his deceaſe, were collected and publiſhed in three volumes folio, to which is prefixed the life of the author. Biog Brit.

JACKSON, WILLIAM, an eminent muſical compoſer, was a native of Exeter, in Devonſhire. He was pupil of the celebrated Travers, and may be ſaid to have imbibed no ſmall portion of that compoſer's ſpirit. It muſt be allowed that Jackſon poſſeſſed a conſiderable ſhare of intellectual ability, and evinced on many occaſions a very diſtinguiſhed taſte for the fine arts. His judgment in general was ſound; genius will not be denied him, and when genius, judgment, and taſte are united in the ſame perſon, we are entitled to expect an approximation to human excellence. At the ſame time it muſt be confeſſed, that theſe qualities were ſtrongly alloyed by a mixture of ſelfiſhneſs, arrogance, and an inſatiable rage for ſuperiority.

In many of his muſical compoſitions he has diſplayed traits of novelty, but theſe are not the moſt eſtimable of his productions. The "Elegies," the beſt of his works, poſſeſs ſuperior melody, for which we may allow him credit; but the harmony of theſe is in ſome meaſure derived from his old maſter; that is, they are conſtructed upon the model of that compoſer's canzonets. Indeed, many of Jackſon's early compoſitions favour much of the ſpirit and contrivance of Travers.

Jackſon's fame, in a great meaſure, may be ſaid to be founded in his judgment of ſelection with regard to poetry; though he ſometimes took unwarrantable liberties with his author, in order to accommodate the lines to his muſic.

Perhaps no compoſer copied leſs from others than Jackſon, yet at the ſame time it muſt be admitted that he was a palpable manneriſt. His moſt intereſting and novel melodies are too frequently aſſociated with common paſſages that have exiſted almoſt from the origin of muſic; the deſcent of four notes in the diatonic order is ſufficient to illuſtrate our meaning. Jackſon's peculiar fort exiſted in giving an elegant and plaintive melody to elegiac poetry. In conſtituting harmony, without rendering the middle part or parts of a compoſition deſtitute of melody, Jackſon ſtands unrivalled.

This is no trivial praiſe, when it is known that, before his time, compoſers were, and are at preſent, very defective in this part of their art.

It was a defect in Jackſon's muſic, that his melody would ſuit any ſpecies of plaintive lines: few of his compoſitions diſplayed the art of mingling expreſſion with melody, and preſerving the latter in its purity. His "Fairy Fantaſies," not yet publiſhed, evince more congruity than any others of his works.

Jackſon paid his court to the graphic muſe, but never looked at nature, believing, that by copying other maſters, he might at laſt arrive at excellence. His great model was his friend Gainſborough, whoſe colouring and compoſition he conſtantly endeavoured to imitate, ſometimes with a degree of ſucceſs which induced him to lay a falſe claim to the merit of originality. But had he ſucceeded in even equalling that great artiſt, his pictures would not have ſpoken the language of nature; the man who merely copies another, either in muſic or painting, can never be conſidered a great artiſt; he can only be a faint echo, and ranked among the ſervum pecus imitatorum.

Jackſon's literary works, though not of the higheſt order, poſſeſs genius. He wrote "Thirty Letters on various Subjects," 8vo. "The Four Ages, and other Eſſays," 8vo. "Treatiſe on the preſent State of Muſic." Alſo ſome papers in the eſſays of the Exeter Society. He produced eighteen muſical publications, conſiſting of "Hymns, Songs, Canzonets, Elegies," and an "Ode to Fancy," &c.

Jackſon was elected organiſt of St. Peter's cathedral, Exeter, in 1777, and continued in that ſituation till his death, in 1803.

Though his general mode of living was temperate, yet he thought that a ſtill greater abſtinence would prolong his exiſtence. He latterly dined on milk-porridge, and drank water. This experiment was fatal. His habit neceſſarily became impoveriſhed, and his exiſtence terminated in a dropſy, at the age of 73.

JACKSON, in *Geography*, a county of America, in Georgia, containing 7736 inhabitants, of whom 1400 are ſlaves.—Alſo, a county of Teneſſee, in Mero diſtrict.

JACKSON, *Port*, a bay or harbour on the E. coaſt of New Holland, ſo called by lieutenant (afterward captain) Cook, who diſcovered it in May 1770, and found that it had good anchorage. This is one of the nobleſt harbours in the world, extending about 14 miles in length, with numerous creeks and coves. On the ſouth of this, at a ſpot called Sidney cove, a ſettlement for tranſported criminals was fixed. Jackſon lies three leagues N. of *Botany-bay*; which ſee. See alſo *New* HOLLAND.

JACKSON's *River*, a head-water of James's river, in Virginia, which riſes in the warm ſpring mountains, and runs S.W. through the valley, until it is joined by Carpenter's creek, when the river aſſumes the name of Fluvanna, and flows S.E. About ¾ of a mile from its ſource, it falls over a rock 200 feet into the valley below. It is near half as high as Niagara, but only 12 or 15 wide.

JACKSONBORO, a poſt-town of America, in Scriven county, Georgia; 670 miles faom Waſhington.

JACKSONIA, in *Botany*, ſo named by Mr. Robert Brown, in memory of the late Mr. George Jackſon, F.L.S. a man of the moſt excellent and amiable character, devoted to the ſcience of botany, to which, under the auſpices of his patron and friend, A. B. Lambert, eſq. he has rendered ſeveral important ſervices. The improved ſtyle of the Botanical Repoſitory, for ſome time paſt, though far ſhort of what he wiſhed, is owing to his care, and he has furniſhed a paper in the tenth volume of the Linnæan Society's Tranſactions, on a new genus of Decandrous Leguminous plants, named *Ormoſia*. Many manuſcripts evincing his learning and ſcientific ſkill remain in the hands of Mr. Lambert. Mr. Jackſon died of a rapid decline Jan. 12, 1811, aged 31, and was interred on the 16th in St. George's burying-ground, Mary-le-bone. He was a native of Aberdeen.—Brown in Ait. Hort. Kew. v. 3. 12.—Claſs and order, *Decandria Monogynia*. Nat. Ord. *Papilionaceæ*, Linn. *Leguminoſæ*, Juſſ.

Gen. Ch. *Cal.* Perianth inferior, of one leaf, in five deep, nearly equal, acute ſegments. *Cor.* papilionaceous, of five petals. Standard inverſely heart-ſhaped, about equal to the calyx. Wings rather longer, obtuſe, with a tooth on their upper ſide near the baſe. Keel of two petals, of the ſize and ſhape of the wings. *Stam.* Filaments ten, awl-ſhaped, diſtinct, equal, aſcending, deciduous; anthers roundiſh. *Piſt.* Germen nearly ſeſſile, oval; ſtyle awl-ſhaped, ſlender;

ſlender ; ſtigma ſimple, obtuſe. *Peric.* Legume ovate or oblong, ſomewhat ſwelling, of one cell and two valves, downy on their inſide. *Seeds* two, roundiſh, without any appendage.

Eſſ. Ch. Calyx in five deep, nearly equal, ſegments. Corolla papilionaceous. Style awl-ſhaped. Stigma ſimple. Legume of one cell, downy within. Seeds two, without any appendage.

Of this genus, whoſe habit is ſlender and reſembling that of Broom, two ſpecies are defined in an unpubliſhed ſheet of the third volume of the *Hortus Kewenſis*, kindly communicated to us by Mr. Brown, that the memory of his friend might as ſoon and as widely as poſſible be commemorated. Theſe are,

1. J. *ſcoparia.* Brown MSS.—“ Stem arboreſcent, without thorns. Branches angular. Cluſters terminal.”—Native of New South Wales, from whence it was ſent to Kew garden by Mr. George Caley, in 1803. This is the plant mentioned in Sims and Kœnig's Annals of Botany, v. 1. 511, which the author of the eſſay there printed, and of the preſent article, for want of the fruit, could not then venture to determine. Its *branches* have the aſpect of a *Spartium*, and are ſomewhat ſilky, leafleſs, much branched, and angular. *Flowers* yellow, in ſcattered ſhort cluſters. Specimens were long ago ſent from Port Jackſon, by Dr. White.—This ſpecies is kept in the green-houſe, and flowers from June to Auguſt.

2. J. *ſpinoſa.* Brown MSS. (Gompholobium ſpinoſum ; Billard. Nov. Holl. v. 1. 107. t. 136.)—“ Stem ſhrubby. Branches ſpinous, ſpreading, twice or thrice forked, angular. Bracteas very ſhort, cloſely preſſed to the top of the flower-ſtalk.”—Native of the ſouth-weſt coaſt of New Holland, from whence it was ſent to Kew, by Mr. Peter Good in 1803, and is kept in the green houſe, flowering moſt part of the ſummer. The *ſtem* is much branched, rigid and ſpinous, without leaves. *Flowers* ſtalked, uſually in pairs. Billardiere ſays the ſeeds are from two to four, and kidney-ſhaped.

Several more ſpecies of *Jackſonia* are deſtined to appear in Mr. Brown's *Prodromus Fl. Novæ Hollandiæ*, with which, we preſume, the above ſpecific characters are contraſted. S.

JACKSONSBOROUGH, in *Geography*, a ſmall poſt-town of South Carolina, on the W. ſide of Ediſto river, about 35 miles W. of Charleſton.

JACKTALL, a town of Hindooſtan, in Dowlatabad ; 12 miles N.W. of Ramgur.

JACMEL, a juriſdiction and ſea-port town on the S. ſide of the iſland of St. Domingo. This juriſdiction, in the French part of the iſland, contains three pariſhes, remarkable for the goodneſs of its ſoil, and the abundant crops of coffee. The town is ſituated on the S. ſide of the neck of the ſouth peninſula ; 6 leagues weſtward of Cayes de Jacmel, or 13 S.W. of Port-au-Prince, and 53 E. of cape Tiburon. N. lat. 18° 21′. W. long. from Paris 75° 2′.

Jacmel, *Cayes de*, a town and pariſh on the E. ſide of the ſtream of its name ; the pariſh is bounded E. by the plain on the Spaniſh part, at the foot of the mountains of Bahoruco, 80 leagues ſquare, fit for any kind of cultivation.

JACO, a river of Brazil, which runs into the Atlantic. S. lat. 17° 25′.

Jaco, in *Ornithology.* See Psittacus *Erithacus.*

JACOB, in *Scripture Hiſtory*, the ſon of Iſaac and Rebecca, was born in the year B. C. 1836. He was twin-brother of Eſau (ſee Gen. xxv. 25.), of a meek peaceable diſpoſition, domeſtic in his habits, inclined to a paſtoral life, and the favourite of his mother ; whereas, Eſau was of a more fierce and turbulent temper, fond of hunting, and, in conſequence of his maſculine active ſpirit, the object of his father's partial affection. Jacob derived his name from the manner of his birth, as he came into the world holding his brother's heel, which, in Hebrew, is expreſſed by עקב, whence עקב, *he ſupplanted*, a term indicating ſome events that occurred in the progreſs of his years, and of which we have already given a brief account under the article Eſau. It is needleſs minutely to detail the particulars of his future hiſtory, as they are recited in the book of Geneſis, to which the reader is referred. Here we find, that in order to avoid the threatened effects of his brother's diſpleaſure, incurred as we have already related under the article Esau, Jacob was ſent by his mother to her brother Laban. In his journey he had a viſion of a peculiar nature, which brightened his proſpects, and induced him to form pious and laudable reſolutions. On his arrival at Padan-Aram, he was hoſpitably received by his uncle Laban ; and in a little while he conceived an affection for Rachael, his youngeſt daughter. In order to obtain Laban's conſent to their marriage, he agreed to ſerve him ſeven years ; but at the cloſe of this period of ſervice, Leah, the eldeſt ſiſter, was ſubſtituted for Rachael ; and he contracted to ſerve Laban for a ſecond term of years, upon condition of obtaining the firſt object of his affection. Upon the expiration of this term he married Rachael ; and during his abode with Laban, he was ſingularly proſperous. At length his ſituation became intolerably grievous, and he determined to return with his wives and children, and the property he had acquired, to his own country. Availing himſelf of an opportunity which Laban's abſence afforded, he prepared for his journey ; and he had proceeded ſo far before his departure was known, that Laban was ſeven days in purſuing him before he could overtake him. Upon their interview on mount Gilead, Laban remonſtrated and Jacob juſtified the meaſure which he had adopted. Rachael, however, before her departure, had contrived to purloin her father's *teraphim* (which ſee) ; and Laban, in his remonſtrance with Jacob, complained of the robbery. Jacob, unapprized of the fact, conſented to an examination of every tent, and declared that the individual, who was guilty of the robbery, ſhould be put to death. Rachael contrived to elude the ſearch ; and Laban, apprehending that his charge was unjuſt, inclined to meaſures of conciliation. Accordingly, he propoſed to Jacob terms of alliance, and that a monument ſhould be erected as a teſtimony of it to future ages. Jacob acquieſced : a pile of ſtones was reared, called by Laban, in the Syriac tongue, Jagar-Sahadutha, and by Jacob, in Hebrew, Gilead ; both ſignifying the heap of witneſs. The treaty was concluded with a ſacrifice and a feaſt ; and Laban, having embraced and bleſſed Jacob and his family, ſet out on his return to Padan-Aram. Jacob, as he purſued his journey, began to entertain apprehenſions of the unappeaſed reſentment of his brother Eſau ; and notwithſtanding the conciliatory meaſures he had adopted, he ſoon found that his brother was advancing to meet him with an armed force, and with ſeeming purpoſes of hoſtility. Having recommended himſelf by an act of devotion to the divine protection, he prepared a coſtly preſent for his brother. At this time he was favoured with a prophetic viſion, which ſerved to allay his fears and to animate his reſolution ; and from a circumſtance that occurred on this occaſion, he obtained the name of “ Iſrael,” ſignifying a man who has prevailed with God ; and this became afterwards the name of his poſterity. Having joined his family after this viſion, he advanced to meet his brother, who received him in the moſt kind and affectionate manner, and invited him to ſettle in his neighbourhood. Jacob, however, could not eaſily diſmiſs his apprehenſions of danger, and choſe rather to take up his abode near Schechem, where he purchaſed ground, on which he built an altar to the Lord. A circumſtance of a very diſtreſſing kind occurred, for an account of which we refer to the hiſtory, which made it neceſſary for Jacob to remove from the vicinity of Schechem; and whilſt he was deliberating whither to direct his courſe, he was inſtructed to erect an altar to God at Bethel, a place where he had received early aſſurances of the divine protection and favour. Having erected an altar at this place, he ſet out on his journey to his father; but in the way he was ſeverely afflicted by the loſs of his beloved wife Rachael, who died in childbirth of her ſon Benjamin. Soon afterwards he arrived at Mamre, and continued there till his father's death. At this time Joſeph, being about 17 years of age, became the object of jealouſy to his brethren; who, meditating his deſtruction, determined at length to ſell him to a troop of Iſhmaelites, and to feign a ſtory, with which they impoſed upon the afflicted father, of his having been torn to pieces by ſome wild beaſt. After the lapſe of ſome years, Jacob received the conſolatory news of Joſeph's being ſtill alive, and in a ſtation of high honour and power at the court of Pharaoh. (See Joseph.) The news, we may well imagine, tranſported him beyond meaſure, and he fainted in the arms of his ſons who communicated it. As ſoon as he could be perſuaded that the report was true, and found himſelf ſurrounded by the preſents of his ſon, and by the chariots of Egypt, which were to convey him and his family thither, he prepared for his journey, and in his way ſtopped at Beerſheba, to offer ſacrifices to God, thus expreſſing his gratitude and his deſires of continued protection and bleſſing. Having received aſſurances of divine favour, he purſued his journey with pleaſure; and, as he approached the borders of Egypt, he received a meſſage from Joſeph, requeſting him to meet him in the land of Goſhen, ſituated between the Red ſea and the Nile, which was a fruitful territory, and adapted to his paſtoral life. The interview between the patriarch and his ſon Joſeph is beſt conceived by a mind of virtuous ſenſibility. Having obtained leave of Pharaoh to ſettle in the land of Goſhen, Joſeph conducted his father and family thither; and here they proſpered and multiplied. Jacob lived 17 years in Egypt; and when he apprehended that his life was drawing to a cloſe, he obtained a promiſe from Joſeph that his remains ſhould be carried to Canaan, and depoſited with thoſe of his progenitors, Abraham and Iſaac, in the cave of the field of Machpelah, which Abraham had purchaſed. When he was dying, he adopted the two ſons of Joſeph, Manaſſeh and Ephraim, as his own; declaring, that in the diviſion of the promiſed land they were to receive a double lot, and to be conſidered as the heads of two diſtinct tribes. Having delivered to his ſons, who were collected round him, his dying predictions of the events that ſhould happen to their ſeveral deſcendants in future times, and which exactly correſponded to the patriarch's declarations, Jacob expired, at the age of 147 years, in the year B. C. 1689. Joſeph faithfully fulfilled his promiſes with reſpect to the burial of his father; and Pharaoh teſtified his reſpect for Joſeph by contributing in various ways to the pomp of the funeral proceſſion. After having depoſited the remains of their father in the cave of Machpelah, Jacob's ſons returned to Egypt, where they and their poſterity remained till the time of the *Exodus*. See Exodus. Geneſis, ch. xxv.—4. Anc. Un. Hiſt. vol. ii. p. 248. &c. &c. Calmet's Dict. Bib. art. *Jacob.*

Jacob, John, in *Biography*, was a native of Zulpha, and in the year 1641 he filled the poſt of principal joiner to the king of Perſia. He was celebrated for his ſkill in mechaniſm, and was author of many uſeful inventions. Having an opportunity of viſiting Europe, he formed a complete idea of the art of printing, and upon his return to Iſpahan he ſucceeded in erecting a preſs, and cut for himſelf matrices for the neceſſary types. The firſt ſpecimens of his typographical art were in the Armenian language, and conſiſted of the epiſtles of St. Paul, and the ſeven penitentiary pſalms. He would have proceeded with the other parts of the bible, but his progreſs alarmed the copyiſts, who excited ſuch a clamour againſt him that he was obliged to lay aſide the undertaking. He was a Chriſtian in religion; but on account of his very extraordinary talents he was permitted to hold a poſt which was never before occupied but by a Mahometan. His ſovereign would gladly have enrolled him among the followers of the prophet, but no offers of preferment, however tempting, could prevail on him to renounce Chriſtianity. Moreri.

Jacob, Henry, celebrated as the founder of the firſt independent or congregational church in England, was a native of Kent, and received his academical education at St. Mary's hall, Oxford. Having entered into holy orders, he was made precentor of Corpus Chriſti college, and afterwards obtained the benefice of Cheriton in Kent. In the year 1604 he publiſhed "Reaſons taken out of God's Word, and the beſt of human Teſtimonies, proving the Neceſſity of reforming our Churches of England." The publication of this, and of another work, againſt what was falſely called "learned preaching," drew down upon him the perſecution of biſhop Bancroft, and to avoid his wrath he fled to Holland. At Leyden he met with Mr. Robinſon, with whom he had frequent conferences, and became a convert to the Browniſt principles, ſince known by the name of independency. In Holland he publiſhed ſeveral treatiſes, and upon his return he avowed a deſign of ſetting up a ſeparate congregation upon the model of thoſe in Holland. This, in a ſhort time, he carried into effect, and thus laid the foundation of the firſt independent congregational church in England. He was elected paſtor of the church, and continued with his people till the year 1624, when, being deſirous of entering on a more enlarged ſphere of uſefulneſs, he went to Virginia, where he ſoon afterwards died. He was author of many publications which were highly eſteemed in his day. Neal's Hiſt. Puritans.

Jacob, Henry, ſon of the preceding, was born in the year 1609. He received the greater part of his education at Leyden, and made a wonderful progreſs in philological and oriental learning. He was patronized firſt by the earl of Pembroke, and then by archbiſhop Laud. By the influence of the latter he was appointed "ſocius grammaticalis" in Merton college, a poſt which had not been occupied for more than a century, and the duties of which required him to be reader of philology to the juniors. He became fellow of his college, and acted ſome time as amanuenſis to Mr. Selden. In 1648 he was expelled from his fellowſhip and college by the parliamentary viſitors; and being deſtitute of the means of ſubſiſtence he came to London, where his friend Mr. Selden contributed to his ſupport. He was never an economiſt either with regard to his little property or his health, and by intenſe application to his ſtudies he died, at Canterbury, at the early age of 44. He left behind behind him many very learned pieces, particularly "Græca et Latina Poemata." Gen. Biog.

Jacob, a performer on the eſtabliſhment of the Royal Academy at Paris, a ſcholar, on the violin, of Gavigné, who likewiſe taught that inſtrument, according to the principles of his maſter, by which he acquired reputation. He publiſhed, in 1769, a new muſical grammar, in which he wrote down the doctrine of the Abbé la Caſſagne, concerning the reduction of all clefs to one; calling his book l'Unclefier, a plan which he had ſtolen from our countryman, Salmon, as Dumas had done before, and others of his countrymen ſince. Salmon's "Eſſay for the Advancement of Muſic, by reducing all Clefs to one," was publiſhed in 1672, to which there was no valid objection but the rendering all previous compoſitions obſolete. See Salmon and Clef.

Jacob, *St.* in *Geography*, a town of the duchy of Stiria; ſeven miles W. of Fridburg.—Alſo, a town of Stiria; ſix miles N.E. of Marburg.—Alſo, a town of Tyrol; eight miles S. of Landeck.—Alſo, a town of Sweden, in the government of Abo; 10 miles E. of Abo.

Jacob's *Creek*, an eaſtern water of Youghiogany river, in Weſtmoreland county, Pennſylvania. Six miles W. to Monongahela river there is a carrying place from the Youghiogany, oppoſite to the mouth of this creek.

Jacob's *Ladder*, in *Botany*. See Polemonium.

Jacob's *Staff*, a mathematical inſtrument for taking heights and diſtances; the ſame with the croſs-ſtaff.

JACOBÆA, in *Botany*. See Senecio.

JACOBÆAN Lily. See Amaryllis *Formoſiſſima*. The name was given by the Spaniards, becauſe this flower reſembles, in ſize, colour, and ſhape, the red croſs worn by the knights of the order of St. James, embroidered on their habits, as may be ſeen by ſome of their portraits brought into this country.

JACOBÆASTRUM. See Othonna.

JACOBÆOIDES. See Othonna.

JACOBAZZI, Dominic, in *Biography*, an Italian cardinal, was born at Rome in the year 1443. Having fixed upon the eccleſiaſtical life, he applied himſelf to the ſtudy of the canon law and theology, and became ſo eminent for his proficiency in theſe ſciences, and for his talents as a man of buſineſs, that he was employed by pope Sixtus IV., and five of his ſucceſſors, in the management of ſeveral important affairs. He roſe rapidly in the church; by pope Julius II. he was made vicar of Rome, and preſident of the univerſity in that city; he was likewiſe put in poſſeſſion of ſeveral biſhoprics, and at length, in the year 1517, he was elevated to the rank of cardinal by pope Leo X. He died about the year 1527, when he was 84 years of age. He was author of "A Treatiſe concerning the Councils," which was originally publiſhed at Rome in 1538, in folio. It forms the 18th volume of father Labbe's "Collectio Maxima Conciliorum," and renders that collection extremely valuable.

JACOBIN, in *Ornithology*. See Loxia *Molucca*.

JACOBINE, the name of a particular ſpecies of pigeon, called by Moore the *columba cypria cucullata*. (See Columba *Cucullata*.) It is generally called the jack, for ſhortneſs. It is, when genuine and of the true breed, the ſmalleſt of all pigeons. It has a range of feathers inverted quite over the hinder part of its head, and reaching down on each ſide of the neck to the ſhoulders of the wings, which forms a kind of friar's hood, from whence the bird has its name. This ſpecies has alſo a ſhort bill, and a pearly eye. The colour is various in the feathers; there are reds, yellows, blues, blacks, and mottles; but whatever is the general colour, the head, tail, and flight, are white. Some pigeons of this ſpecies are feather-legged, others are not.

JACOBINS, a name given in France to the religious who follow the rule of St. Dominic, on account of their principal convent, which is near the gate of St. James, in Latin Jacobus, at Paris; and which, before they came poſſeſſed of it in the year 1218, was an hoſpital of pilgrims, dedicated to the ſaid ſaint. (See Dominicans.) Others maintain, that they have have been called Jacobins ever ſince they were eſtabliſhed in Italy, becauſe they pretended to imitate the lives of the apoſtles.

They are alſo called *friars predicants*, or *preaching friars*.

Jacobins, a term of reproach applied ſoon after the French Revolution to thoſe who actually were, or who were ſuſpected to be attached to the French intereſt.

JACOBITES, in *Eccleſiaſtical Hiſtory*, a ſect of heretics, who were anciently a branch of the Eutychians, and are ſtill ſubſiſting in the Levant.

They were ſo called from Jacobus, James, of Syria, called Albardai, or Baradæus, who was one of the heads of the Monophyſites, or ſectaries who owned but one nature in Jeſus Chriſt.

This poor monk revived the cauſe of the Monophyſites by his activity and diligence; and when he died biſhop of Edeſſa, A.D. 588, he left this ſect in a moſt flouriſhing ſtate in Syria, Meſopotamia, Armenia, Egypt, Nubia, Abyſſinia, and other countries. The laborious efforts of Jacob were ſeconded in Egypt, and the adjacent countries, by Theodoſius, biſhop of Alexandria.

The Monophyſites were a ſect of vaſt extent, comprehending the Armenians, Copts, and Abyſſinians: and the denomination of Jacobites is commonly uſed in an extenſive ſenſe, as comprehending all of them, except the Armenians; but it more ſtrictly and properly belongs only to thoſe Aſiatic Monophyſites, of which Jacob Albardai was the reſtorer and chief. All the patriarchs of the Jacobites aſſume the denomination of Ignatius.

As to their faith, all the Monophyſites, both Jacobites and others, follow the doctrine of Dioſcorus touching the unity of nature and perſon in Jeſus Chriſt. See Monophysites.

Jacobites, in England, is a term of reproach beſtowed on ſuch perſons as diſallow of the revolution by king William, and ſtill aſſert the rights, and adhere to the intereſts of the abdicated king James, and his line.

JACOBS, Lucas, in *Biography*, a painter, born at Leyden, and therefore commonly known by the name of Lucas Van Leyden. In the year 1494 he made the entrè of life, and as he grew up was inſtructed by his father, Hugh Jacobs, in the art of painting. Afterwards he became the pupil of Cornelius Engelbrecht, and had acquired conſiderable reputation as a painter, and alſo as an engraver, when he arrived at the age of manhood.

His ſtyle is of the dry Gothic ſchool of Germany, of which Albert Durer is the leader; cloſe upon whom followed Jacobs, with nearly as much merit as a painter, though not his equal by far in invention. The attempt to copy the model cloſely is in the works of the latter as evident as in thoſe of the former, and his draperies have the ſame character. Both are imperfect and meagre in lines; but ſometimes, where they copied the large flowing dreſſes of the church, they are broad and have much majeſty. His feeling of expreſſion is of a low and vulgar caſt, and oftentimes mere grimace; but it muſt be acknowledged that he and Albert were far above their contemporaries in Germany.

The works of this maſter are numerous; but he is perhaps better known by his prints, engraved by himſelf with great ingenuity, from a great number of his pictures in Leyden, Amſterdam, Vienna, &c. &c. He died in 1533, at the age of 39.

JACOBSHAGEN, in *Geography*, a town of Pomerania; 16 miles E. of Stargard. N. lat. 53° 25'. E. long. 15° 30'.

JACOBSON, John Charles Gottfried, in *Biography*, was born at Elbingen in 1726. He ſtudied at Leipſic, but in conſequence of an unfortunate duel he was obliged to leave that place, and entered into the ſervice of the elector of Saxony. He afterwards enliſted in a regiment of infantry at Berlin, and during a two years' reſidence in that city he diligently frequented the different manufactories and workſhops, and between the years 1773 and 1776 publiſhed his “Deſcription of all the Cloth Manufactories in Germany,” in four volumes octavo. He was indefatigable in his purſuits, and beſides his own publications he aſſiſted Sprengel in his “Collection of the Arts and Handicrafts,” and Nicolai in his “Deſcription of Berlin.” In 1778 he was actively engaged in military affairs, but after the campaign of this year he obtained a diſcharge, and began his “Technological Dictionary of all uſeful Trades, Arts, Manufactures, &c.” which was publiſhed in parts between the years 1781 and 1784. In the latter year he was appointed inſpector of all the royal manufactories in the kingdom of Pruſſia; he died in 1789. He was author of “A Deſcription of all the Linen, Cotton, and Woollen Manufactures in the Pruſſian States,” in 4 vols. and he had begun a “Compendium of Technology,” when death put an end to his labours. Gen. Biog.

JACOBSTADT, in *Geography*, a ſea-port town of Sweden, in the government of Waſa, with a convenient port. N. lat. 56° 41′. E. long. 22° 36′.

JACOBUS, a gold coin, worth twenty-five ſhillings; ſo called from king James the Firſt of England, in whoſe reign it was ſtruck. We uſually diſtinguiſh two kinds of Jacobus, the *old* and the *new;* the former valued at twenty-five ſhillings, weighing ſix penny-weights ten grains; the latter, called alſo Carolus, valued at twenty-three ſhillings; in weight five penny-weights twenty grains.

JACOPONE DA TODI, in *Biography*, an Italian poet of the 13th century, was born at Todi, of the noble family of Benedetti, or Benedettoni. He was brought up to the profeſſion of the law, in which he practiſed, obtained a fortune, and lived in every reſpect as a man of the world. A ſerious accident which befel his wife, and occaſioned her death, led him to reflection, and he immediately devoted himſelf to religion. He entered the order of the Franciſcans: to receive the humiliation of contempt he counterfeited folly, and ſucceeded ſo well, that his baptiſmal name of Jacopo was changed into the nick-name of Jacopone. The rigour of his ſuperiors ſurpaſſed his own voluntary mortifications, and for a ſlight offence he was thruſt into a noiſome dungeon, where he is ſaid to have compoſed one of his moſt rapturous canticles of divine love. He underwent greater ſufferings from the reſentment of pope Boniface VIII., on account of ſome reflections thrown out reſpecting the evils brought on the church by that pontiff. He was cloſely impriſoned, and allowed no other ſuſtenance than bread and water. He ſurvived his liberation but three years, and died in 1306. His “Spiritual Canticles” have given him a place among the Italian poets. Of this work the beſt edition is that of Venice, in 1617. Moreri.

JACPOE, in *Geography*, a town on the W. coaſt of the iſland of Borneo. S. lat. 0° 14′. E. long. 109° 21′.

JACQUELOT, ISAAC, in *Biography*, was born at Vaſſy, in Champagne, in the year 1647. He was educated for the miniſtry and as ſoon as he had arrived at man's eſtate he was appointed his father's colleague in the church of his native place. After the revocation of the edict of Nantz he retired to Heidelberg, and from thence he removed to the Hague. His talents as a preacher acquired for him a high reputation, and he was ſolicited by the king of Pruſſia to become his miniſter at Berlin; to which he readily acceded, and enjoyed a handſome penſion from his majeſty till his death in 1708. He was author of many works, among which are “Diſſertations on the Exiſtence of God;” “Diſſertations on the Meſſiah;” and “A Treatiſe on the Inſpiration of the Sacred Books.” He wrote and publiſhed “A Criticiſm on the Picture of Socinianiſm,” written by Jurieu, which expoſed M. Jacquelot to a bitter perſecution.

JACQUES, FRERE (*Friar* JAMES), whoſe ſurname was BAULOT, or BEAULIEU, a celebrated lithotomiſt, and a man of ſingular character, was born, in 1651, at a village in Franche-Comté, where his father was a poor labourer. At the age of ſixteen he was ſeized with an inclination to travel. The education, which he had received, did not extend beyond writing and reading; but he had an ardent deſire for other knowledge, and a propenſity, which he felt for the practice of ſurgery, was put in the way of gratification, by himſelf becoming a patient in the hoſpital of his province. During his convaleſcence, he applied himſelf with great aſſiduity to aſſiſting the ſick, and learned to bleed. He ſoon afterwards enliſted in a regiment of cavalry, in which he ſerved ſome years, and became acquainted with an Italian empirical ſurgeon, named Pauloni, who had become famous for cutting for the ſtone, and curing ruptures. Having procured his diſcharge, at the age of twenty-one, Jacques attached himſelf to this empiric, and travelled with him five or ſix years, in various countries, as an aſſiſtant. At length feeling himſelf equal to undertake the practice without a director, he quitted Pauloni, and began to act for himſelf in the villages and country towns of Provence, taking no more recompence for his ſervices, than juſt ſufficed for his humble maintenance. After having practiſed his art eight or ten years, he put on a monaſtic habit, in 1690, or 1691, but not of any particular religious order, and took the name of *frere* Jacques, by which he was ever afterwards diſtinguiſhed. He now viſited the larger towns; eſpecially Marſeilles, and went alſo into other provinces, where he chiefly operated upon the poor; but, among the perſons of rank whom he cut, was a canon of Paris, who recommended him to viſit the metropolis, and gave him letters of introduction. He arrived at Paris in Auguſt 1697, and was ordered to perform his operation on the dead body in the preſence of the phyſicians and ſurgeons of the Hôtel-Dieu. But although one or two of theſe officers gave a preference to his operation, prejudice and envy prevailed, and he was not allowed to practiſe it on the living body. He, therefore, quitted Paris in October of the ſame year, and went to Fontainebleau, the reſidence of the court, where the ſucceſs of his operation, in the preſence of the principal medical men, obtained him a reputation, which led to a ſecond viſit to Paris; where he is ſaid to have been unſucceſsful in a large proportion of his operations, and was taxed with extreme ignorance of anatomy, as well as of the art of ſurgery in general, ſo that he refuſed, it was alleged, to pay much attention to the wound, ſaying, that “it was ſufficient that he had removed the ſtone; God would heal the patient.” Time and experience, however, taught him better; and he employed proper dreſſings and treatment. His name ſpread throughout Europe as the moſt ſucceſsful lithotomiſt of his time; and between the years 1688 and 1714, he viſited Holland, Geneva, Flanders, and the principal cities, performing an immenſe number of operations with various ſucceſs. When at Paris, in 1703, he performed his operation on the marſhal de Lorges, who died on the following day, and he quitted that city in ſome diſgrace, reſolved never to return. He was much honoured by the magiſtrates of Amſterdam, who cauſed his portrait to be engraved, with the inſcription, “Frater Jacobus de Beaulieu, Anachoreta Burgundus, Lithotomus omnium Europæorum peritiſſimus;” and above it, this motto, as a juſtification of ſome of his failures,—"Quia non omnes convaleſcunt, non idcirco nulla medicina eſt."—The celebrated ſurgeon and anatomiſt, Rau, oppoſed him, however, with acrimony; but did not refuſe to borrow from him his method, which, with ſome improvements, conſtituted the *lateral operation*, afterwards brought to perfection in England by Cheſelden. In the courſe of his travels, Frere Jacques was called to Vienna to be conſulted for the emperor Joſeph; and at Rome, he was received with great honour by the pope. But tired at length with wandering about, he ſought his native village: his parents were dead; and, having diſtributed ſome money among his nephews, he choſe a quiet retreat near Beſançon, with a view of finiſhing his days in retirement and tranquillity. And after a ſojourn of a few weeks, he died, in December 1714, at the age of ſixty-nine, with all the tokens of ſincere piety. Frere Jacques, though in ſome meaſure chargeable with the temerity of ignorance, was a man of genius and of an elevated mind, and deſerves to rank among the improvers of an uſeful art. He publiſhed an account of his method of operating, in 1702, in a pamphlet of eight pages; and it was reprinted by M. Morand in the ſecond part of his "Opuſcules." Eloy. Dict. Hiſt.—Gen. Biog.

JACQUIER, Francis, a very learned eccleſiaſtic and mathematician, was born at Vitry, near Paris, in 1711, and died at Rome in 1788. He was one of the editors of what is generally known in this country as "The Jeſuits' edition of Sir Iſaac Newton's Principia." This edition, which was publiſhed in four thin volumes in 4to. in the year 1760, is illuſtrated with a perpetual commentary, for the benefit, as the editors avow, neither of the very learned, nor of thoſe who are wholly unſkilled in mathematical ſcience. Jacquier was author of ſeveral works written in the Italian language.

JACQUINIA, in *Botany*, ſo named by Linnæus, in honour of the celebrated Nicholas Joſeph Von Jacquin, profeſſor of botany at Vienna, born at Leyden in 1727, who was early diſtinguiſhed by the publication of his hiſtory of American plants, as he has ſince been by numerous very ſplendid works. This venerable author is, as far as we know, ſtill living at Vienna, and has an only ſon, Joſeph Von Jacquin, who reſided for ſome time in England about twenty years ago, and treads in his father's ſteps.—Linn. Gen. 101. Schreb. 137. Willd. Sp. Pl. v. 2. 1064. Mart. Mill. Dict. v. 2. Jacq. Amer. 53. Ait. Hort. Kew. ed. 2. v. 2. 5. Juſſ 151. Lamarck. Illuſtr. v. 2. 45 t. 121.—Claſs and order, *Pentandria Monogynia*. Nat. Ord. *Sapotæ*, Juſſ. *Myrſineæ*, Brown.

Gen. Ch. *Cal.* Perianth inferior, of five roundiſh, concave, permanent leaves. *Cor.* of one petal; tube bell-ſhaped, inflated, longer than the calyx; limb in ten roundiſh ſegments, of which the five inner ones are ſhorteſt. *Stam.* Filaments five, awl-ſhaped, inſerted into the receptacle; anthers arrow-ſhaped. *Piſt.* Germen ſuperior, ovate; ſtyle the length of the ſtamens; ſtigma capitate. *Peric.* Berry roundiſh, pointed, of one cell. *Seed* ſolitary, roundiſh, cartilaginous.

Eſſ. Ch. Corolla in ten ſegments. Stamens inſerted into the receptacle. Berry with one ſeed.

Obſ. The germen contains the rudiments of ſeveral ſeeds, one of which only, for the moſt part, comes to perfection. Hence the embryo, naturally erect, becomes tranſverſe from the altered poſition of the ſeed in ripening. See Brown's Prodr. v. 1. 533.

Five ſuppoſed ſpecies of *Jacquinia* are defined by Willdenow, but of theſe one is indicated by Mr. Brown as a new genus, belonging to a very different order, the *Rubiaceæ*. This is *J. venoſa* of Swartz's *Prodromus*, omitted either by accident or deſign, in his *Flora Ind. Occid.* The place of this, however, is ſupplied by a new ſpecies from the ſecond edition of the *Hortus Kewenſis*. They are all ſhrubby or arboreſcent, with rigid, ſmooth, entire, ſcattered *leaves* on ſhort *ſtalks*, each with a pair of minute, awl-ſhaped, intrafoliaceous, deciduous *ſtipulas*, not always diſcernible. *Flowers* terminal, racemoſe or ſolitary, white, yellow, or orange-coloured, on ſmooth ſtalks.

1. J. *arborea*. Vahl. Eclog. Amer. faſc. 1. 26. Willd. n. 1.—Leaves obovate, ſomewhat wedge-ſhaped. Branches even; the lowermoſt quaternate; upper ones forked.—Found by Mr. Ryan in the iſland of Montſerrat, on the ſea coaſt in one place only, near the road called New Windward. A *tree* from four to 20 or 30 feet high, the trunk from ſix to eight inches thick, the branches ſcarcely ſwelling under their ſubdiviſions, in which character and its greater ſize only it differs from the following, and they ought ſurely to be conſidered as mere varieties.

2. J. *armillaris*. Linn. Sp. Pl. 272. Jacq. Amer. 53. t. 39.—Leaves obovate, ſomewhat wedge-ſhaped. Branches ſwelling under their ſubdiviſions; whorled below; forked above. Cluſters many-flowered.—Native of the Weſt Indies. A handſome *ſhrub*, ſeldom more than four or five feet high. *Leaves* two inches long, emarginate, ſometimes with a minute point. *Flowers* about 20 in a cluſter, the ſize of lily of the valley, white, ſmelling like jaſmine. *Berry* as big as a pea, reddiſh orange. The Indians are ſaid by Jacquin to make bracelets of the ſeeds, whence the ſpecific name, and the leaves to intoxicate fiſh if thrown into the water.

3. J. *aurantiaca*. Ait. Hort. Kew. ed. 2. v. 2. 6.—Leaves obovate or lanceolate, with ſpinous points. Cluſters of few flowers.—Diſcovered in the Sandwich iſlands by Mr. Archibald Menzies, by whom it was introduced into the Kew garden in 1796. It is kept in the ſtove and flowers moſt part of the ſummer. The upper *leaves* of each branch reſemble thoſe of the two foregoing, but the lower ones are ſmaller and almoſt lanceolate; every one of them is tipped with a rigid ſpine. The *branches* and *ſtalks* are ſlightly downy. *Flowers* orange-coloured, only three in the cluſter of the only ſpecimen we have ſeen, which is preſerved in the Bankſian herbarium.

4. J. *ruſcifolia*. Linn. Sp. Pl. 271. Jacq. Amer. 54. Ait. Hor. Kew. ed. 2. v. 2. 6. (Fruticulus foliis ruſci ſtellatis; Dill. Elth. v. 1. 148. t. 123. f. 149.)—Leaves all lanceolate, with ſpinous points. Flower-ſtalks ſimple.—Native of South America. Found by Jacquin in mountainous woods at the Havannah, flowering in January and February.—A rigid *ſhrub*, three feet high, with narrow, coriaceous, ſpinous-pointed *leaves*, whoſe form is like the lower leaves of the ſpecies laſt mentioned. The *ſtalks* are ſingle-flowered, recurved as the fruit ripens.

A large variety, as it appears to be, of this ſpecies, received by Miller from Carthagena, and called by that author in his Dictionary *Ruſcus fruteſcens*, is preſerved in the Bankſian herbarium. Its larger *leaves* ſomewhat approach thoſe of the *aurantiaca*, but the *flower-ſtalks* are ſimple.

5. J. *linearis*. Linn. Sp. Pl. 272. Jacq. Amer. 54. t. 40. f. 1.—Leaves linear, with ſpinous points. Flower-ſtalks ſimple, reflexed.—Native of the ſea-ſhore near Port-au-Prince in Hiſpaniola, bearing flowers and fruit in January. *Jacquin*. Much ſmaller than any of the foregoing, with leaves ſcarcely more than an inch long. *Flowers* ſmall, white, inodorous, on ſlender reflexed ſtalks.

JACRAH, in *Geography*, a town of Bengal; 35 miles S. of Burdwan.

JACTITATION *of* Marriage. See Marriage.

JACULATOR, or Shooting-fish, in *Ichthyology*, is a ſpecies a ſpecies of the *chætodon* in the Linnæan ſyſtem, or the CHÆTODON *Roſtratus*; which ſee.

JACULGONG, in *Geography*, a town of Hindooſtan, in Dowlatabad; 18 miles S. of Oudighir.

JACULUM, or JACULUS, in *Zoology*, the name of a ſpecies of ſerpent, (the ANGUIS *Jaculus*,) found in Rhodes, and ſome other places, and more uſually called *Acontias*; which ſee. It is found in Egypt, with the abdominal ſcales ſomewhat broader.

JACULUS. See DIPUS *Jaculus*.

JACUPEMA, in *Ornithology*, the name of a Braſilian bird of the pheaſant kind, nearly as large as the common European hens. Its feet are of a fine red; it is a very well taſted fowl, and is eaſily kept tame. It has its name from the noiſe it makes, which is, *jacu, jacu, jacu*. Margrave. See PENELOPE *criſtata*.

JACURSO, in *Geography*, a town of Naples, in Calabria Ultra; 8 miles W. of Squillace.

JACURUTU, in *Ornithology*, the *Bubo Magellanicus*. See STRIX *Bubo*.

JACUSI, in *Geography*, a town of Japan, in the iſland of Niphon; 25 miles N. E. of Achiia.

JACUT, in the *Natural Hiſtory of the Arabians*, is generally ſuppoſed to be the name of the ruby only; and it is owing to this, that among the gems uſed by the Arabian phyſicians in medicine, the ruby is ſuppoſed to have been moſt of all in eſteem, as the name jacut oftener occurs in their writings than that of any other of the gems.

JACUT-AGA, is the name of an officer in the court of the grand ſeignior. He is one of two eunuchs who have the care of the treaſure.

JACZIN, in *Geography*, a town of Poland, in Galicia; 34 miles S.W. of Halicz.

JACZINOW, a town of Galicia; 52 miles S. of Halicz.

JADDESSES, is the name of an inferior order of prieſts in Ceylon, who have the care of the chapels appropriated to the genii, who form a third order of gods among theſe idolaters. Theſe prieſts are applied to by the people in a time of diſeaſe or calamity, who offer a cock on their behalf to appeaſe the anger of the dæmons.

JADE, in *Natural Hiſtory*. See NEPHRITIC *Stone*.

JADEL, in *Geography*, a town of Aſiatic Turkey, in the province of Diarbekir; 20 miles N.W. of Rabba.

JADERA, in *Ancient Geography*, a town and colony of Liburnia, placed by Pliny 160 miles from Pola. We find references to it in the medals of Claudius and Juſtinian.

JADEVAR, in *Geography*, a town of Hindooſtan, in Viſiapour; 15 miles S E. of Raibaug.

JADGEREM, or JAGEROM, a town of Perſia, in the province of Choraſan. N. lat. 36° 23′. E. long. 55° 42′.

JADJAPOUR, a town of Bengal; 33 miles S S.E. of Moorſhedabad.

JADISPOUR, a town of Hindooſtan, in Bahar; 21 miles W. of Arrah.

JADO, a town of Japan, in the iſland of Niphon; 5 miles S.E. of Meaco.

JADREKA, in *Ornithology*. See SCOLOPAX *Limoſa*.

JADUNATPOUR, in *Geography*, a town of Hindooſtan, in Bahar, on the Soane; 20 miles W.S.W. of Rotaſgur.

JAEGERSPREIS, a town of Denmark, in the iſland of Zealand; 22 miles N.W. of Copenhagen.

JAEL, a town of Hindooſtan, in the circar of Nagore; 16 miles N.E. of Nagore.

JAEN, a province of Spain, from which the king of Spain takes the title of king of Jaen, whence it is called a kingdom, and having been a kingdom in the time of the Moors, till it was annexed to the crown of Caſtile: it is now comprehended under the government of Andaluſia, and forms one of its diviſions. It is about 60 miles from N. to S. and about as much from E. to W., itſelf mountainous and ſurrounded with mountains, which afford mines of lead, copper, and ſilver, and which ſeparate it from the kingdoms of Cordova, Toledo, Murcia, and Granada. The river Guadalquivir divides it from the kingdom of Seville. The valleys of this province are merely ſuch as have been formed by torrents of water; and the decompoſition of the hills, not contiguous or connected, have at different periods produced thoſe gaps and paſſes, which now form the roads in this petty kingdom, once the domain of a Mooriſh chieftain, and for a long period the theatre of chivalry, honour, and love. In the centre of this rugged kingdom, about ¾ of a league from the town of Linares, is a ſmall plain ſituated in the moſt elevated part of the country, which affords an extenſive proſpect, comprehending Jaen the capital, as well as Andujar, Baeça and Ubeda. The hills at the extremity of this place are pierced like a ſieve, with innumerable ſhafts and excavations, ſuppoſed to be the work of the Moors, from which they ſupplied the neighbouring ſtates with ſilver, copper, and lead. The common or wild camomile is ſo common here, that the whole kingdom might be ſtocked with it; here is alſo plenty of game. The principal towns of this ſmall kingdom are Jaen, Baeça, Ubeda, Caçorla, and Caſlona.

JAEN, the capital of the above kingdom, is ſaid by ſome to have been the Oningi of Pliny, and the Oringi of Livy, and, according to others, the Menteſſa of the Romans. It is ſituated at the foot of a mountain of mixed marble, at the top of which the ruins of its antique caſtle are viſible, a league from the river Guadilbeva, and two from the Guadalquivir. It is ſurrounded by walls, flanked with towers; contains ſome ſquares, one of which is ſpacious, and is formed by pleaſant houſes. It is well ſupplied with water, which is diſtributed by fountains in the ſquares, ſtreets and houſes. This city is the ſee of a biſhop, ſuffragan of the archbiſhop of Toledo: its dioceſe contains two cathedral chapters, two collegiate chapters, ſeven arch-prieſts, and 438 pariſh churches. Beſides the cathedral, which is a noble ſtructure, and pariſh churches, Jaen has a great number of monaſteries and nunneries, and two hoſpitals. The chapter of the cathedral is compoſed of eight dignitaries, 21 canons, 21 prebendaries, and 30 prieſts who ſerve the church. This city is the reſidence of the intendant of the province: it has a criminal judge, and a lord mayor for the adminiſtration of juſtice, a municipality compoſed of a determinate number of regidors, a board of economy, and a population of about 30,000 perſons. Jaen was taken from the Moors by Ferdinand II. king of Caſtile, in 1243. It was formerly rich and commercial, and had a great number of ſilk manufactories; but theſe became almoſt extinct at the end of the 16th and beginning of the 17th century. An attempt was made to revive them about the middle of the 18th century; but few of them are now remaining. The environs of Jaen are extremely agreeable, abounding with delightful fertile valleys, and furniſhing great quantities of corn, hemp, flax, paſture, and exquiſite fruits. The lands belonging to the town yield the ſame productions, in ſtill greater plenty: they are particularly planted with trees of every kind, and as there is no deficiency of mulberry trees, the ſilk-worm is raiſed; but it is an object very much neglected; 45 miles E. of Cordova. N. lat. 37° 53′. W. long. 3° 51′.

JAEN *de Bracamoros*, a province of South America, in the viceroyalty of New Granada. It is the moſt ſouthern of the viceroyalty, and was ſubdued by Pizarro about the year 1540. In the mountains is found ſome gold; and the plains produce cotton, excellent chocolate, and tobacco.

Jaen de Bracamoros is alſo the name of a town, the capital of the above province, which was founded in the year 1549 by Diego Palomino. It is ſituated in the juriſdiction of Chaca-Inga, on the N. ſhore of the river Chinchipe, at its conflux with the Maranon, and is the reſidence of the governor. It lies in about 5° 25′ S. lat. and its longitude is nearly that of Quito. It contains between 3 and 4000 inhabitants, who are for the moſt part Meſtizos, with ſome Indians, but very few Spaniards.

JAEPOUR. See JYENAGUR.

JAERSBORG, a town of Denmark, in the iſland of Zealand; 5 miles N.N.W. of Copenhagen.

JAFA, a territory of Arabia, ſurrounded by Aden, ſome part of the Imam's dominions, and the extenſive province of Hadramaut. It is fertile, and abounds particularly in coffee and cattle. It was formerly under the dominion of the Imam; but in the end of the 17th century the inhabitants revolted, and became independent. They are governed at preſent by three ſovereign princes, who have conquered alſo a part of Hadramaut. Theſe princes are, the ſultan of Reſſes, who reſides at Medsjeba, the ſultan of Moſaka, who takes his title from the place of his reſidence, and the ſultan of Kara, who reſides in a caſtle upon the mountain of Kara. One of theſe ſultans of Jafa likewiſe poſſeſſes Schæhr, a ſea-port town, from which incenſe, inferior in quality to that of India, is exported. Niebuhr.

JAFATIN ISLANDS, a cluſter of ſmall iſlands in the Red ſea, near the coaſt of Egypt. N. lat. 27° 10′. E. long. 33° 50′.

JAFERI, a town of Perſia, in Choraſan; 75 miles N.N.W. of Badkis.

JAFFA, YAFFA, YAFA, or YAFFÉ, the ancient *Joppa*, was formerly a conſiderable ſea-port on the Mediterranean, and the only port which the Jews had on that ſea. It was ſeated on a high hill, which commanded a full proſpect of the ſea on one ſide, and of a fertile country on the other. On the S. it had the town of Jamnia, on the N. Cæſarea Paleſtina, and on the E. Rama or Ramula. During the holy war, this city, ſo often mentioned both in the Old and New Teſtament, was ſo entirely ruined, that it had ſcarcely any buildings left beſides the old caſtle, ſituated on an eminence above it, and another near the ſea. The preſent town has been neatly rebuilt with ſtone, but on account of the inequality of its ſituation the ſtreets are paved in ſteps. It is walled, and has two principal gates and a ſmaller one; the latter and one of the former yet remain; the other is ſhut up. It is commanded by an eminence on the N. within muſket ſhot, where Ali Bey, when he beſieged it, pitched his camp. Although it has a good wharf, ſhips cannot come up to it; nor has it any port or ſecure place of anchorage. This port, which is formed by a pier, and at preſent choaked up, might be cleared out, and made to contain veſſels of 300 tons burden each. At preſent ſhips are obliged to caſt anchor out at ſea, at nearly a league's diſtance from the ſhore; where they are by no means ſafe, the bottom being a bank of rock and coral, which extends as far as Gaza. Yafa is the port at which the rice ſent from Damietta to Jeruſalem, the merchandiſe for a ſmall factory at Ramla, and the commodities from the various ports on the coaſt of Syria, are landed. Here alſo the pilgrims from the Morea and Conſtantinople arrive; and here the ſpun cottons of Paleſtine, and other articles of trade, conveyed by ſea, along the coaſt, are ſhipped. Although in its preſent ſtate it does not deſerve mention as a ſea-port, or place of ſtrength, it is capable of being made one of the moſt important on the coaſt, on account of two ſprings of freſh water which are within its walls, on the ſea-ſhore, and which enabled it to make an obſtinate reſiſtance during the late wars. The air, formerly deemed inſalubrious, has, by the draining of ſome adjacent marſhes, been rendered perfectly healthy; and before the two late ſieges, it was one of the moſt agreeable towns on the coaſt. Its environs were a continued foreſt of orange and lemon trees, citrons and palms, which here firſt begin to bear good fruit. The country at a greater diſtance abounded with olive trees as large as walnut trees: but in the ſieges undertaken by Ali Bey and his ſucceſſor Mahomed Abu-dhahal, the Mamlouks cut them down and uſed them for fire wood. It has thus loſt its greateſt convenience and ornament: but it was impoſſible to deprive it of the rivulets that water its gardens, and nouriſh the young ſuckers, which have already begun to ſhoot. This town has three ſmall convents of Chriſtians, Armenian, Greek, and Roman Catholic, and a few Jews. Yafa is one of the three appanages, or "Melkana," into which Paleſtine is divided, the other two being Loudd and Gaza. The former belongs to the Walda, or Sultana-Mother; and is held by an Aga, who pays to her 120 purſes. For this he receives the whole miri and poll-tax of the town, and ſome adjacent villages. But the chief part of his revenue ariſes from the cuſtom-houſe, as he receives all the duties on imports and exports. The government is now mild; and the population, gradually increaſing, may be eſtimated at 6 or 7000 ſouls. Jaffa, in the year 1799, was taken by the French, though not without conſiderable difficulty and bloodſhed, but they held poſſeſſion only 40 days. According to ſir R. Wilſon the conqueſt was followed by a maſſacre of 3800 priſoners, four days after the ſurrender of the town; and he informs us that 580 French ſoldiers, ſick in the hoſpital, were poiſoned with opium by command of the French general Bonaparte; 40 miles S. of Acre, and 40 miles N. of Gaza. N. lat. 32° 2′. E. long. 34° 53′. Volney's Travels, vol. ii. Browne's Travels, p. 359.

JAFFIERABAD, a town of Hindooſtan, in the country of Berar, and circar of Aurungabad, 40 miles N.N.E. of Aurungabad. N. lat. 20° 22′. E. long. 76° 25′.—Alſo, a town of Hindooſtan, on the coaſt of Guzerat, and next to Diu, a place of the greateſt trade on this coaſt. The town is ſurrounded by a wall for its defence. In a river near this town are found very large oyſters. N. lat. 20° 56′. E. long. 70° 36′.—Alſo, a town of Bengal; 6 miles N.W. of Iſlamabad.—Alſo, a town of Oude; 7 miles S.E. of Hajypour.

JAFFIERGUNGE, a town of Bengal; 40 miles E.S.E. of Dacca.

JAFFNA, the capital of the diſtrict of Jafnapatam in the iſland of Ceylon, ſtands at the diſtance of ſome miles from the ſea, but communicates with it by means of a river navigable with boats. The river falls into the ſea near Point Pedro, where are a fort and harbour. The fort of Jaffna was given up by the Dutch to the Britiſh troops, as ſoon as they appeared before it. It is ſmall, but exceedingly neat and well built. The Pettah, or Black Town, without the walls, which is of a quadrangular figure, is large and more populous than that of Trincomalee. Since Columbo was taken poſſeſſion of by the Engliſh, ſeveral Dutch families have quitted it, and taken up their reſidence in the vicinity of Jaffna; as this latter place is much cheaper and better ſupplied with all the neceſſaries of life, ſeveral of which are ſcarcely to be procured in the other parts of the iſland. The inhabitants of Jaffna conſiſt of a collection of various races. The greateſt number conſiſts of Malabars of Mooriſh extraction, who are divided into ſeveral tribes, known by the names of Lubbahs, Belalas, Mopleys, Chittys, Choliars, and a few Brahmins;

they are diſtinguiſhed by wearing a little round cap on their cloſe ſhaven heads. There is alſo a race of Malabars found here ſomewhat differing in their appearance from thoſe on the continent. Theſe different tribes of foreign ſettlers greatly exceed in number the native Ceyloneſe in the diſtrict of Jaffna. The Malabars are employed in manufacturing cotton, cloths, &c. The Chittys and Lubbahs trade in cloths, calicoes, handkerchiefs, &c. and go backwards and forwards to the continent to carry on this trade. The Lubbahs are Moors and Mahometans. The Bela'as are numerous; they are chiefly huſbandmen and attend to tillage and rearing cattle. Theſe are extremely litigious and quarrelſome; and, although profeſſed Chriſtians, they obſerve ſcarcely any of the ordinances of our religion. They are in ſome meaſure Pythagoreans; and ſay when a child is born lame, blind, or dumb, that it was formerly the ſoul of a perſon, who muſt have deſerved this puniſhment by his actions in a former ſtate. They are extremely ſuperſtitious, and attached to many of the rites of Paganiſm.

The Choliars and Chivias do the hard work; are porters, palankeen bearers, and water carriers; though ſome are deſcended from the higher order, and will only carry the great men. The Panias and Pariars are the fiſhermen, as alſo the Mokkouas. The Nalloaus are the blackeſt of all the tribes. They gather the toddy from the cocoa-trees, make arrack, tend the cattle, and are labourers and Coolies. The Pariars are accounted the loweſt and moſt deſpicable. All theſe in ſome meaſure partake of the Ceyloneſe cuſtoms and habits of life, mingled with their own. They inhabit various parts of the north-weſt coaſts of Ceylon.

At Jaffna there is alſo a number of handicraftſmen, ſuch as goldſmiths, jewellers, joiners, and makers of all different parts of houſehold furniture. They are very expert in their reſpective operations; particularly that race known in this iſland by the name of Portugueſe, who ſurpaſs all the reſt in the beauty and dexterity of their workmanſhip.

JAFFNOO, a kingdom of Africa, bounded on the N. by Sahara or the great deſert, on the E. by Ludamar, on the S. by Kaſſon, and on the W. by Geduma. N. lat. 15° to 15° 40′. W. long. 7° 40′ to 9°.

JAFFRAY, a poſt-town of America, in Cheſhire county, New Hampſhire, on the S. ſide of the great Monadnock mountain, ſix miles N. of the Maſſachuſetts line; incorporated in 1773, and containing 1341 inhabitants. Here are found red and yellow ochre, alum, vitriol, and black lead in great quantities: and alſo buck-bean or menyanthes, reckoned uſeful in Medicine.

JAFFRYGUNGE, a town of Bengal; 43 miles N.E. of Purneah.

JAFNA. See JAMNIA.

JAFNAPATAM, a diſtrict of Ceylon, comprehending an oblong peninſula in the northern extremity of the iſland, almoſt cut off from the reſt by a branch of the ſea, which penetrates acroſs the iſland, except that a ſmall ſtrip of land remains, which is nearly inundated at high water. This diſtrict looks directly towards Negapatam on the Coromandel coaſt, and is conſidered as the moſt healthy in the iſland: a circumſtance which is aſcribed to its being ſurrounded almoſt on all ſides by the ſea, by which means the violent hot winds from the continent of India are cooled in their paſſage. The fields, clothed with verdant paſture, exhibit a convincing proof of the temperate nature of the climate. Fruits, vegetables, game, and poultry abound every where in this diſtrict; and it ſeems that the atmoſphere differs in ſome reſpect or other from that contiguous to other parts of the iſland; as it is only in the tract which lies between Point Pedro and Jaffna that ſheep have been ever reared with ſucceſs. The articles of commerce produced here are of no great value; the cinnamon and pepper being of an inferior kind to that which grows in the S.W. of the iſland. Jafnapatam was once a kingdom by itſelf, but was divided into ſeveral provinces. It is very populous, and has a great number of villages and churches, for all the various denominations of its inhabitants. The four leſſer provinces contained in it are Beligame, Tennermarche, Waddermarche, and Patchiapalle. The Dutch built a church in 1658 at Telipoli, near a ſhady and pleaſant grove. Several very good villages lie along this diſtrict, with churches and ſchool-houſes for educating the native children. The paſſage from Point Pedro to Negapatam on the oppoſite coaſt is uſually made by boats in a few hours. The king of Jafnapatam built a ſmall fort here againſt the incurſions of the Moors and Malabars. It was taken by the Portugueſe in 1620, and loſt by them in 1658. This was the laſt ſtation retained by them in the iſland.

Dependent upon the diſtrict of Jaffna, and at a ſmall diſtance in the ſea to the north-weſt of Point Pedro, are ſeveral ſmall iſlands, which the Dutch named from their own native cities, Delft, Haarlem, Leyden, and Amſterdam. Theſe iſlands they employed in breeding horſes and cattle, as from their excellent paſturage they are better adapted to this purpoſe than any part of Ceylon. The Engliſh government continues the ſame ſyſtem. The horſes are bred under the ſuperintendance of officers appointed for the purpoſe, and, when at proper age, are diſpoſed of on account of government. Percival's Ceylon.

JAFRABAD, a town of Perſia, in the province of Irak; 20 miles E.S.E. of Sava.

JAG, in *Mining*, ſignified formerly a drove or number of pack-horſes, uſed for carrying ore, lead, &c.; and hence the carriers of ore for hire in Derbyſhire are ſtill called *jaggers*, although carts and waggons have long been ſubſtituted for pack-horſes in this diſtrict. Jag or join of ale, is alſo a term among the miners here for a quantity of ale ſent for by a party of them at their work.

JAGA, in *Geography*, a town of Africa, in the country of Kaſſon, on the ſouth ſide of the Senegal. N. lat. 14°.

JAGA *Calanda*, a town of Africa, in the kingdom of Matamba; 70 miles N.W. Sta. Marin de Matamba.

JAGA *Coconda*, a country of Africa, S. of Benguela.

JAGAMI, a town of Japan in the iſland of Niphon, 80 miles N.W. of Meaco.

JAGANABATTA, a town of Bengal, 42 miles S.W. of Burdwan. N. lat. 22° 35′. E. long. 87° 50′.

JAGANATH, in *Hindoo Mythology*, a name of Viſhnu and of Kriſhna; more generally applied to the latter, who, under the deſignation of Jaganatha, or lord of the univerſe, has a very celebrated temple dedicated to him in the territories of the raja of Berar. It is ſituated in the province of Cuttack, near the ſea-ſhore in the bay of Bengal, and is annually viſited by an immenſe concourſe of pilgrims. It is ſaid that all ſects of Hindoos venerate the ſanctity of this ſacred temple, and reſort thither in expiation, by ablutions, prayers, alms, and auſterities, of ſin, or in the hope of ſpiritual or temporal advantage; it may, however, be concluded that the pilgrims are chiefly of the ſect who excluſively worſhip Kriſhna as the deity; which ſect is called Gokalaſtha; Gokal being another of Kriſhna's names. The extreme care with which Hindoos avoid eating with an individual of an inferior tribe, or partaking of food ſo prepared, is a well known fact; but an exception from its generality is ſaid to obtain at Jaganath, where the high and low, the Brahman and the

Pariar, aſſociate and eat together. In the late war between the Engliſh and the Mahratta confederates, this temple, with the greater part of the province in which it is ſituated, fell into the hands of the former; but of courſe ſuffered no profanation: on the contrary, its ſanctity was guarded with more than native vigilance; immunities were extended to pilgrims, and their approach to its holy precincts greatly facilitated. A ſimilar policy at the ſacred city of Benares has now for many years operated very favourably on the Engliſh character. While under Hindoo government, a heavy toll was impoſed on the entrance of individuals, and this toll or tax was arbitrary, in reference to the ſuppoſed wealth of the viſitor. This, as may be ſuppoſed, gave riſe to much vexation and injuſtice. Its abolition was a very popular meaſure, and has contributed, among other cauſes, to render Benares one of the moſt populous and wealthieſt cities in the world. See BENARES.

JAGARESTE, in *Geography*, a town of Thibet; 180 miles N. of Fyzabad. N. lat. 29° 38′. E. long. 81° 30′.

JAGARNAUT, a town of Hindooſtan, in the province of Cuttack, famous for a grand pagoda, which lies a few miles E. of Chilka lake, and cloſe on the ſea-ſhore. (See JAGANATH.) It is an excellent ſea-mark, on a coaſt that is perfectly flat and uniform. It has no claim to great antiquity; but major Rennell ſuppoſes, that it ſucceeded the temple of Sumnaut in Guzerat, which was deſtroyed by Mahmood in the 11th century.

JAGAS, or GIAGAS, ſavages of Africa, in the kingdom of *Congo*, (which ſee,) of whoſe cruel practices Cavazzi has given an account, that would be hardly credible, if it were not well authenticated. The women often expoſe their own children to wild beaſts. Some of the Jaga princes take pleaſure in eating young women, and their favourite diſh is a fœtus cut from the womb; and a princeſs is ſaid to have been ſo fond of her gallants that ſhe ate them ſucceſſively. The laws of the Jagas, called "quixillas," preſent a horrible code of vice and cruelty, being certainly the only national code ever enacted for theſe brutal purpoſes. Their moſt delicious beverage is warm human blood. Indeed, the cruelty of the Jagas ſurpaſſes all deſcription. Queen Zinga tore her own ſon from her breaſt, and bruiſing him in a mortar, formed a horrible banquet, which continued to be made in the ſame manner of the bodies of babes. Being regarded as a ſovereign charm, the Jaga chieftain, Caſſangi, uſed to have a young woman killed every day for his table; and ſhe was often ſelected, who had paſſed the night in his bed. Zinga ordered that all her officers, before they proceeded on an expedition, ſhould exerciſe the conjugal myſteries in public, in the midſt of a ſolemn aſſembly with the wife or concubine, who was the moſt favourite object of their love. The ſlaves among the Jagas die in a certain expectation of a ſimilar but happier exiſtence in another world; and it is eſteemed an act of generoſity to kill a beautiful female at the tomb of a friend: the Singhillas, or prieſts and magicians, are ſingularly deſpotic, and while they enforce the laws on others, eſteem themſelves free from their obſervance. As after a battle the bodies are claimed, each warrior is underſtood to wound in a particular part that he may ſelect his prey. The women, by the account of the author above cited, are as ferocious as the men, and delight to cleave the ſkull and ſuck the warm brains of the ſlain. Five or ſix ſtrong men will at once deſtroy and ſhare a captive, by cutting where their portions begin, and tearing him in pieces. But the above relation affords a ſufficient ſpecimen of their ſavage manners and conduct.

JAGERNDORF, in *Geography*, a principality of Sileſia, originally part of Troppau, and firſt eſtabliſhed as a diſtinct principality in favour of duke Nicholas V: but ceded, at the peace of Berlin in 1742, by Maria Thereſa, queen of Hungary and Bohemia, to Frederick II. of Pruſſia.—Alſo, the capital of the above principality, ſituated on the Oppa, containing two churches and a convent; 12 miles N.W. of Troppau. N. lat. 50°. E. long. 17° 40′.

JAGERSBURG, a town of Brandenburg, in the New Mark; 15 miles E. of Arenſwald.—Alſo, a town of Heſſe-Darmſtadt; 13 miles S.S.W. of Darmſtadt.

JAGHAUS, a town of Germany, in the Tyroleſe; 14 miles N W of Schwas.

JAGHIRE, a term in India, which denotes a grant of land from a ſovereign to a ſubject, revocable at pleaſure; but generally, or almoſt always for a life rent. Hence are derived "jaghiredars," or holders of jaghires: their titles to their poſſeſſions being nominally during their life-time only, though ſome of them in the Mahratta ſtate have long ſince become hereditary. This term "Jaghire" is applied to the Eaſt India company's lands in the Carnatic, extending from Madras to the Pullicate lake, northward; and to Alemparvé, ſouthwards; and weſtward, beyond Conjeveram: that is, about 108 Britiſh miles along ſhore, and 47 inland, in the wideſt part. This Jaghire is underſtood to be held in perpetuity. It contains about 2440 ſquare miles; and its revenue is reckoned at about 150,000*l.* per annum.

JAGIPOUR, a town of Hindooſtan, in Bahar, on the left bank of the Ganges; 48 miles E.S.E. of Hajypour.

JAGNEVO, a town of European Turkey, in Servia; 8 miles S. of Priſtina.

JAGNIDE, *Ital.* See HYAGNIS.

JAGO, in *Geography*, a town of Africa, in Guinea, on the river Formoſa; 70 miles from the ſea.

JAGO, *St.* the capital of the kingdom of Chili. See SANTIAGO.

JAGO, *St.* a town of the iſland of Cuba, which was formerly its capital, but of late much reduced from its former ſplendour, is ſituated at the diſtance of 269 leagues from Havannah, in a hilly country, ſubject to ſlight earthquakes. It lies near the ſouth coaſt, on a bay, about ſix miles from the ſea: the haven is ſpacious and ſecure, the entrance being by a channel two leagues in length, defended by a caſtle at the extremity. The women are regarded as the moſt handſome in the iſland. It is the ſee of a biſhop, ſuffragan of St. Domingo. N. lat. 20° 15′. W. long. 75° 32′. See CUBA.—Alſo, a town of Mexico, in the province of Guaxaca; 45 miles E.S.E. of *Guaxaca*; which ſee.—Alſo, a river of Mexico, which runs into the Pacific ocean, N. lat. 22° 30′. W. long. 106°.—Alſo, a town of New Mexico, in the province of New Leon.—Alſo, a town of California; 120 miles W. of Loretto.—Alſo, a town of Paraguay; 154 miles S. of Aſſumption.—Alſo, a river of Peru, which runs into the Pacific ocean, N. lat. 1° 20′.

JAGO, *St.* or *Santiago*, the chief of the Cape Verd iſlands; it is one of the moſt fertile and beſt cultivated, about 40 Britiſh miles in length, by 20 in breadth. Although it has many mountains, it has been reckoned the moſt unhealthy of theſe iſlands. The people are generally black, or of a mixed colour; a few of the better rank excepted. The principal production of this iſland is cotton; and the chief fruits are grapes, plantains, citrons, lemons, oranges, muſk and water melons, limes, guavas, pomegranates, quinces, cuſtard-apples, papas, and other tropical fruits. Its animals are cows, horſes, aſſes, mules, deer, hogs, goats, and black-faced monkies with long tails. Of the feathered birds there are cocks, hens, ducks, Guinea hens, parroquets, parrots, pigeons, turtle-doves, crab-catchers, curlews, and many of them valuable for their plumage. The population of this iſland is eſtimated at about 12,000 perſons. When it was viſited by ſir George Staunton in November, 1792, in his voyage to China, the iſland was in a ſtate of abſolute famine. Little or no rain had fallen there for three years before, the rivers were almoſt entirely dry: the ſurface of the earth was in general deſtitute of any herbage; the greateſt part of the cattle had already periſhed, not leſs through drought than want of food. Of the inhabitants many had emigrated, and many were famiſhed to death. The plains and fields, formerly productive of corn, ſugar-canes, or plantains, nouriſhed by regular falls of rain, now bore little ſemblance of vegetation. Of the iſland of St. Jago, the ſouth-weſt ſide only had any appearance of volcanic formation. About two miles from Praya bay is a very high hill, altogether compoſed of clay and ſand, on which appeared not the leaſt marks of the action of fire. About ſix miles, near the road, from the town of Praya to that of St. Jago, is another hill, almoſt entirely compoſed of rich iron ſtone, of a deep blue or purple colour, formed of clay, calx of iron, and ſiliceous earth. In the rocks oppoſite the governor's houſe, near Praya, are ſeveral narrow perpendicular veins of white ſpar. The beach is covered with a fine ſiliceous ſand. The Portugueſe maintain no force at St. Jago, capable of inſuring a proper reſpect to their flag there; and ſo far are they from drawing any revenue from the place, that ſupplies are ſent to it from Portugal. A trade for ſlaves from Africa is eſtabliſhed at St. Jago; and that trade is a monopoly to the crown. The governor derives his chief profit from the ſales of cattle to the ſhips which call there; and of the amount of theſe ſales he claims a moiety. Such is the ſtate of the inhabitants, that they altogether depend for a ſupply of whatever their own iſland cannot afford, upon veſſels caſually ſtopping there. They ſet little value upon money, which might long lie uſeleſs in their hands; preferring to barter whatever they have to ſell, for a return, principally of corn or clothing, rather than any quantity of ſpecie that would be offered to them. The water obtained here is neither good nor eaſy to be had. The chief towns are St. Jago and Praya. N. lat. 15° 4'. W. long. 23° 40'.

Jago, *St*, *Ribera*, or *Riveira*, a town of the above mentioned iſland, and formerly its capital, is ſituated in the bottom of a vale, between an elevated plain, on the boundary of which is a fort in ruins, which was originally deſigned to defend the ſteep deſcent towards the town, and a high hill oppoſite to it. This vale ſeemed to have been ſcooped out by the force of a violent torrent, rolling along with it great rocks which ſtood in its paſſage, and emptying itſelf with them into the ſea. There a ſmall, irregular, and unſafe harbour was formed by theſe rocks, while the current itſelf is diminiſhed into a ſtream, ſo ſmall and ſluggiſh, that it cannot clear its mouth from the ſands which the tide throws in, and by which it is almoſt choaked up. On each ſide of this little ſtream are remains of dwellings of conſiderable ſolidity and ſize; and the fragments of glaſs luſtres, ſtill hanging from the ceilings of the principal apartments, denote the elegance or riches that were once diſplayed in this now deſerted place. It had formerly 300 houſes built of rough ſtone, a church, and a convent. But ſir George Staunton, who viſited it in his "Embaſſy to China" ſays, that not above half a dozen families remained in it; the reſt had abandoned it, or periſhed. He adds (vol. i. p. 135.) here was ſtill, however, an attempt at a ſlight manufactory of ſtriped cotton ſlips, the ſame as are made in other parts of the iſland, for the uſe of the Africans on the Main, who pay for them in ſlaves, elephants' teeth, and Arabic gum. The governor now reſides at Porto Praya, which is frequented by the ſhips that, for commercial or other purpoſes, touch at this iſland. See Porto Praya.

Jago *de los Cavalleros, St.*, a town of the iſland of Hiſpaniola; 90 miles N. of St. Domingo. N. lat. 19° 36'. W. long. 70° 52'.

Jago *de Compoſtella, St.* See Compostella.

Jago *del Eſtero, St*, a town of South America, capital of the country of Tucuman, and ſee of a biſhop; ſituated on the banks of the Dolce, which is here large and navigable for veſſels of burthen, and which affords great plenty and variety of fiſh. The town contains about 300 houſes, or 500 families, and is deſtitute of walls, ditch, or other fence. The inhabitants are moſtly meſtizos and mulattoes, of a dark yellow complexion, indolent and ſickly from the heat of the climate, and more addicted to pleaſure than labour. Surrounded with foreſts, and ſituated on a plain, the town ſuffers from a ſtagnation of air. It has hardly 300 men fit for bearing arms. The women, who are generally handſome, are troubled with ſwellings or wens in the throat. The adjacent country produces plenty of wheat, rice, barley, and all ſorts of fruits, particularly figs and raiſins. The foreſts, which yield abundance of game, are infeſted with tygers and other beaſts of prey; 650 miles N.N.W of Buenos Ayres. N. lat. 27° 46'. W. long. 65° 12'.

Jago *de Gutagayta, St.*, a town of Peru, in the dioceſe of La Plata, and chief town of the juriſdiction of Chicas, under the government of Buenos Ayres; 80 miles S. of Potoſi.

Jago *de Leon, St.*, See Caraccas.

Jago *de los Montanas, St.*, a town of South America, in Quito; 10 miles N.W. of St. Franciſco de Borja.

Jago *Sanahez, St.*, a town of South America, in the province of Buenos Ayres, on the Parana; 25 miles S. of Corrientes.

Jago *de los Valles, St.*, a town of Mexico, in the province of Guaſteca, on the river Panuco; 60 miles S. of Panuco. N. lat. 22° 40'. W. long. 100° 36'.

Jago *de la Vega, St.* See Spanish *Town.*

Jago *de Veragua, St.*, a town of Mexico, and capital of Veragua, ſituated in a fertile country, abounding with maize, plantains, &c. and plenty of cattle. It contains an elegant hoſpital, and is the ſeat of a governor, whoſe authority extends over 14 towns and villages; 110 miles S.W. of Porto-Bello. Nat. lat. 8° 40'. W. long. 81° 46'.

Jago, *St. Military Order of.* See *St.* James *of the Sword.*

JAGODINA, in *Geography*, a town of European Turkey, in Servia, on a ſmall river, which runs into the Morava; 60 miles S.S.E. of Belgrade. N. lat. 45° 15'. E. long. 20° 56'.

JAGOLEEAH, town of Bengal; 21 miles N.N.E. of Calcutta.

JAGOTPOUR, a town of Hindooſtan, in Oude; 16 miles N. of Manickpour.

JAGOVAT, a town of Perſian Armenia; 12 miles N. of Erivan.

JAGRA, or Jaggery, a name given to a peculiar ſpecies of ſugar, prepared from the cocoa-nut. This is prepared in Ceylon from a liquor called "toddy," procured, by inciſion, from the top of the tree where the leaves ſhoot up; a ſlit is made in this part of the tree with a knife over night, and a "chatty," or earthen pot, ſuſpended from the branches ſo as to receive the juice, which immediately begins to diſtil, and continues to do ſo till next morning, when the pot is removed. This liquor, when drank before the heat of the riſing ſun has cauſed it to ferment, is very wholeſome and cooling, and operates as a gentle purgative. But upon being fermented it becomes intoxicating; and in this ſtate is well known to the European ſoldiers, who uſe it in large quantities when they cannot procure the arrack diſtilled from it. Arrack in Ceylon is wholly made from toddy, and whole woods of the cocoa-tree are employed for the purpoſe of procuring it. A barm or yeaſt ariſes from this proceſs, equal to that which is procured from our malt liquor employed in the preparation of whiſky. The toddy is likewiſe made into vinegar, and yields a ſpecies of coarſe black ſugar known by the above name.

JAGRA, or *Giarra*, in *Geography*, a country of Africa, producing plenty of rice, cotton, and corn, a little S. of the river Gambia; about 50 miles from the ſea.

JAGRAH, a town of Hindooſtan, in the circar of Nagore; 15 miles N. of Nagore.

JAGRENATPOUR, a town of Bengal; 10 miles N.W. of Purneah.—Alſo, a town of Bengal; 20 miles W. of Iſlamabad.—Alſo, a town of Hindooſtan, in Bahar; 65 miles S.S E. of Hajypour.

JAGUA, a town of the iſland of Cuba; 85 miles W.S.W. of Havannah.

JAGUACAH-GUACU, in *Ornithology*, the name of a Braſilian bird of the king-fiſher kind, called by the Portugueſe *papa peéxe*. See ALCEDO *Alcyon*.

JAGUARA, in *Zoology*. See FELIS *Onca*.

JAGUARACA, in *Ichthyology*, the name of a Braſilian fiſh, in many things reſembling the ſcorpius of the Mediterranean. It is of the ſize of the freſh-water perch, and its mouth is very large, but without teeth. It is caught among the rocks, and is a very well taſted fiſh. Margrave.

JAGUARETE, in *Zoology*. See FELIS *Diſcolor*.

JAGUILMA, in *Ornithology*, a ſpecies of *Pſittacus*; which ſee.

JAIL. See GAOL.

JAIL-*Fever*, in *Medicine*. See FEVER and TYPHUS.

JAHANABAD, in *Geography*, a town of Bengal; 20 miles S. of Burdwan. N. lat. 22° 55′. E. long. 87° 55′.

JAHANAGUR, a town of Bengal; 10 miles W. of Kiſhenagur.

JAHEDHIANS, a ſect of Mahometans, the followers of Amru Ebn Bahr, ſurnamed Al Jahedh, a great doctor of the Mótazalites, and much admired for the elegance of his compoſitions, who differed from his brethren in imagining that the damned would not be eternally tormented in hell, but would be changed into the nature of fire, and that the fire would of itſelf attract them, without any neceſſity of their going into it. He alſo taught that if man believed God to be his Lord, and Mohammed the apoſtle of God, he became one of the faithful, and was obliged to nothing further. Of the Koran, he uſed to ſay it was a body, which might ſometimes be turned into a man, and ſometimes into a beaſt; ſeeming to agree with the notion of thoſe who aſſert the Koran to have two faces, one of a man, the other of a beaſt; thus probably intimating the double interpretation which it will admit of, according to the letter, or the ſpirit.

JAHI, in *Geography*, a town of Aſiatic Turkey, in Natolia; 16 miles N.N.E. of Angura.

JAHNU, in *Hindoo Mythology*, is called the father of the Ganges, from an extravagant ſtory of an auſtere ſage, named Jahnu, having been diſturbed at his devotions by the intruſion of the river. In anger he ſwallowed the whole ſtream, but, relenting, poured it forth again from an inciſion in his thigh, or, according to others, from his ear. Ridiculous as this wild ſtory may ſeem, it has probably ſome hiſtorical alluſion, for it is generally admitted that both the hiſtory and ſcience of the Hindoos are veiled in mythological fables, taken literally by the people, the Brahmans only poſſeſſing a knowledge of their real import. This fable of Jahnu is frequently alluded to in Hindoo writings, and affords conſiderable ſcope for poetical exuberance. Moor's Hindoo Pantheon.

JAHNUVI, a name of the river Ganges, or Ganga, as it would be more properly written. The river obtained this appellation, which means the offspring of *Jahnu*, from the circumſtance above mentioned.

JAHUPICE, in *Geography*, a town of Poland, in the palatinate of Braclaw; 48 miles S.E. of Braclaw.

JAICZA, a town, with a caſtle, of European Turkey, in Boſnia, near the river Pliva; 26 miles S. of Banjaluka.

JAICZI, a town of Great Bucharia, on the Jihon; 36 miles S. of Bokhara.

JAIMINI, in *Philoſophy*, the founder of a ſchool in India, profeſſing tenets ſimilar in many parts to thoſe taught by Socrates. Jaimini inculcated the unity of the deity, rejecting the ſtories, ſo generally received by many ſects of Hindoos, of the incarnations of deities. He maintains that the great powers and attributes of the deity Brahma, Viſhnu, and Siva (perſonifications, of creation, preſervation, and deſtruction), were men, who, through righteouſneſs, attained a high degree of perfection, and were endowed by the deity with qualities approaching to his own attributes. His followers call this doctrine Purva Mimanſa, diſtinguiſhing it from another branch of Jaimini's philoſophy called Vedanta, between which diſcrimination is not eaſy. (See VEDANTA.) Mimanſa is the general name for the philoſophy of Jaimini, which is upheld by many learned Hindoos. It teaches the eternity of the elements, and of the univerſe; that bodies are only a compound of atoms, and not produced from one ſubſtance; that man is a free agent; that rewards and puniſhments hereafter differ in degrees, according to virtue or ſin. The tranſmigration of the ſoul is alſo a tenet in the Mimanſa philoſophy. See MIMANSA.

JAINA, the founder of a ſect, whoſe tenets have ſpread very extenſively over India. By ſome authors the ſect of Jaina, or Jina, as it is ſometimes written, is ſuppoſed to be a ſubdiviſion of that of Budha, or Boodha (ſee BOODHA), while others contend for its originality and antiquity over moſt other of the ſects into which the Hindoos are theologically ſubdivided. Between the Jainas and the Brahmans, a degree of malignity appears to have exiſted formerly, greater than is now any way diſcernible. Abu'l Fazel, in the Ayin Acbaree, a work written about the year 1600, A.D. has the following paſſage: "From the moſt ancient times down to the preſent, the learning and wiſdom of Hindooſtan have been confined to the Brahmans and the followers of Jaina; but ignorant of each other's merits they have a mutual averſion. Kriſhna, whom the Brahmans" (of his own ſect, he ſhould have added, for it is not true of them univerſally) "worſhip as God, the Jainas conſider as an infernal ſlave; and the Brahmans carry their averſion ſo far as to ſay, that it is better to encounter a mad elephant than to meet a man of this perſuaſion." This mutual malignity led to the horrible exceſſes of religious perſecution, inflamed by the jealouſy of rivalſhip, and the baſer feelings of hatred and revenge.

In theſe conflicts the Jainas are related to have ſuffered moſt diſaſtrouſly from the ſuperior proweſs and addreſs of the Brahmans and their adherents, who deſtroyed the temples, books, &c. of their ill-fated opponents, expelling the remains of the ſect to the confines of India. Such, however, is the tenacity of hereſy, cemented, as it were, by perſecution, that the followers of Jaina are now found to have re-eſtabliſhed themſelves in the more central parts of the peninſula of India, where the mildneſs of their manners and tenets appears to gain them proſelytes and reſpect. It is, however, on the weſtern coaſts of the hither peninſula that this intereſting people have of late been moſt noticed by travellers. In the provinces of Kanara and Myore, particularly in the former, Jainas in conſiderable numbers now freely practiſe the ceremonies of their religion, and unmoleſted indulge in their whimſical, and extravagantly inoffenſive propenſities. Their leading tenet is "the ſin of depriving any animal of life," and in obedience to this humane precept, they not only abſtain wholly from animal food, but ſome among the ſtricter individuals will not drink water until it hath been boiled; it being deemed leſs criminal ſo to kill the animalculæ than to deſtroy them in their ſtomachs. Others carry a broom to ſweep the ground on which they tread or ſit, leſt they inadvertently cruſh an inſect. The Jainas are the ſect who endow the hoſpitals for animals and reptiles, that have attracted the attention of ſeveral travellers. Theſe hoſpitals are called Pinjri-pala, meaning an encloſure of protection, and afford it to almoſt every deſcription of animal, monkies more eſpecially; weevils and other diminutive reptiles are nurſed in theſe receptacles of ill-directed charity. The Jainas are deiſts in doctrine; they worſhip one ſupreme being under the denomination of Arhang Paramatma, which in the Sanſcrit language means the ſupreme ſoul; they reject the polytheiſm and incarnations of the orthodox Hindoos, but they honour, almoſt to deification, twenty-four holy perſons whom they call Aryhuntas, of whom images are made and placed in their temples. Of theſe Aryhuntas, or Tirthunkaras, as they are otherwiſe denominated, Riſhaba Deva is the firſt in point of time and veneration. To him are aſcribed the exiſting books of their laws, religion, and morals: of theſe ſacred perſons and books liſts are given, with many curious particulars reſpecting the Jainas of Guzerat, in Moor's Hindoo Infanticide. All the Aryhuntas have the common denomination of Deva, meaning divine, or God-like, appended to their names. Among the Jainas the diviſion into tribes or *caſtes* is not obſervable as among other Hindoos; Yati and Sravaka being their only diſtinctions. The former are a ſort of prieſt, or rather ſpiritual preceptor, who read and expound to the Sravakas or laity, the Saſtras or ſcriptures of the Jaina faith. The Yatis are devoted to religion from their infancy, and are admitted to this diſtinction after a due courſe of ſtudy and piety. They profeſs celibacy and abſtinence, reciting a verſe ſaid to comprize their duties: "that perſon who keeps his five ſenſes under ſubjection is a Yati:" this denotes the Yati with the Jainas to be equivalent to a Saniaſſy among the orthodox Hindoos. (See SANIASSY.) The Yati lives by charity; he may not dreſs his food himſelf, nor eat while the ſun is below the horizon; roots of all ſorts, honey and butter unclarified, are prohibited; all kinds of grain, vegetables, and fruit, produced above ground, with milk and ghee, or butter clarified, are lawful food. The Yati is ſuppoſed to have renounced the world and all ſenſual gratifications; he affects a contemplative indifference, performing no offices of mourning or rejoicing. The Yati performs no religious rites; he is merely an aſcetic and ſpiritual guide. The Sravakas reſort to ſome ſects of orthodox Brahmans for the performance of marriage, funeral, and other ceremonies. See SRAVAKA and YATI.

The Jainas, like the other Baudhas, or adherents of Budha, are addicted to gigantic ſculpture. In the province of Kanara is a coloſſal figure of Jaina-deva, of a magnitude unequalled perhaps by any now in exiſtence. Of this ſtatue major Moor has given a deſcription and a plate in his Hindoo Pantheon. It is upwards of ſeventy feet in height, and being ſituated on an eminence, called Indra-giri, or the hill of Indra, is ſeen in all directions from a diſtance of twelve or fifteen miles. Major Moor's print is taken from a ſketch in the collection of lord Wellington, who has viſited the ſtatue, and judged that the hill on which it now ſeems to ſtand, was once conſiderably higher, and that it has been cut away, leaving only the figure; a mode of ſculpture ſimilar, although under different circumſtances, to the ſubterranean excavations of Elephanta, Kenereh, and other temples. It is, major Moor obſerves, difficult to conceive how in any other mode ſuch a maſs of ſtone could have been ſo ſituated, its magnitude precluding the ſuppoſition of conveyance and erection. Other coloſſal figures of the Jainas of Kanara are deſcribed and repreſented in the Hindoo Pantheon; alſo a very beautiful obeliſk, 52 feet in height, the ſhaft of one ſtone, in front of one of their temples, indicating a degree of taſte and refinement in architectural ſcience, that could ſcarcely be expected under the political and theological diſcouragements to which the perſecuted Jainas are believed to have been ſubjected. One ſingularity is ſtrikingly obſervable in all the images, coloſſal or diminutive, of the Baudhas and Jainas; they have woolly frizzled heads, and many of them thick lips; ſuch as might be expected in Africa, but altogether diſſimilar to the features and lank hair of the Hindoos. See on the ſubject of this article Aſiatic Reſearches, vol. ix. Moor's Hindoo Pantheon. Moor's Hindoo Infanticide.

JAINAD, in *Geography*, a town of Hindooſtan, in the circar of Mahur; 38 miles N. of Neermul.

JAIRE, ST. a town of France, in the department of the Leman; 15 miles S.E. of Geneva.

JAK *in Jakko*, a town of Africa, on the Ivory coaſt.

JAKA, a kingdom of Africa, 500 miles from the ſea, with a capital of the ſame name, on the S. ſide of the Senegal.—Alſo, a town and diſtrict of Africa, on the Ivory coaſt.

JAKAI, a town of Circaſſia; 45 miles W. of Eſkikeſek

JAKIN, a town of Africa, in the kingdom of Ardra, on the Slave coaſt, where the Engliſh and Dutch had factories, till they were driven away by the king of Dahomy.—Alſo, a river which ſeparates the country of Ardra from Benin, and runs into the ſea at Grand Popo.

JAKIRA, a town of Africa, on the Slave coaſt; 10 miles S. of Aſſom.

JAKOBSHAVN, a Daniſh ſettlement in Greenland.

JAKOWIZINA, a town of Ruſſian Poland, in the palatinate of Braclaw; 36 miles W.N.W. of Braclaw.

JAL, a town of Perſia, in the province of Mecran; 210 miles N. of Kidge.

JALA, a ſmall iſland in the Atlantic, near the coaſt of Africa. N. lat. 11° 45′.

JALAC, a town of Nubia, at the conflux of the Tacazé and Nile; 240 miles S. of Sennaar. N. lat. 17° 50′. E. long. 34° 10′.

JALALABAD, a town of Candahar, in the country of Cabul, on the river Kameh; 60 miles E.S.E. of Cabul. N. lat. 34° 6′. E. long. 69° 45′.—Alſo, a town of Hindooſtan, in the circar of Schaurunpour; 26 miles from Schaurunpour.

JALALGUNGE, a town of Bengal, and principal place of the province of Bajoohow; 25 miles N.N.E. of Goragot. N. lat. 25° 28′. E. long. 82° 30′.

JALALPORUM, a town of Hindooſtan, in the circar of Schaurunpour; 20 miles N.N.W. of Merat.

JALAMLAM, a town of Arabia; 35 miles S. of Mecca.

JALANGHI-LIMAN, a town of Aſiatic Turkey, in Natolia; 12 miles S. of Smyrna.

JALAP, in the *Materia Medica*, ſo called from the name of the country, *viz.* Chalapa, or Xalapa, a province in New Spain, between La Vera Cruz and Mexico, whence it is brought, the root of a ſpecies of the convolvulus, or the convolvulus with variable leaves, foot-ſtalks with ſingle flowers, and a tuberous root. Botaniſts have differed much with reſpect to the officinal jalap plant; Linnæus, following Cluſius, Plumier, Tournefort, and others, firſt referred it to the Mirabilis; but in the ſecond edition of his Materia Medica, he adopts the opinions of Ray and Miller, in conſidering it a convolvulus; and, indeed, after the account given of this plant by Dr. Houſton, no reaſonable doubt can remain on this ſubject.

The mechoacan and this are reckoned of a ſpecies; and therefore as this is ſometimes called *mechoacana nigra*, that goes as often by the name of *jalapium album*.

As jalap does not appear to have been known to the ancients, it has its place in medicine only ſince thoſe parts of America, which produce it, have been traded to by the Europeans. It is ſaid to have been firſt brought to Europe about the year 1610.

The jalap roots are brought over in thin tranſverſe ſlices, and alſo whole, of an oval ſhape, ſolid, hard, and heavy; of a blackiſh colour on the outſide or cortical part, and internally of a dark greyiſh, with ſeveral black circular ſtriæ; the hardeſt, darkeſt coloured, and thoſe which have the moſt of theſe reſinous veins, are the beſt. This root has ſcarcely any ſmell or taſte; but to the tongue and the throat it manifeſts a ſlight degree of pungency.

The medicinal activity of jalap reſides principally, if not wholly, in the reſin, which, though given in ſmall doſes, occaſions violent tormina. The gummy part bears an inconſiderable proportion to the reſinous, and is found to have little or no cathartic power, but as a diuretic it is extremely active.

In doſes of a ſcruple, or half a dram, it is an effectual and ſafe purgative, very rarely occaſioning any ſevere gripes or nauſea. Jalap is an excellent purgative in dropſical and other caſes, in which ſerous humours are to be evacuated. Jalap, in large doſes, or when joined with calomel, is recommended as an anthelmintic and a hydragogue; and from its general efficacy in dropſies was called "Panacea Hydropicorum." Hoffman thought it particularly improper and unſafe to adminiſter this medicine to children; but Dr. Cullen obſerves, that if jalap be well triturated before exhibition with a hard powder, and the cryſtals of tartar are the fitteſt for the purpoſe, it will operate in leſſer doſes than when taken by itſelf, and at the ſame time very moderately, and without griping. Except, he ſays, when given in very large doſes, I have not found it to be heating to the ſyſtem; and if it be triturated with a hard ſugar, it becomes, in moderate doſes, a ſafe medicine for children, which in this form they will readily receive, as the jalap itſelf has very little taſte. But it ſhould not be adminiſtered, ſays Geoffroy, in acute fevers, nor to perſons of dry and hot conſtitutions; for in ſuch caſes, it is liable to the ſame miſchiefs as other acrid purgatives, and will ſometimes bring on heat and inflammations in the viſcera.

The preparations of jalap in uſe with us are a tincture, an extract, and a reſin. The tincture is made by macerating eight ounces of jalap root powdered in two pints of proof ſpirit for 14 days, and ſtraining. The extract is prepared by firſt drawing a tincture from the powdered root with rectified ſpirit, in the proportion of a pound of the root and four pints of the ſpirit, macerating the root in the ſpirit for four days, and pouring off the tincture; then boiling the reſiduum in ten pints of water, until it be reduced to two pints; then ſtrain the tincture and decoction ſeparately, and let the former be diſtilled, and the latter evaporated until each begins to grow thick. Laſtly, mix the extract with the reſin, and reduce it to a proper conſiſtence. Let the extract be kept in a *ſoft* ſtate fit for forming pills, and in a *hard* ſtate ſo that it may be reduced to powder. This extract may be taken by itſelf in doſes of twelve grains, or more. Jalap root, digeſted in as much rectified ſpirit as will cover it to the height of about four fingers, gives out the greateſt part of the reſinous matter in which its activity reſides, and tinges the menſtruum of a yellowiſh brown colour. On inſpiſſating the filtered tincture to about one-half, and adding to the remainder a proper quantity of water, the liquor becomes milky, and on ſtanding depoſits the pure reſin. This preparation, by itſelf, irritates and gripes much, without proving conſiderably purgative; but thoroughly triturated with teſtaceous or other powders, or with ſoap, or ground with almonds, or powdered gum arabic, and made into an emulſion with water, or diſſolved in rectified ſpirit, and mixed with a proper quantity of ſyrup, that the ſolution may bear being diluted with watery liquors without precipitation, it purges, in doſes of eight or ten grains, as effectually, and, for the moſt part, as mildly as the jalap in ſubſtance. Lewis's Mat. Med.

The Edinburgh college directs the exhibition of jalap in powder, with twice its weight of cryſtals of tartar. The doſe of the ſimple powder is commonly from one ſcruple to two; of the compound powder it may be double this quantity, which is nearly equal to 10 or 15 grains of the extract, or about two drams of the tincture. Woodv. Med. Bot.

After all the preparations the chemiſts have invented for this root, the beſt way of giving it is in ſubſtance. Mr. Bolduc, in his analyſis of it, found, that when he ſeparated its ſaline and its reſinous parts, by making extracts of it, firſt with ſpirits of wine, and then with water, that the ſaline or watery extract was much larger in quantity than the other, but that it purged weakly; and that the reſinous extract, though it operated in a ſmall doſe, was yet a very rough medicine; ſo that the beſt way of uſing them was together, and that nature gave us the medicine ready prepared. Mem. Acad. Par. 1701.

However, others have obſerved, that the extracts of jalap appear preferable to the root in ſubſtance, not only on account of the doſe being rendered ſmaller by the rejection of the woody parts, but likewiſe as being more uniform and certain in ſtrength. Lewis.

Many fraudulent chemiſts, when jalap is dear, have a trick of putting ſcammony, which is of itſelf almoſt all reſin, among it, and ſometimes gamboge; by which means they can afford to ſell it cheaper than the price it can be honeſtly made for. But their moſt curious cheat is in mixing it with the common black reſin; two parts of the latter to one of the former. But this may be known by putting it into rectified ſpirit, which will again diſſolve the reſin of jalap, but not touch the other. The virtues are the ſame with thoſe of the root, but it works rougher, becauſe all ſubſtances ſtick to the coats of the inteſtines, ſo as to occaſion much pain and uneaſineſs; for which reaſon this is corrected with ſugar, cream of tartar, or the like; by which means it is brought into the ſame ſtate as nature preſents it in the root. For ſome purpoſes, indeed, where the form is required to be ſmall, as often in adminiſtration to children, this is moſt convenient. Its doſe is from three grains to one ſcruple.

Jalap poſſeſſes a fermenting power in a conſiderable degree, and is ſaid to be uſed with this intention by brewers and diſtillers.

JALAPA, in *Botany*. See CONVOLVULUS and MIRABILIS.

JALASJARVI, in *Geography*, a town of Sweden, in the government of Waſa; 40 miles E.N.E. of Chriſtineſtadt.

JALEA, a town of Aſiatic Turkey, in Natolia; 12 miles S.W. of Adramitti.

JALEH, a kind of raft of a particular conſtruction, uſed in navigating ſome of the rivers in India, particularly the Cabul or Kameh, on which ſome of the emperors have made voyages down this river from the neighbourhood of Jalalabad, 60 or 70 miles below Cabul, to Paiſhawur. As no embarkations of the hollow kind are in uſe, it ſeems to prove that the navigation is interrupted by rapids; for there can be no doubt but that the body of water in the Kameh is ſufficient to carry boats.

JALEMGORY, in *Geography*, a town of Hindooſtan, in the circar of Sollapour; 18 miles E. of Sollapour.

JALEMUS, Ιαλεμος, or JALEMIA, in *Antiquity*, a kind of mournful ſong uſed upon occaſion of death, or any other affecting accident; ſuch as the Linos was among the Greeks, and the Maneros among the Egyptians. (See SONG.) Hence the Greek proverbs had their original, ιαλεμȣ οικτροτερος, or ψυχροτερος, *i. e. more ſad or colder than a jalemus*, εις τȣς ιαλεμȣς εγγραπτεος, *worthy to be ranked among jalemuſes*. Mem. Acad. Inſcript. tom. xiii. p. 554.

JALI, in *Geography*, an iſland in the Grecian Archipelago, about five miles in circuit; four miles S.E. of Stanchio.—Alſo, a town in the iſland of Borneo; 70 miles N. of Negara.

JALIGNY, a town of France, in the department of the Allier, and diſtrict of La Paliſſe; 15 miles S.E of Moulins. The place contains 482, and the canton 8114 inhabitants, on a territory of 280 kiliometres, in 12 communes.

JALLA, a town of Hindooſtan, in Bahar; 18 miles N.N.W. of Durbungah.

JALLACOTTA, a town of Africa, in the country of Tenda; 10 miles W. of Tenda. N. lat. 13°. W. long. 12° 9'.

JALLAIS, a town of France, in the department of the Mayne and Loire; 7 miles N. of Chollet.

JALLAS, a river of Spain, which runs into the Atlantic, N. lat. 42° 59'. W. long. 9° 12'.

JALLINDAR, a circar of Hindooſtan, in the country of Lahore, of conſiderable extent, between the rivers Setledge and Beyah.—Alſo, the capital of this diſtrict; 30 miles E. of Lahore. N. lat. 31° 16'. E. long. 75° 25'.

JALLOFFS, or YALLOFFS, a people inhabiting an extenſive interior territory of Africa, between the rivers Gambia to the ſouth, and the Senegal to the north and eaſt; or between about 14° and 16° N. lat. and 13° and 15° W. long. Of theſe people little certain is known; but they are repreſented as of an exceeding black, and more beautiful complexion and more regular features than the inhabitants of the neighbouring countries.

JALLONKADOO, an extenſive country of Africa, lying between Guinea on the S.W. and Manding on the N.E. and containing either the ſprings or firſt courſes of the rivers Niger and Senegal, and alſo of ſeveral other ſtreams which form the Boki, Furkoomah, Wonda, Kokoro, &c. It is between the parallels of 11° and 12° N. lat. and 6° and 9° E. long.

JALLYNE, a town of Bengal; 20 miles W. of Nagore.

JALOAN, a town of Hindooſtan, in the circar of Gohud; 10 miles N.N.E. of Kooch.

JALOAR, a town of the Carnatic; ſeven miles N. of Ootatore.

JALONITZA, a town of European Turkey, in Walachia, on a river of the ſame name; 95 miles S.W. of Iſmail.

JALOUR, a large town of Hindooſtan, ſituated on a mountain difficult of acceſs, in the country of Agimere, and circar of Sirowy; 63 miles W.N.W. of Oudipour. N. lat. 25° 15'. E. long. 73° 40'.

JALOWKA, a town of Lithuania, in the palatinate of Troki; 24 miles S. of Grodno.

JALPUG, a lake of European Turkey, in Beſſarabia, 30 miles long, and from three to five broad, communicating with the Danube, and receiving water from a river called by the ſame name at Tabak; 15 miles W. of Iſmail.

JALYSUS, or JALISSUM, in *Ancient Geography*, a town ſituated on the N.W. coaſt of the iſland of Rhodes; founded, according to Herodotus, by the Danaides, and fortified on occaſion of the Peloponneſian war.

JAM, a town of Greater Bucharia; 10 miles S. of Samarcand.

JAM, or *Jamb*, in the language of our lead-miners in Mendip, a thick bed of ſtone, which hinders their work when they are purſuing the veins of ore.

JAMA, in *Geography*, a river of Peru, which runs into the Pacific ocean, S. lat. 9° 10'.

JAMACAII, in *Ornithology*. See ORIOLUS *Jamacaii*.

JAMADA, in *Geography*, a town of Japan, in the iſland of Xicoco; 20 miles W. of Ovutli.

JAMADAGNI, in *Hindoo Mythology*, is the father of Paraſu Rama, by his wife Runeka. (See RUNEKA.) He was a pious Brahman, who, in his retirement, was entruſted by Indra with the charge of Surabhi, the wonderful cow, which granted every deſire, hence named alſo Kam-denu. (See SURABHI.) On a particular occaſion he entertained the raja Diruj in ſo magnificent a ſtile as to excite his aſtoniſhment, until he learned the ſecret of the ineſtimable animal poſſeſſed by his hoſt. Impelled by covetouſneſs, or rather heart-hardened by the gods, who willed the raja's puniſhment ſhould appear to be the immediate reſult of that baſe paſſion, the raja demanded the cow from the holy Brahman; and on refuſal reſorted to ſtratagem and force, which ended in the death of Jamadagni, but not in ſucceſs with reſpect to the cow, which diſappeared. Jamadagni is ſtated to be deſcended from Bhrigu the ſon of Brahma, and is one of the ſeven Riſhis, the immediate offspring of the creative power. Moor's Hindoo Pantheon. See RISHIS and MENUS.

JAMADSUKURI, in *Geography*, a town of Japan, in the iſland of Niphon; 50 miles S.W. of Nambu.

JAMAGA, a town of Japan, in the iſland of Ximo; 22 miles E. of Udo.

JAMAICA, an iſland of the Weſt Indies, diſcovered by Chriſtopher Columbus in his ſecond expedition to the New World, May 3, A. D. 1494, retaining its original name. The early Spaniſh hiſtorians for Jamaica wrote Xaymaca, which in the language of the nation is ſaid to have ſignified "a country abounding in ſprings." Columbus having at firſt named the iſland "St. Jago," Oldmixon, and ſome other writers, erroneouſly ſuppoſe that Jamaica was the augmentative of James. It was not, however, till about nine years after its firſt diſcovery that he had an opportunity of acquainting himſelf further with the iſland; in conſequence of a ſtorm which compelled him, on the 24th of June 1503, on his return to Hiſpaniola from Veragua, to ſeek refuge in a ſmall harbour on the N. ſide, called to this day "Don Chriſtopher's Cove." About ſeventeen years elapſed after the Spaniards had firſt fixed themſelves in Hiſpaniola before they ſeem to have entertained any ſerious deſign of ſending forth a colony to take poſſeſſion of Jamaica; and the neglect of it was probably owing to its producing neither gold nor ſilver. At length, however, Diego, the ſon of the much injured Columbus, and the heir of his fortunes, inſtituted a memorable proceſs againſt his ſovereign before the council of the Indies at Seville, and obtained from this court a deciſion in favour of his pretenſions. The council pronounced him hereditary viceroy and high admiral of all the countries and iſlands diſcovered by his father. Diego, thus ſanctioned in his proceedings by the high authority of this court, embarked, with a ſplendid retinue, for his government of Hiſpaniola, to which the king had reluctantly appointed him; determined at the ſame time to enforce his pretenſions. In July 1508 he arrived at Hiſpaniola, where he found two perſons actually inveſted by the king with two ſeparate governments, that comprehended the whole continent diſcovered by Chriſtopher Columbus, including alſo the iſland of Jamaica. Diego, thus deprived of his rights, ſtrenuouſly contended for the excluſive privilege of nominating, in particular to the governments of Veragua and Jamaica, the prior diſcovery of both theſe countries being a circumſtance of univerſal notoriety. For ſecuring his claim to Jamaica he ſent thither, in November 1509, Juan de Eſquivel with about 70 men. Under this gallant and equally humane commander, the natives were induced to ſubmit without effuſion of blood, and proſecuted their labours in planting cotton, and raiſing other commodities which yielded great profit. After a few years he died, and was ſucceeded by governors of a very different character, who contributed to deſtroy the inhabitants and to deſolate the iſland. Sixty thouſand of the wretched natives, on the moſt moderate eſtimate, were exterminated by the Spaniards; ſo that not a ſingle deſcendant of either ſex appeared to be alive when the Engliſh took the iſland in 1655, nor perhaps for a century before that period. It is ſaid, indeed, that a ſmall remnant of the ancient Indians exiſts on the S. ſide of the iſland of Cuba, in a little town called St. Jago de Cuba, or Iwanee, and that theſe have adopted the manners and language of the Spaniards. Diego Columbus, who died in his native country in 1525 or 1526, left iſſue three ſons and two daughters; his eldeſt ſon Don Lewis ſucceeded to his father's honours and extenſive claims; and in 1545, upon a compromiſe of a conteſt with the emperor, obtained a grant of the province of Veragua and the iſland of Jamaica. As he and his brothers died without iſſue, his ſiſter Iſabella, who was married to the Count de Gelvez, a Portugueſe nobleman of the houſe of Braganza, became ſole heireſs of the Columbus family, and by her marriage conveyed all her rights to the houſe of Braganza, in whoſe poſſeſſion they remained till the year 1640, when they reverted by forfeiture to the crown of Spain, in conſequence of the revolution, which placed John, duke of Braganza, on the throne of Portugal. From circumſtances recited in minute detail by Mr. Boyan Edwards, it appears that during the protectorate of Cromwell, the Spaniards had been guilty of ſeveral aggreſſions in the Weſt Indies, and that the protector, in ſeeking redreſs, manifeſted a regard to juſtice by his moderation and temper. An appeal was at length made to force; and a powerful armament was equipped, which miſcarried at Hiſpaniola, but ſucceeded at Jamaica, which was captured by the Engliſh forces in May 1655. At this time the whole number of white inhabitants on the iſland, including women and children, did not exceed 1500: and not one hundredth part of the plantable land was in a ſtate of cultivation. The number of negroes, who had been firſt introduced from Africa by the Spaniſh ſettlers after they had exterminated the original proprietors, nearly equalled that of the whites, at the time of its capture. The principal exports of the Spaniſh planters, notorious for their ſloth and penury, conſiſted, beſides cacao, of hog's lard and hides, which ſupplied the few ſhips that touched at their ports with proviſions, in barter for European manufactures; and this conſtituted the whole of their commerce. After the capture of the iſland, until the reſtoration of Charles II., the Engliſh in Jamaica remained under military juriſdiction, although it appears to have been the intention of Cromwell to have eſtabliſhed a civil government in the iſland on very liberal principles. After the reſtoration of Charles II., the Bucaniers, who reſorted to this iſland, and who contributed by their wealth and induſtry to its ſettlement and opulence, received from the king every kind of encouragement and protection; and people of all profeſſions, and from all parts of the Britiſh empire, now reſorted to Jamaica. In 1661 the king appointed D'Oyley chief governor of the iſland; and he was ordered to releaſe the army from military ſubordination, to erect courts of judicature, and, with the advice of a council, to be elected by the inhabitants, to paſs laws ſuitable to the exigencies of the colony. Theſe events may be conſidered as the firſt eſtabliſhment of a regular civil government in Jamaica after the Engliſh had become maſters of it. Soon after D'Oyley deſired to be recalled, and lord Windſor was appointed in his room with inſtructions to publiſh, on his arrival, a royal proclamation, in which, for the ſettlement of the country, allotments of land were offered under ſuch terms as were uſual in other plantations, with ſuch further privileges and immunities as the grantees ſhould reaſonably require. The proclamation contained other declarations, which have been always conſidered, by the inhabitants of Jamaica, as a ſolemn recognition and confirmation by the crown of thoſe rights which are unalienable from a ſubject of England, and of which, ſo long as he maintains his allegiance, emigration for the benefit of the ſtate cannot, and ought not to divert him. Theſe rights and privileges were further ſecured by the American treaty, concluded and ſigned at Madrid in the month of June 1670. Such, however, were the want of integrity and ſteadineſs, characteriſtic in too great a degree of Charles II., that in the beginning of 1678, Jamaica was involved in the troubles of this reign. A new ſyſtem of legiſlation was adopted for this iſland ſimilar to that of the Iriſh conſtitution under Poyning's act; and the earl of Carliſle was appointed chief governor for the purpoſe of enforcing it. A body of laws was prepared by the privy council of England; and a bill was offered to the aſſembly for ſettling a perpetual revenue on the crown. In future the heads of all bills (money bills excepted) were to be ſuggeſted in the firſt inſtance by the governor and council, and tranſmitted to his majeſty to be approved or rejected at home; they were then to be returned under the great ſeal in the form of laws, and paſſed by the general aſſembly, which was to be convened for no other purpoſe than that and the buſineſs of voting the uſual ſupplies; unleſs in conſequence of ſpecial orders from England. The aſſembly rejected the new conſtitution with indignation. No threats would frighten, no bribes could corrupt, nor arts nor arguments perſuade them to conſent to laws that would enſlave their poſterity. In conſequence of this oppoſition, the aſſembly had their deliberative powers reſtored to them, and ſir Thomas Lynch was appointed captain-general and chief governor in the room of lord Carliſle. The Engliſh government claimed a return from the people of Jamaica for having relinquiſhed an oppreſſive and pernicious project; but the aſſembly, averſe from ſubjecting their country to a permanent and irrevocable tax, determined to paſs their ſupply bills from year to year, according to their uſual cuſtom. The miniſtry, influenced by a kind of vindictive policy, adviſed the ſovereign to wave the confirmation of the laws, and to ſuffer the adminiſtration of juſtice in the iſland to remain on a very precarious foundation. In 1728 a compromiſe was happily effected. The aſſembly conſented to ſettle on the crown a ſtanding irrevocable revenue of 8000*l.* per annum on certain conditions, to which the crown agreed. The principal of theſe conditions are as follow: *viz.* that the quit-rents ariſing within the iſland, then eſtimated at 1460*l.* per annum, ſhould conſtitute a part of ſuch revenue; that the body of their laws ſhould receive the royal aſſent; and that all ſuch laws and ſtatutes of England, as had been at any time eſteemed, introduced, uſed, accepted, or received, as laws in the iſland, ſhould be and continue laws of Jamaica for ever.

Jamaica is ſituated in the Atlantic ocean, about 4000 miles S.W. of England; having Hiſpaniola, at the diſtance of 30 leagues, to the E.; the iſland of Cuba, about the ſame diſtance, N.; the gulf of Honduras, W.; and Carthagena, on the great continent of South America, S. at the diſtance of 145 leagues. The centre of Jamaica lies in about 18° 12′ N. lat., and about 76° 45′ W. long. The climate, though much mitigated by various cauſes, is extremely hot, with little variation from January to December; the days and nights are nearly equal, the longeſt and ſhorteſt day differing no more than about two hours with little twilight; and it is twelve at noon in London, when it is about ſeven in the morning in Jamaica. The north and ſouth ſides of the iſland, which are ſeparated by a vaſt chain of mountains, extending from E. to W., differ greatly from each other. Columbus, when he firſt diſcovered Jamaica, on the northern ſide, and perceived that part which now conſtitutes the pariſh of St. Anne, was ſtruck with admiration at the novelty, variety, and beauty of the proſpect. At a ſmall diſtance from the ſhore, the country riſes into hills with gentle acclivity, which are ſeparated from each other by ſpacious vales and romantic inequalities; and is beautifully covered with groves of pimentos, forming by their deeper tints a charming contraſt to the verdure of the ſubjacent turf. The ſoil is in general a chalky marle, which produces a cloſe turf, as ſmooth and even as the fineſt Engliſh lawn, and in colour much brighter. No part of the Weſt Indies abounds with ſo many delicious ſtreams; every valley having its rivulet, and every hill its caſcade. On the ſouthern ſide of the iſland the ſcenery is of a different nature; its predominant feature being grandeur and ſublimity, whilſt the other ſide preſents variety and beauty. Amidſt precipices and inacceſſible cliffs, however, there are vaſt plains, clothed chiefly with extenſive cane-fields. To the inequalities of ſurface that diſtinguiſh this iſland, it is owing that, although the ſoil in many parts of the iſland is deep and very fertile, yet the productive land is but of ſmall extent, in proportion to the whole. That which is actually cultivated is of a middling quality, and requires labour and manure to make it yield liberally.

Jamaica is 150 miles in length, and at a medium about forty miles in breadth. Calculating from theſe data, the iſland, if it were a level country, would contain 3,840,000 acres; but allowing for that great part of it which conſiſts of high mountains, and ſuppoſing, at a moderate eſtimate, the increaſe on that account to be $\frac{1}{10}$th more, or 240,000 acres, the total is 4,080,000 acres. Of theſe no more than 1,907,589 were, in November 1789, located, or taken up, by grants from the crown; and conſequently, upwards of one-half of the lands is conſidered as of no kind of value, the expence of taking out a patent being of no great account; and of the located lands, Mr. Edwards ſuppoſes that little more than one million is at preſent in cultivation. In ſugar plantations, including the land reſerved in woods, for the purpoſe of ſupplying ſtaves, timber, and fire-wood, or appropriated for common paſturage, all which is commonly two-thirds of each plantation, the number of acres may be ſtated at 639,000. Of breeding farms, called "pens," the number is about 400, and allowing to each 700 acres, the whole amount is 280,000; and the ſpace allowed to the minor productions, as cotton, coffee, pimento and ginger, &c. including even the proviſion plantations, may be eſtimated at no more than one-half of the extent aſſigned to the pens. The reſult of the whole is 1,059,000 acres, leaving upwards of three millions an unimproved, unproductive wilderneſs. The mountains, however, are generally covered with extenſive woods, containing excellent timber; ſuch as the lignum vitæ, log-wood, iron-wood, pigeon-wood, green-heart braziletto, and bully-trees, all of which are to a great degree heavy, as well as compact and impenetrable. Some of theſe are neceſſary in mill-work, and would be highly valuable in the Windward iſlands. Of ſofter kinds, for boards and ſhingles, the ſpecies are innumerable; and there are many beautiful varieties for cabinet-work; and among theſe we may enumerate the bread-nut, the wild-lemon, and the well-known mahogany. Jamaica is not only abundantly wooded, but well watered; the number of its rivers being reckoned at above 100. It has alſo a variety of medicinal ſprings. Formerly, it is ſaid, the Spaniſh inhabitants had mines both of ſilver and copper; but the preſent occupiers employ their induſtry more profitably on the ſurface than in digging into the bowels of the earth. The moſt important of its preſent natural productions are ſugar, indigo, coffee, and cotton. The ſeveral ſpecies of grain cultivated in this iſland are, maize, or Indian corn, producing uſually two crops in the year, and ſometimes three; Guinea-corn, producing one crop in the year, planted in September, and gathered in January following, yielding from 30 to 60 buſhels an acre: and various kinds of calavances, a ſpecies of pea; and rice, but in no great quantity. The iſland abounds alſo with different kinds of graſs, of excellent quality: the artificial graſs, called "Scot's graſs," grows ſpontaneouſly in moſt of the ſwamps and moraſſes of the Weſt Indies; and it is ſo productive, that a ſingle acre of it will maintain five horſes for a whole year. The "Guinea-graſs" is next in importance to the ſugar-cane, as the grazing and breeding-farms are chiefly ſupported by it. Hence ariſes the plenty of horned cattle, both for the butcher and planter; which is ſuch, that few markets in Europe furniſh beef of better quality, and at a cheaper rate, than that of Jamaica. Mutton alſo is cheap and good. The ſeeds of the Guinea-graſs were brought from the coaſt of Guinea, as food for ſome birds which were preſented to Mr. Ellis, chief juſtice of the iſlands. The ſeveral kinds of kitchen-garden productions, that are known in Europe, thrive in the mountains of this iſland; and the markets of Kingſton and Spaniſh town are ſupplied with cabbages, lettuces, carrots, turnips, parſnips, artichokes, kidney-beans, green peas, aſparagus, and various ſorts of European herbs, in the greateſt abundance. Other indigenous productions that may be claſſed among the eſculent vegetables, are plantains, bananas, yams of ſeveral varieties, calalaa (a ſpecies of ſpinage), eddoes, caſſavi, and ſweet potatoes. Among the more elegant fruits of the iſland we may reckon the anana or pine-apple, tamarind, papaw, guava, ſweet-ſap, caſhew-apple, cuſtard-apple, cocoa-nut, ſtar-apple, grenadilla, avocado-pear, hog-plum, pindal-nut, neſbary, mammee, mammee-ſapota, Spaniſh gooſeberry, prickly pear, and ſome others, for which Jamaica is probably indebted to the bounty of nature. For the orange, the lemon, lime, ſhaddock, vine, melon, fig, and pomegranate, the Weſt India iſlands are perhaps obliged to their Spaniſh invaders. The cinnamon has been lately introduced, and the mango is become almoſt as common as the orange. In 1773 a botanic garden was eſtabliſhed in Jamaica, and in 1782 its valuable exotics were much increaſed.

This iſland is divided into three counties, *viz.* Middleſex, Surry, and Cornwall, which ſee reſpectively; and theſe three counties include twenty pariſhes, in which are eighteen churches and chapels; each pariſh being provided with a rector, and other church officers, and the preſentation to each living being lodged with the governor or commander-in-chief. The ſupreme court of judicature for the whole iſland is held in the town of St. Jago de la Vega, the capital of the county of Middleſex, in which court the chief juſtice of the iſland preſides, whoſe office is worth about 3000*l.* per annum. The aſſiſtant judges are gentlemen of the iſland, commonly planters, who receive for their attendance no recompence. From this court an appeal lies in civil actions for 300*l.* or upwards to the governor and council, as a court of error. Aſſiſe courts are alſo held every three months, in Kingſton for the county of Surry, and in Savanne-la-Mar for the county of Cornwall. The governor, or commander-in-chief is chancellor by his office, and preſides ſolely in that high department; he is alſo the ſole ordinary for the probate of wills and granting letters of adminiſtration. The office of enrollments, or of ſecretary of the iſland, which is an office of record, is important and lucrative; it is held by patent from the crown, and exerciſed by deputation. Its emoluments exceed 6000*l.* ſterling per annum. The provoſt-marſhal-general is alſo an officer of high rank and great authority, and held by patent from the crown. This acting officer is high-ſheriff of the whole iſland, and his legal receipts have been known to exceed 7000*l.* ſterling a-year. The office of clerk of the ſupreme court is alſo held by patent, and exerciſed by deputation: ſome years ago its value exceeded 9000*l.* currency. There are ſeveral other lucrative appointments, held by patent or commiſſion; and it is computed that not leſs than 30,000*l.* ſterling is remitted annually by the deputies in office within the iſland to their principals in the mother country. The legiſlature of Jamaica is compoſed of the captain-general or commander-in-chief, of a council nominated by the crown, conſiſting of twelve gentlemen, and a houſe of aſſembly, containing 43 members, who are elected by the freeholders. All bills paſſed in this aſſembly have the force of laws as ſoon as the governor's aſſent is obtained; but the power of rejection is ſtill reſerved in the crown.

The revenues of the iſland are partly *perpetual* by an act of the year 1728, and partly *annual*, depending on grants of the legiſlature. The revenue law may raiſe about 12,000*l.* per annum, of which 8000*l.* is particularly appropriated, and the ſurplus is applicable to the contingent expences, in aid of the annual funds. The governor receives 2500*l.* per annum out of the 8000*l.* fund: and a further ſalary of 2500*l.* is ſettled upon him, during his reſidence in the iſland, by a ſpecial act of the legiſlature. The annual funds may amount to 70,000*l.*, of which about 40,000*l.* is a proviſion for granting an additional pay to the officers and ſoldiers of his majeſty's forces ſtationed for the protection of the iſland. The current coins in Jamaica are Portugal pieces of gold, called the half-johannas, valued in England at 36*s* each; which paſs, if of full weight, at 55*s.* Spaniſh gold coins current are doubloons at 5*l.* 5*s.* each, and piſtoles at 26*s.* 3*d.* Silver coins are Spaniſh milled dollars at 6*s.* 8*d*, and ſo in proportion for the ſmaller parts of this coin: the loweſt coin is called a *bitt*, equal to about 5*d.* ſterling. A guinea paſſes for 32*s.* 6*d.* The number of white inhabitants was computed in 1780 at 25,000; but having ſince encreaſed, Mr. Edwards ſuppoſes that, including the troops and ſea-faring people, their number may be fixed at 30,000. The freed negroes and people of colour were computed in 1788 at 500 in each pariſh on an average; which makes 10,000 excluſive of the black people called Maroons. Theſe amount to about 1400. Of negroes in a ſtate of ſlavery, the preciſe number in 1787 was 210,894, and including thoſe who are fraudulently not returned, this number may be augmented to 250,000. The whole number of inhabitants of every deſcription is therefore eſtimated at 291,400. Mr. Edwards reports, from the books of the inſpector-general of Great Britain, that the trade of Jamaica, in 1787, employed 400 veſſels, containing 78,862 tons, navigated by 8845 men; that the total value of the exports from the iſland to various parts from January 5th, 1787, to January 5th, 1788, amounted to 2,136,442*l.* 17*s.* 3*d.*; and that the total value of the imports amounted to 1,496,232*l.* 5*s.* 4*d.* or by certain allowances neceſſary to be made, to 1,648018*l.* 14*s.* 4*d.* ſterling. Jamaica, ſays Mr. Edwards, had now nearly attained the meridian of its proſperity. The total of ſugar plantations in all the pariſhes of the iſland are ſtated by this author to have been, in 1789, 710, and the number of negroes employed in them 128 798. The number of its coffee plantations has very conſiderably increaſed; for in 1774 the export of coffee was 654,700lbs, and in 1790, 1,783,740lbs. The exports conſiſt of ſugar, rum, molaſſes, pimento, coffee, cotton wool, indigo, ginger, cacao, tobacco, mahogany, logwood, hides, and ſeveral miſcellaneous articles. The imports conſiſt of Britiſh manufactures, foreign merchandize from Great Britain, ſalted proviſions from Ireland, formerly negroes from Africa, ſalted cod, &c. from the Britiſh colonies in America; from the United States, Indian corn, wheat flour, rice, lumber, ſtaves, &c. in Britiſh ſhips, from Madeira and Teneriffe wine: Mr. Edwards gives the following ſtatement of the value of this iſland, conſidered as Britiſh property:—250 negroes at 50*l.* ſterling each, amounting to 12½ millions; the landed and perſonal property to which theſe negroes are appurtenant, (including the buildings,) are moderately reckoned at double the value of the ſlaves themſelves; making 25 millions in addition to the 12 millions 500 thouſand before ſtated; and in further addition the houſes and property in the towns, and the veſſels employed in the trade, are valued at one million 500 thouſand pounds more: amounting in the whole to 39 millions of pounds ſterling. Edwards's Hiſt. Weſt Ind. vol. i.

Jamaica, a townſhip of America, in Windham county, Virginia, watered by ſeveral branches of Weſt river, and containing 263 inhabitants.—Alſo, a poſt-town and capital of Queen's county, New York, on the W. part of Long iſland, containing a Preſbyterian, Epiſcopalian, and Dutch church, an academy, and nearly 100 dwelling-houſes: 12 miles E. of New York city; the whole townſhip contains 1661 inhabitants.—Alſo, a town of Africa, in the iſland of York, built by a Mulatto, the ſon of an Engliſhman, where the Engliſh have a factory.

Jamaica *Pepper.* See Pimento.

Jamaica *Wood.* See Brazil.

JAMALGUNGE, a town of Bengal; 42 miles S.S.E. of Dinagepour.

JAMAMA, or Imam, a town of Arabia, the capital of a diſtrict in the province of Nedsjed, ſituated on a river, which runs into the Perſian gulf, and famous for being the birth-place of a prophet, named Moſeilama, who exiſted before the days of Mahomet. N. lat. 25° 5′. E. long. 46° 8′.

JAMANASSIRO, a town of Japan, in the iſland of Niphon; 65 miles N.W. of Jedo.

JAMARD, in *Biography*, an ingenious and worthy eccleſiaſtic, who was, before the Revolution, a canon regular of St. Genevieve, prior of Roquefort, member of the Academy of Sciences, Belles Lettres, and Arts at Rouen; and who publiſhed in 1769, at Paris, in 8vo. "Recherches ſur la Theorie de la Muſique," or an Enquiry into the Theory of Muſic. The work is purely theoretical, and ſtrictly confined within the limits of harmonies, or diviſion of the muſical ſcale. The author has, unluckily, given offence to the patriotic muſicians of France, ſtill excluſive admirers of Lully and Rameau, by the following reflection. "It is aſtoniſhing that the Italians, who adhere ſtrictly to no regular ſyſtem or theory of ſound, ſhould compoſe better muſic than we do, who are in poſſeſſion of ſuch excellent principles of harmony;" but M. Laborde, ſtrongly attached to the old ſchool, by no means admits the fact. "In the firſt place, ſo far from granting that the Italians produce better muſic than we (the French) it is certain, on the contrary, that our's, with reſpect to harmony, is much ſuperior to that of the Italians, and that we allow their ſuperiority in nothing but the muſical drama, or opera, which is not tied down to ſuch rules as muſic properly ſo called, nor regarded in general as amenable to the laws of counterpoint.

"In the ſecond place, it is neceſſary to obſerve, that almoſt all the Italians compoſe by rote and by feeling, according to the method of their ſeveral ſchools. Very few of them have ever ſtudied the theory, or have the leaſt idea of the principles on which it is founded. We muſt allow, however, that this is the caſe with moſt practical muſicians, they ſeem to think theory a ſcience totally independent on practice. There is no practice, however, ſafe or exempt from error but by the knowledge of the principles of harmony, and the rules that flow from thoſe principles. We will allow, if you pleaſe, that the Italians are ſuperior to us in melody; but they muſt grant that we are their maſters in harmony, and that we write in a manner much ſuperior to them in accuracy, purity, and elegance." All this is very fine and honourable to France, but will the reſt of Europe ſubſcribe to M. Laborde's deciſions? and will it be believed that no good muſic ever *has* been compoſed or *can* be, by perſons unacquainted with Rameau's ſyſtem of the fundamental baſe? or that all the great maſters of Italy who have produced ſuch admirable works were ignorant of harmony? But we muſt not forget M. Jamard's theory in this diſcuſſion. This ingenious author has not only puſhed calculation by the diviſion of the monochord into all the diatonic, chromatic, and enharmonic intervals; but to the moſt minute ſhades of ſound poſſible; even to the warbling of birds, the ſliding the finger up and down the ſtring of a violin, or the incalculable tones of ſpeech. The worſt that can be ſaid, perhaps, of this labour is, that its uſe and application are not obvious. But a ſerious objection by nice ears will be urged againſt the author's making ſo imperfect an inſtrument as the French horn the guide and umpire of the diatonic ſcale, of which the 4th and 6th are ſo intolerably falſe and out of tune, that "the ploughman whiſtling o'er the furrow'd land" would not deform his wild melody by ſuch a ſcale. But though the *whole* ſyſtem of M. Jamard may be inadmiſſible and impracticable, as much ingenuity and ſcience are manifeſted in theſe calculations as could poſſibly be expected from a mere mathematician, totally unacquainted with practical muſic and its effects.

JAMAS, in *Geography*, a town of Japan, in the iſland of Ximo; 12 miles S.W. of Udo.

JAMATA, a town of Japan, in Niphon; ten miles W.S.W. of Jedo.

JAMBA, in *Ancient Geography*, a town of Aſia, in Babylonia, according to Ptolemy, ſituated near a marſh towards Arabia Deſerta.

JAMBA, in the *Mythological Romances of the Hindoos.* This is the name of a bear with whom Kriſhna and others of their deified heroes had adventures; ridiculous, if taken literally, but reaſonably imagined to be merely a veil for phyſical or ſcientific facts. See JAMBAVANTA.

JAMBAVAN, or JAMBHUVAN, the name of a bear expectorated by Viſhnu, as related in the legends of the Hindoos, for the purpoſe of aiding Rama in the wars of Lanka or Ceylon. On this occaſion moſt of the gods and demigods of the Hindoo pantheon were called upon by Viſhnu to aſſiſt Rama, himſelf indeed incarnate, againſt the giant king Ravana, as detailed at great length in that curious poem the Ramayana, by Valmiki, which has not yet been tranſlated. See RAMAYANA and RAVANA.

JAMBAVANTA. In the Sri Bhagavata, or Life of Kriſhna, eſtimated by the Hindoos as the eighteenth Purana (ſee PURANA), a number of adventures are related in which a bear acts a conſpicuous part under the name of Jambavanta. In Viſhnu's anatara, or incarnation in the perſon of Rama, a bear likewiſe under nearly the ſame name is introduced. Some aſtronomical alluſions are imagined to be hidden under theſe ſylvan allegories. Kriſhna is the ſun, he attacks and overcomes the bear, retiring with the daughter of his adverſary: this may refer to the ſun's approach to, and receding from, the northern tropic; Jambavanti being, it is ſuppoſed, a perſonification of Urſa major.

JAMBAVANTI, a female bear, daughter of Jambavanta, eſpouſed by Kriſhna, as related with many ſimilar apparently idle tales, in the Puranas and other romances, ſacred and profane, of the Hindoos.

JAMBEAUX, among our *Old Writers*, armour for the legs. The word is French, from *jambe*, the *leg*.

JAMBEC, in *Geography*, a town of Sumatra, which is the capital of a ſtate, and ſituated on a large river, both of the ſame name; the town is diſtant from the ſea on the eaſtern ſide of the iſland about 60 miles. This was formerly a place of conſiderable note, and both the Engliſh and Dutch companies had eſtabliſhments there. The trade conſiſts in gold duſt, pepper, and canes, but it is now eſteemed of little importance; the gold being moſtly drawn to the weſtern coaſt acroſs the country. S. lat. 1° 24′. E. long. 103° 39′.

JAMBER, a ſmall iſland in the Atlantic, near the coaſt of Africa. N. lat. 10° 21′.

JAMBIA, in *Ancient Geography*, a town of Arabia Felix, on the Arabic gulf, according to Ptolemy. It was ſituated near the Elanitic gulf.

IAMBIC FOOT, or IAMBUS, in *Metre*, conſiſts of two ſyllables; the firſt, ſhort; the ſecond, long ˘ ¯; as ἔχων *preces*, *around*.

> "Syllaba longa brevi ſubjecta vocatur iambus,
> Pes citus." Hor. de Art. Poet. 251.

Several derivations of this word are given by ancient authors, but none of them have much probability. (See Schol. on Hephæſtion, p. 157 and 169. edit. Gaisford. Etym. Magn. Sch. on Nicander. Euſtath. on Od. 11. p. 1684. Diomedes, p. 473.) The moſt probable one is from ἰάπτειν, *to aim at*, or *attack*. Ariſtotle (Poet. § 4. Winſtanl.) and Strabo (l. 9. § 10.) derive it from ἰαμβίζειν, *to ſatirize*; but I cannot find that this word was ever uſed before the invention of iambic verſe; or that in later authors it was ever uſed without ſome reference to it. When Gorgias ſaid that Plato καλῶς οἶδε ἰαμβίζειν, he meant that he could defame as well as a writer of iambics; and with the ſame alluſion he called him *another Archilochus.* (See Athen. 11. 505. d.) The paſſage in which ἰαμβοποιήσας occurs in Ariſtot. Poet. (§ 22. ſee Tyrwhitt's note,) has been miſunderſtood by all his commentators. It ſhould be read οἷον Εὐκλείδης ὁ ἀρχαῖος (διεκωμῴδει τὸν ποιητὴν) ὡς ῥᾴδιον ποιεῖν, εἴ τις δώσειεν ἐκτείνειν ἐφ᾽ ὁπόσον βούλεται· ἰαμβοποιήσας ἐν αὐτῇ τῇ λέξει; that is, *having made an iambic verſe in the very expreſſion.* It is more probable, therefore, that ἰαμβίζειν was derived from the verſe, than the verſe from it.

IAMBIC *Verſe*, is that which conſiſted principally of iambic feet. The Greeks uſed a great variety of forms of this verſe, either ſeparately, or intermixed with other verſes. (See Schol. on Hephæſt. p. 167.) It was meaſured by dipodiæ or double feet. When they uſed therefore a ſingle iambic foot as a verſe, it was called

Iambic Monometer Brachycatalectic, for which was uſed any foot of two ſyllables, except a trochee. Soph. Œd. Col. 117. 149. El. 856. 867. edit. Brunck.

An *Iambic Mon. Catal.* conſiſted of an amphibrach or a bacchius. (Soph. Aj. 873. 897. 1205. El. 1237. 1258. Œd. Col. 123.) This was ſometimes intermixed with iambic trimeters. Soph. Œd. t. 1468. Trach. 865. Œd. c. 1271.

Iambic Monom. called alſo an *iambic baſis*, conſiſted of two iambic feet; and admitted, inſtead of the firſt iambus, a tribrach, or a ſpondee, or a dactyl, or an anapæſt. Eur. Phœn. 312. Or. 979. Soph. El. 127. 1232. Æſch. Suppl. 278. Perſ 1043. (See Burney's Pref. to Æſch. p. 16.) Ariſtoph. Nub. 1103. Ach. 276. It is prefixed by Ariſtophanes (Eq. 380. 455. 939.) to an iambic dimeter catal. at the end of a ſyſtem of iambic dimeters.

Iambic Monom. Hypercat. or *Iambic Penthemimer*, admitted the ſame varieties in the firſt foot. Eur. Hec. 919. Soph. Aj. 599. Æſch. Perſ. 641. (See Burney, p. 25. and 80.) The laſt ſyllable was either long or ſhort.

Iambic Dimeter Brach. admitted a tribrach alſo in the ſecond foot. Soph. El. 857. 1246. Œd. t. 667. 696. Ariſt. Eq. 386. Pind. Ol. 4. ult. Pyth. 8. Str. 8. Iſthm. 7. Str. 8. See Herm. Comm. de Pind. Metr. v. 3. p. 216. Heyn.

Iambic Dim. Cat. called by the Scholiaſt on Nicander *Hemiamblic.* (Gaisford, p. 246.) Soph. El. 1241. 1262. Ariſtoph. Ach. 1223. He often cloſes a ſyſtem of dimeters with this verſe (Eq. 381. 456. 940.), and often intermixes them. (Ach. 1010. 1039.) In the ſecond place he generally preſerves an iambus (Herm. de Metr. p. 145.); but he has a tribrach in Ach. 1039; and an anapæſt, Nub. 1104. The *Anacreontic verſe* is referred by Hephæſtion to this metre. It conſiſted of two different ſyſtems; in one of which the firſt foot was always an anapæſt; in the other, either an iambus or a ſpondee; and in his genuine odes, no other variety was, I think, admitted. The laſt ſyllable was common. Both of theſe have been conſidered by others as *Ionici a majore*, with an anacruſis of one or two ſyllables. (See Herm. de Metr. p. 348.) This metre occurs with an anapæſt in the firſt place, in Eur. Cycl. 493—511. Soph. Ph. 1176, 7. El. 1067, 8. 1079, 80.

Iambic Dimeter.—The tragedians admitted an iambus or a ſpondee indifferently in the firſt and third places of this verſe, and a tribrach in the three firſt, and a pyrrhic in the laſt (Soph. Ant. 853—5. 872—4. 952, 3. 963, 4. Eur. Or. 978. 982. Æſch. Prom. 159—161. 178—180. Sept. 982, et ſeq. Pind. Ol. 4. Ep. 3. Nem. 1. 1.): but when many of theſe verſes were united together in a ſyſtem, as was often done by the writers of comedy, the meaſure was continued to the end of the ſyſtem; the laſt ſyllable, therefore, was not common, but the fourth foot admitted the ſame varieties as the ſecond; according to this ſcheme,

```
◡ –   ◡ – / ◡ –   ◡ –
◡◡◡   ◡◡◡   ◡◡◡   ◡◡◡
◡◡–   ◡◡–   ◡◡–   ◡◡–
– –         – –
–◡◡         –◡◡
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Ariſtoph. Eq. 367—379. 443—454. 911—938. Ach. 1040. 1192. 1209. Lyſiſtr. 260—3. (Herm. p. 144. Gaisford. p. 243—5.)

Iambic Dim. Hypercat. Eur. Or. 975. Soph. Ant. 338. 349. Æſch. Prom. 431. Pind. Ol. 6. 1. 7. 5. Bacchylides, fr. 7. and Biaſ. fr. 4. Brunck. And with an anapæſt in the third place. Pind. Pyth. 8. Ep. 1. The third verſe of the *Alcaic ode* was in this metre. Alcæus ſeems always to have uſed an iambic in the third ſeat. See Bentley on Hor. Od. 2. 19. 15.

Iambic Trim. Brachycat. Eur. Or. 976. 1398. 1448. 1451. Soph. Ant. 587. Œd. t. 1339. Pind. Nem. 8. Ep. 6.

Iambic Trim. Cat.—This is aſcribed to Archilochus by Hephæſtion. Archil. fr. 24. Brunck. Eur. Phœn. 301. Or. 1365. Soph. Œd. t. 865. 889. Theocrit. Epigr. 18. Br. Anal. Phalæcus has an epigram in this verſe. Anal. 1. 421.

Iambic Trimeter, is the metre of this kind moſt commonly uſed; and it conſiſted of three iambic dipodiæ.

> " Iambus ipſe ſex enim locis manet
> Et inde nomen inditum eſt Senario;
> Sed ter feritur; hinc Trimetrus dicitur,
> Scandendo binos quod pedes conjungimus."
>
> Terentianus Maurus.

It is ſo nearly allied to proſe, that Ariſtotle (Rhetor. 3. 1. 9. 3. 8. 4. Poet. § 4.) and Demetrius Phalereus (§ 43. ſee alſo Cicer. Orat. § 189) have obſerved, that many iambic verſes were uttered in common converſation; and they are frequently to be met with in the works of Greek proſe authors. From this circumſtance it was well ſuited to the ſermo pedeſtris of ſatire, to which purpoſe it was applied by its inventor Archilochus. (See Hor. Art. Poet. 79. and Od. 1. 16. 2. and 22. Epiſt. 1. 19. 24.) The ſame circumſtance made it alſo peculiarly applicable to dramatic compoſition.

> " Hunc Socci cepere pedem, grave ſque Cothurni,
> Alterniſque aptum ſermonibus, et populares
> Vincentem ſtrepitus, et natum rebus agendis."
>
> Hor. Art. Poet. 80.

See alſo Cicer. Orat. § 191.

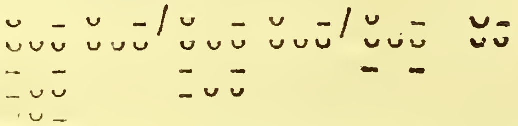
A pure iambic verſe would conſiſt of ſix iambic feet; as

> Ἐπεὶ σχολὴ πάρεστι, παῖ Μενοιτίου.
>
> Dion. Hal. de Compoſ. § 17.

but neceſſity obliged the firſt writers to admit other feet, which was chiefly done in the firſt, third, and fifth places.

> " Tardior ut paulo graviorque veniret ad aures,
> Spondeos ſtabiles in jura paterna recepit,
> Commodus & patiens; non ut de ſede ſecunda
> Cederet, aut quarta ſocialiter."—
>
> Hor. Art. Poet. 254.

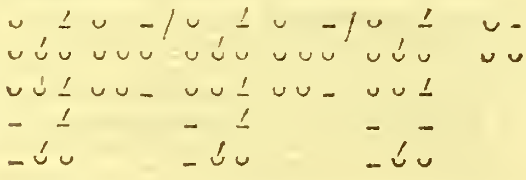
The few fragments of Archilochus and Solon which remain, have a ſpondee in the firſt and third places much more frequently than an iambic; and they ſeem to have uſed them indifferently in the fifth. Archilochus alſo affords two inſtances of the reſolution of the iambus into the tribrach in the ſecond; and one, of the admiſſion of a dactyl into the firſt place. Theſe licences were afterwards generally uſed by the tragic poets, who admitted the following varieties into their verſe.



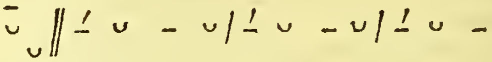
Many critics, among whom are Muſgrave (on Eur. El. 23) and Brunck (on Soph. Œd. c. 371 and 1169, and Phil. 491.), have thought that the anapæſt was admitted in the ſecond and fourth places; and it was long the univerſal opinion that it was allowed in the third and fifth; and there are ſeveral verſes in the printed editions which ſeem to confirm this opinion; but in proportion as more and better manuſcripts have been conſulted, the number of theſe places has been diminiſhed, and the anapæſt has been confined to the firſt place, where Æſchylus and Sophocles have been careful to include it in a ſingle word, and Euripides either in a ſingle word, or in a prepoſition and the word which it governs. (Morell. Proſod. p. 11. 19. Porſon. præf. ad Eur. Hec. Hermann. præf. ad Eur. Hec. p. 33. 38. and 53.) In proper names, ſuch as Ἑρμιόνη, Ἀντιγόνη, which could not otherwiſe be uſed in an iambic verſe, greater licence was allowed; and an anapæſt was admitted in any place but the laſt. And this liberty has been ſometimes uſed in names which did not neceſſarily require it, as Μενέλαος, Ἀγαμέμνων, but care was taken that the whole anapæſt ſhould always be included in the name. Porſon. præf. p. 20. Herm. præf. p. 60.

It has been obſerved by Mr. Porſon, to whom we owe the firſt notice of ſome of theſe rules, and the eſtabliſhment and confirmation of others, that in the tragic writers, when an iambic trimeter ends in a triſyllable, the fifth foot is very rarely a ſpondee, unleſs the laſt word but one be a monoſyllable. It is the ſame, if the verſe ends with a trochee and a ſyllable, or with a long ſyllable and an iambus, if the long ſyllable is a prepoſition, or an article, or any ſyllable particularly belonging to the following word; but if the long ſyllable is an enclitic, or a particle referring to what goes before, it may then make part of a ſpondee. (Porſon. præf. p. 30. Herm. on Eur. Hec. 341.) This rule is ſtrictly obſerved alſo by Lycophron. Mr. Porſon (ſee note on Eur. Phœn. 1464.) has obſerved that καὶ never makes the latter part of a *ſpondee* in the fifth foot of a tragic iambic. Perhaps he overlooked Soph. Phil. 961; and he ſeems himſelf to have admitted a conjecture of Canter on Æſch. Suppl. 411, which introduces it.

The comic poets uſed much greater licence, and the form of their verſe was



The reaſon of theſe licences will be more clearly ſeen, if we conſider that in the iambic trimeter there are three ἄρσεις, or ictus, or emphaſes, which are here marked, the firſt of which took place on the long ſyllable of the firſt iambus, or its equivalent. As the rhythm was principally directed by theſe, it may be conſidered as beginning at the firſt arſis; and the verſe will then become a trochaic trimeter catalectic, in this form



(See Bentley on the Metres of Terence; Daves Miſc. Crit. p. 189; Herm. de Metr.) The ſyllable before the firſt arſis, when the rhythm had not yet commenced, was indifferently either ſhort or long, and ſometimes two ſhort ones were admitted. In the remaining part of the verſe, as two ſhort ſyllables were conſidered as equivalent to one long, the tribrach was uſed almoſt indiſcriminately inſtead of the trochee, except in the fifth foot, where the tragedians ſeldom reſolve the long ſyllable, and never, if it is preceded by a long one. The firſt foot of each trochaic dipodia (either –́ ⏑ or –́ ⏑ ⏑) being moſt diſtinctly heard, was preſerved pure by the tragic poets, but in the familiar ſtyle of comedy, the dactyl was ſometimes ſubſtituted for the trochee, which would produce an anapæſt in the ſecond place of the iambic verſe. In the next foot, at the cloſe of each dipodia, a ſpondee or a trochee was indifferently uſed by the tragedians, and a dactyl by the writers of comedy.

Daves (p. 250.), and Morell (p. 12.), have obſerved that Ariſtophanes avoids putting an anapæſt immediately after a dactyl or a tribrach in an iambic trimeter. Hermann (de Metr. 150 – 162.) produces many inſtances (to which more might be added) of an anapæſt after a tribrach, which he conſiders as a proceleuſmatic, formed from the reſolution of the long ſyllable of an anapæſt and an iambus; but they are probably corruptions, and may be removed without difficulty. It may be obſerved alſo that when an anapæſt is admitted into the fifth place by Ariſtophanes, it is included within one word; or contains the whole of two, as of a prepoſition and an article; or is entirely comprehended within the laſt words of the verſe: but the beginning of the anapæſt is never joined in the ſame word with the fourth foot, or any part of it. In Brunck's edition there are only ſeven exceptions to this rule; two of which (Ach. 800. 962.), are occaſioned by the marks of diæreſis improperly placed, and the other five (Plut. 942; Nub. 238. 1192. 1458; Av. 90.) may be very eaſily corrected.

The cæſura of the iambic verſe takes place at the end of the firſt trochaic dipodia, that is, in the middle of the third foot; and a new trochaic order then begins. The conſtant obſervation of this cæſura would make the verſe too uniform and monotonous; it is therefore very frequently neglected: for I would not conſider as a cæſura, the termination of a word in the middle of the fourth foot; ſince the firſt foot of the trochaic order which ſucceeds would then frequently be a ſpondee. As Σὺ δ᾽ ἐλθέ, καὶ σήμηνον— Ἀργείοις τάδε. Inſtead of either of theſe, a diviſion ſometimes takes place after an eliſion at the end of the third foot; but otherwiſe the tragedians very rarely make the third or fourth foot a ſingle word; and carefully avoid including them both in one word; as that would deſtroy all perception of the trochaic order of the verſe. Bentley, Herm. de Metr. p. 147; and on Eur. Hec. v. 721; Porſon. pr. to Hec. p. 24; Gaisford on Hephæſt. p. 239.

The words which cannot begin a ſentence, cannot ſtand at the beginning of an iambic verſe (Bentley on Menand. p. 108. Monthly Rev. June, 1785, p. 424.), and the arſis is very ſeldom admitted on an enclitic (Porſon, p. 16.), or on the laſt ſyllable of a word of more than two ſyllables (Daves, p. 211. 320.) though to this a few exceptions may be found. Ariſt. Lyſ. 739. 744. Rar. 785.

In the *ſatiric fable* the ſame licence was probably allowed as in the comedies. In the ſingle drama which remains, a dactyl is not to be found in the fifth place, nor an anapæſt in the third; unleſs Pierſon's conjecture on v. 28. be admitted.

The earlieſt *iambographi*, or writers of iambic verſes, Archilochus, Solon, and Simonides, uſed a ſpondee or an iambus indifferently, as has been before obſerved, in the odd places; but were very ſparing in the uſe of feet of three ſyllables. The "Poem upon Women," which was written perhaps by ſome Simonides of more recent date, has a tribrach once, in the firſt, ſecond, and fifth places, and an anapæſt once in the third. Lycophron has admitted a tribrach in the third place (v. 1164. ed. Reichard.) and fourth (700. 991.), and with part in a proper name in the ſecond and fourth (520. 874. 1046). He has ten or eleven dactyls in the third place, but an anapæſt only in a proper name (720. 930. 952.); for in v. 634. τε ſhould be expunged. See Herm. de Metr. 150, who aſſerts that the iambographi never admit a dactyl or anapæſt. Brunck. Soph. Œd. c. 371. Porſon. præf. to Hec. p. 19.

Another kind of iambic trimeter much allied to this, was the *Choliambicus, Claudus,* or *Scazon*, called alſo *Hipponacteus*, from Hipponax, who is ſaid to have firſt uſed it. He applied it to the ſame purpoſe of ſevere ſatire, and bitter invective, as Archilochus. (Leonid. Epigr. 97. Alcæus, Ep. 18. Philipp. Ep. 83. Demetr. Phal. § 325. Euſtath. on Od. 11. p. 1684. Cic. de Nat. Deor. 3. 38. Hor. Epod. 6. 14. Ovid. Ibis, 523.) The diſtinguiſhing characteriſtic of it was a ſpondee in the ſixth place. The varieties which it admitted, as far as we can collect from the fragments of Hipponax, Babrius, and others which remain, were according to the following ſcheme.

⏑ – ⏑ – / ⏑ – ⏑ – / ⏑ – – –
⏑⏑⏑ ⏑⏑⏑ ⏑⏑⏑ ⏑⏑⏑ – ⏑
– – – – – –
–⏑⏑ –⏑⏑
⏑⏑– ⏑⏑– ⏑⏑–

Of theſe the anapæſt was very rarely uſed, and the dactyl not frequently. (Bentley on Phalaris, p. 433–6. Gaisford on Heph. p. 251—8.) Theſe verſes were ſometimes called *Mimiambi.* (Terentianus Maurus. A. Gell. 15. 25. 20. 10.) Joh. Stobæus has preſerved ſeveral of them from *Herodes in Hemiambis*, which ought perhaps to be changed to *Mimiambis.* (See Caſaub. on Athen. 1. cap. 17.) This metre was ſometimes uſed by Callimachus. See his Fragments, collected by Bentley, 83—98.

When the fifth foot was alſo a ſpondee, the verſe was called ἰσχιοῤῥωγικός. (See Tyrwhitt's Babrius, p. 13.) This was principally uſed by Ananias (or, as he is called by Athenæus, Ananius), but was occaſionally intermixed with the other by Hipponax and Babrius. See alſo an epigram on Hipponax, by Theocritus.

Iambic Trimeter Hypercat. Ariſtoph. Lyſiſtr. 1297. Theſm. 988. It occurs in Æſch. Chœph. 321. 352, according to Burney's arrangement; and in Pind. Ol. 3. 6. and Nem. 9. 11 according to Hermann.

Of Iambic Tetrameter Brachycat. which is mentioned by the ſcholiaſt on Hephæſtion, I find no example.

Iambic Tetrameter Catal., called alſo Hipponacteus. (Sch. on Ariſtoph. Plut. 253. Hephæſtion. Marius Victorinus. See Gaisford, p. 246.) This was very frequently uſed by the comic writers, and had a pauſe at the end of the fourth foot, though the word frequently did not end with it. It admitted, in the firſt, third, and fifth feet, the ſame varieties as in the ſame feet of the comic trimeter; and, in the ſecond and ſixth, the ſame as in the ſecond and fourth of the other. The fourth foot could only be an iambus or a tribrach; and in the ſeventh an iambus only was allowed, except in the caſe of a proper name, when an anapæſt was admitted in either place. Ariſtoph. Ran. 905—970. Nub. 1034—1084. Therm. 531—573. Lyſiſtr. 539, 540. Porſon, præf. to Hec. p. 39. Monthly Rev Sept. 1789, p. 253, *note.*

Iambic Tetrameter. A verſe of Alcæus in this metre is quoted by Hephæſtion, and his Scholiaſt. Boiſcus of Cyzicus is ſaid to have firſt uſed it. It was not uſed by the Greek dramatiſts. Hermann. p. 181. Gaisford, p. 245.

Iambic Tetrameter Hypercat. The Scholiaſt on Hephæſtion produces a verſe in this metre, and ſays that the meaſure of iambic verſes was extended ſtill further; but the examples which he cites are made up of ſhorter verſes of Archilochus joined together.

The Romans do not appear to have made uſe of ſo great a variety of iambic verſes as the Greeks. I will enumerate thoſe which were moſt commonly uſed by them.

Iambic Monometer Hypercat. occurs occaſionally in the tragedies which are aſcribed to Seneca. (Œd. 411. 415. 732.) An anapæſt and a ſpondee were uſed in the firſt place.

Iambic Dimeter Catal. Seneca, Med. 849—878. Œd. 485. Plaut. Mort. 1. 2. 19.

Iambic Dimeter. Seneca uſes a ſyſtem of theſe verſes in Agam. 759–784. In the firſt foot he has admitted a ſpondee and a dactyl; in the third, a ſpondee; and the laſt ſyllable is common. He has an anapæſt in the firſt and fourth, Œd. 414. Plautus (Mort. 1. 2. 25. 26. 49. 50.) and Terence (Andr. 1. 2. 5. 1. 5. 5. 8. 17. 3. 3. 5. 3. 4. 26.) uſe a ſpondee and anapæſt in every foot but the laſt, and a dactyl alſo in the two firſt. Hermann (de Metr. p. 146.), Virgil (Catal. 5.), Horace (Epod. 1–10), Martial (1. 50. 3. 14.), and Seneca (Med. 771—786.), have uſed this verſe alternately with the iambic trimeter. Horace (Epod. 14, 15.) has intermixed it with hexameters, and Martial (1. 62.) with ſcazons. Beſides the iambic and ſpondee, an anapæſt and dactyl are admitted in the firſt place by Martial, and a tribrach by Horace, who once uſes a dactyl alſo in that ſituation. The ſecond was always an iambus or tribrach. The ſpondee was the moſt common foot in the third, but an iambus is occaſionally uſed, and Martial and Seneca have ſometimes an anapæſt.

Iambic Dimeter Hypercat. This is the third verſe of the Alcaic ode, which Horace always uſes in this form, preſerving a ſpondee in the third place ⏓ – ⏑ – / – – ⏑ – / ⏓

Iambic Trimeter Brachycat. Seneca Œd. 719, 720. 731. 733, 4. 736. Agam. 596. He admits a ſpondee and anapæſt in the firſt place, and a ſpondee in the third, fourth, and fifth.

Iambic Trimeter Cat. Horace uſes this metre (Od. 2. 18.) with a cæſura in the middle of the third foot. As it follows a trochaic dimeter catal., and the ſyllable preceding the cæſura is either long or ſhort, this verſe may be conſidered as an aſynartete conſiſting of an iambic penthemimer, and an ithyphallic. A ſpondee was allowed in the firſt place, and a tribrach in the ſecond. In Od. i. 4, the ſame meter occurs with the ſame cæſura, and a long ſyllable always before it. As it is joined with an aſynartete, compounded of a dactylic tetrameter, and an ithyphallic, it may properly be conſidered as an aſynartete here alſo.

Iambic Trimeter. In the tragedies of Seneca, an iambus, tribrach, ſpondee, dactyl, anapæſt, and proceleuſmatic were admitted in the firſt place, and the four firſt of theſe in the third, which received an anapæſt alſo, though rarely, and only in words of four ſyllables. In the ſecond and fourth, an iambus, or a tribrach only, was admitted. In the fifth place an iambus is found only in five verſes, and a dactyl only in four; the verſe ending, in both caſes, with a word of four ſyllables; and a tribrach only in three, and contained by one word. (See AVANTIUS.) An anapæſt and a ſpondee were admitted indifferently in this place; but it is obſervable that the anapæſt is always contained in one word, with or without an eliſion of the laſt ſyllable, except in eight places where a pyrrhic is found followed by *eſt*, or *ſit*. The only exceptions to this rule are in Herc. Oct. 406. 757, and Oct. 393, which may be all made regular by an eaſy tranſpoſition. The anapæſt in *neſcio quid*, which occurs five times, is not an exception, as that expreſſion was conſidered as one word.

Plautus and Terence in the firſt four feet uſe an iambus, ſpondee, dactyl, tribrach, anapæſt, and proceleuſmatic. In the fifth, a ſpondee, dactyl, and anapæſt. The third and fourth feet were very rarely allowed to be ſingle words, which would have thrown the arſis on the laſt ſyllable of the words; and whenever this happened, they were careful to have the preceding ſyllable ſhort. (See Bentley on Terence.) Phædrus uſes the ſame licence as the comic writers, excepting that he does not admit a proceleuſmatic.

Catullus in Carm. 4. 20. 29; Virgil in Catal. 3, 4; and Horace in Epod. 16. (where he uſes this metre alternately with hexameters), admit no foot but the iambic, except a pyrrhic at the end, from the laſt ſyllable being common. In other places where this verſe is uſed alone, as Catullus, 52, Horace, Epod. 17, or with alternate dimeters, a ſpondee, anapæſt, and dactyl were admitted in the firſt and third places; a ſpondee and anapæſt in the fifth; and a tribrach in the ſecond, third, and fourth.

The ſcazon is uſed not unfrequently by Catullus; by Virgil, Catal. 2. 7.; and by Martial very frequently. Virgil admits no foot of three ſyllables, and Catullus very rarely. Martial has the ſame variety as in the regular trimeter in the four firſt feet; and in the ſecond and fourth he admits alſo occaſionally an anapæſt. In this metre the fifth foot, among the Latins, was almoſt invariably an iambus, though a ſpondee may be found there in Martial. 1. 67. 13.

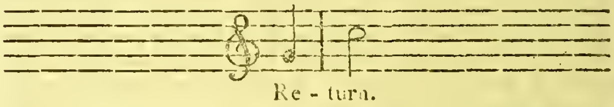
Iambic Trimeter Hypercat. Seneca Agam. 612. Plaut. Aul. 2. 1. 3. 2. Stich. 1. 1. See Herm. de Metr. 169—175.

Iambic Tetrameter Catal., called alſo *Septenarius*. Catullus, 25. Terence, Andr. 4. 2. Eun. 3, 4. 3. 5. Hec. 2. 2. 5. 2. Plaut. Ani. 3. 3. Mil. Gl. 2. 4. Mort. 1. 3. In all the feet of this verſe, but the fourth and ſeventh, the ſame variety was allowed as in the trimeter. In the fourth, Bentley (on Hec. 2. 2. 10.) admits in Terence only an iambus; but in Eun. 3. 5. 55. his own edition has an anapæſt, and in Hec. 5. 2. 24, a proceleuſmatic, in that ſituation. Plautus has ſometimes admitted in the fourth a tribrach and an anapæſt, and ſometimes ſeems to have conſidered the verſe as an aſynartete, and therefore admits a pyrrhic and an hiatus before the cæſura. (Ani. 3. 3. 61.) In the ſeventh, a ſpondee, dactyl, and anapæſt were uſed. See Herm. de Metr. p. 177—181.

Iambic Tetrameter. This metre was alſo uſed very frequently by the comic poets. The cæſura was either at the end of the fourth foot, or in the middle of the fifth. In this latter caſe, all the ſix feet firſt admitted the ſame variety as the comic trimeter. In the former the fourth foot was generally an iambus. The ſeventh foot might be a ſpondee or an anapæſt. The eighth was always an iambus. (Ter. Andr. 1, 2. 1. 3. Eun. 3. 5. 5. 8. Phorm. 2. 1. Plautus, Bacchid. 4. 9. Amphitr. 3. 4.) The verſes quoted by Cicero (Tuſc. 1. 44.) from an old tragic poet, and which he calls *Septenarii*, were referred to this metre by Scaliger, Gerh. Voſſius, and lately by Hermann. Bentley was of opinion that this verſe was never uſed by the Latin tragedians. See Herm. de Metr. p. 181—186.

N.B. The editor is indebted for the two preceding valuable articles to the Rev. Mr. Adams, vicar of Halſtead, Eſſex.

As a poetical foot conſiſts of a certain number of ſyllables which conſtitute a diſtinct part of a verſe, ſo a *bar* of an air in muſic contains a certain number of notes of different lengths which are reducible to long and ſhort ſyllables: an hexameter verſe conſiſts of ſix of theſe feet, a pentameter of five; an iambic foot has one ſhort and one long ſyllable: as Θεὸς, λέγω, *potens*, *amas*.



In ancient muſic, ſays Rouſſeau, there were two kinds of iambic verſe, one of which was only recited to the ſound of inſtruments, whereas the other was ſung. It is not eaſy to comprehend what effect the accompaniment of inſtruments could have on ſimple recitation; and all that we can reaſonably conclude is, that the moſt ſimple manner of pronouncing Greek poetry, or at leaſt iambics, was to muſical tones, and very much reſembled ſinging.

IAMBICE, in the *Muſical Inſtruments of the Ancients*. Among the ſtringed inſtruments of the ancients mentioned by J. Pollux, we find one called iambice; and Muſonius, "de luxu Græcorum," ſays that it was a kind of triangular cithara, invented by Ibycus.

JAMBLICHUS, in *Biography*, an ancient philoſopher, who was a native of Syria, and educated at Babylon. Upon Trajan's conqueſt of Aſſyria, he was reduced to a ſtate of ſlavery; but recovering his liberty, he afterwards flouriſhed under the reign of the emperor Antoninus. His treatiſe in the Greek language, entitled "Babylonica de Simonidis et Rhodanis Amoribus," and conſiſting of 16 books, is ſaid to have been lodged in MS. in the library of the Eſcurial, and deſtroyed by fire in the year 1671. A fragment of it was preſerved by Leo Allatius, accompanied with his own Latin verſion, in his Selections from the MSS. of Greek Rhetoricians and Sophiſts, Rome, 1641, 8vo.

JAMBLICHUS was alſo a native of Chalcis in Cœlo-Syria, and flouriſhed about the beginning of the fourth century. He received his firſt inſtructions from Anatolius, preſident of the Peripatetic ſchool at Alexandria; and afterwards became a diſciple of Porphyry. He was eminently verſed in the myſteries of the Plotinian ſyſtem, and taught it with ſuch reputation and ſucceſs, as to attach to his ſchool a great number of diſciples. Although he was much inferior to Porphyry in eloquence, he commanded the reverence of his followers by high pretenſions to theological powers. In the exerciſe of theſe powers, which he profeſſed to acquire by an intercourſe with inviſible beings, he aſtoniſhed the credulous, and obtained the name of "the moſt divine and wonderful teacher." His reading was extenſive, but his ſtyle was inaccurate and inelegant; and he took great liberty in borrowing from others, and particularly from Porphyry. This charge of plagiariſm is alleged againſt Jamblichus by Kuſter, Voſſius, Gale, Moſheim, and other learned men; but Dr. Lardner does not perceive any ground for it. This impartial and candid writer is of opinion, that Porphyry and Jamblichus found the ſame ſtories in authors more ancient than themſelves, whom they both tranſcribed, and ſometimes almoſt word for word. He adds, that moſt of the things related by theſe two authors concerning the wonderful works aſcribed to Pythagoras are ſo trifling, and ſo manifeſtly fabulous, that he cannot believe they intended to oppoſe them to the miracles of Jeſus Chriſt. The miracles of our Saviour, ſays Lardner, are all great and awful, related by credible witneſſes, with all the circumſtances of credibility: the trifling and fabulous accounts of Pythagoras cannot be ſet in competition with them. It is ſufficient diſparagement to thoſe proud and learned philoſophers that they gave credit to the Pythagorean fables. We need not reproach them with an intention to oppoſe them to the miracles of Jeſus Chriſt. "The Life of Pythagoras;" "An Exhortation to the Study of Philoſophy;" "Three Books on Mathematical Learning;" "A Commentary upon Nichomachus;" "Inſtitutes of Arithmetic;" and "A Treatiſe on the Myſteries of the Egyptians, Chaldæcal Aſſyrians;" are all the writings of Jamblichus now extant. The moſt eſteemed editions of the above-mentioned works are thoſe "De Myſt. Ægypt. Chald. et Aſſyr. necnon et alii Tractatus Philoſophici," printed by Aldus, at Venice, 1497, fol.; "De Myſt. Ægypt. necnon Porphyrii, Epiſtola, &c. Gr. and Lat. ex Interpretatione et cum Notis Thonæ Gale," Oxon, 1678, fol.; and "De Vita Pythag. Liber. Gr. and Lat. ex emendatione et cum notis Ludolphi Kuſteri;" Amſter. 1707, 4to. From St. Jerome we learn that Jamblichus wrote copious comments on the precepts of Pythagoras, commonly called "the Golden Verſes;" and the emperor Julian, who holds him in equal eſtimation with Plato, cites a treatiſe on the ſun, from which he has made many extracts. Fabricius mentions another work of Jamblichus, not now extant, entitled "Of Images;" or "Of the Divinity of Images;" of which Photius has given ſome account. The deſign of Jamblichus, it is ſaid, in this work, is to ſhew the divinity of idols, which he calls images, and that they are filled with the divine preſence, and are fallen down from Jupiter, &c. In ſupport of this opinion he relates many incredible ſtories. This work of Jamblichus is confuted by Philoponus. The time and place of his death are uncertain; but there is reaſon for believing that he died before Conſtantine, and probably about the year 333.

The ſchool of Jamblichus produced many Eclectic philoſophers, who were diſperſed through various parts of the Roman empire. The immediate ſucceſſor of Jamblichus was Ædeſius of Cappadocia. Fabr. Bib. Græc. vol. iv. and vol. vi. Brucker's Hiſt. Philoſ. by Enfield, vol. ii. Lardner's Works, vol. viii.

Jamblichus, another Platonic philoſopher, who was a native of Apamea, in Syria, flouriſhed during the reign of the emperor Julian, who was much attached to him, and very freely correſponded with him. This philoſopher is ſaid to have been poiſoned under the reign of the emperor Valens. This Jamblichus has been confounded with the former by many writers, though they lived at very diſtant periods, and the works of the one have been aſcribed to the other. This Jamblichus was the friend of Alypius, wrote with him on the ſubject of muſic, and compoſed the hiſtory of that great muſician's life.

JAMBLICI Sal, in *Medicine*, a kind of ſalt prepared with ſal ammoniac, and ſeveral aromatic ingredients, ſuch as pepper, ginger, thyme, origanum, and the like; it has its name from its reputed author Jamblichus, and is ſuppoſed by many old writers to be an excellent medicine for concocting the crude humours, and gently producing ſtools. It was taken faſting in the quantity of half a ſpoonful, either alone or in a poached egg, or mixed with any liquor.

JAMBO, or Janbo, in *Geography*, a ſea-port town of Arabia Felix, in the province of Hedsjas, on the coaſt of the Red ſea; 72 miles S.W. of Medina. N. lat. 24° 5′.

JAMBOLIFERA, in *Botany*. See Calyptranthes.

JAMBON, in *Geography*, a river of the iſland of St. Vincent, which runs into the ſea; five miles S. of Young Point.

Jambon, in *Natural Hiſtory*, a name given by authors to a kind of ſea-ſhell, reſembling a ham of bacon. It is a ſpecies of *pinna marina*.

JAMBOS, in *Botany*. See Eugenia.

JAMBS, among *Carpenters* and *Bricklayers*. See Jaums.

JAMBU, in *Ornithology*. See Columba *Jambu*.

Jambu, the name of a Braſilian ſpecies of partridge, of which there are two ſpecies. They are of a duſky yellow colour, and are equal to the European partridges in the delicacy of their taſte. Margrave.

IAMBUS, Ιαμϐος, in the *Greek* and *Latin Proſody*, a poetical foot, conſiſting of a ſhort ſyllable followed by a long one: as in

⏑– ⏑– ⏑– ⏑–
Θεω, λεγω, *Dei*, *meas*.

"Syllaba longa brevi ſubjecta vocatur iambus," as Horace expreſſes it; who alſo calls the iambus a ſwift, rapid foot, *pes citus*.

The word, according to ſome, took its riſe from Iambus, the ſon of Pan and Echo, who invented this foot: or, perhaps, who only uſed ſharp biting expreſſions to Ceres, when afflicted for the death of Proſerpine. Some rather derive it from the Greek ιος, *venenum*, *poiſon*; or from ιαμϐιζω, *maledico*, *I rail*, or *revile*; becauſe the verſes compoſed of iambuſes were at firſt only uſed in ſatire.

The invention of this kind of verſe is aſcribed by Horace to Archilocus:

> "Archilochum propria rabies armavit iambo"
> Art. Poet.

See Iambic *Foot*.

JAMDRO, or Palté, in *Geography*, a lake of Thibet, of ſuch extent that it is ſaid to be about 300 miles in circumference, or to require to encompaſs it 18 days journey of 20 miles each. By the Lama's map the circumference is only 150 Britiſh miles. According to the deſcription of Giorgi, it has in the middle a range of hillocks and iſles; or, according to the Lama's map, one large iſland, encircled by a lake from three to eight miles wide. The iſland is ſaid to be about twelve leagues in diameter, and the trench that every where ſurrounds it is about two leagues broad. On the ſouth of the iſland is the convent of the great female lama, Turcapamo, who was adored as a deity, and received with ſupreme pomp when ſhe viſited Laſſa, which is about three days journey, or about 24 miles N. of the lake. On the north of the lake ſtands Cambala, a mountain of great height, and at a diſtance of ſeven miles runs the river Sampo, or Burrampoot, which is here 500 feet wide. N. lat. 28° 50′. E. long. 90° 45′.

JAMENGIAN, a town of Perſia, in the province of Farſiſtan; 42 miles W.S.W. of Schiras.

JAMES, St., in *Scripture Biography*, denominated "The Elder," by way of contradiſtinction to the ſubject of the next article, was the ſon of Zebedee, a fiſherman upon the lake of Galilee, and of Salome, who is ſuppoſed by Theophylact and others to have been related to our Lord. As he is always mentioned firſt, except in Luke, ix. 28, he was probably older than his brother John. Of the call of James and John to be ſtated attendants on our Lord's miniſtry, we have an account in Matt. iv. 21, 22. Mark, i. 19, 20. Luke, v. 1—10. Theſe two brothers were diſtinguiſhed by the appellation of "Boanerges," or ſons of thunder, not by way of reproach, as Cave has erroneouſly intimated, but as an honourable anticipation of the reſolution and courage with which they would openly declare the truths of the Goſpel, as ſoon as they were made acquainted with them. It appears that after they were enliſted in the number of our Lord's diſciples, they were admitted into a peculiar intimacy with their Maſter, and attended him on ſome of the moſt intereſting occaſions in the courſe of his miniſtry. At the reſurrection of Jairus's daughter, at our Lord's tranſfiguration on the mount, and in the ſcene of his laſt agony, James was preſent; and he was one of the four apoſtles to whom Chriſt delivered his prediction concerning the previous calamities and ultimate deſtruction of Jeruſalem. James appears to have been eminently diligent and zealous in fulfilling the commiſſion which in common with the other apoſtles he had received, or of announcing the character and pretenſions of their Maſter through various parts of Judea, which were afterwards the ſcenes of his perſonal miniſtry. On ſome occaſions, however, both he and his brother John, indulging a reſentment, and alſo an ambition which were inconſiſtent with the nature of Chriſt's kingdom and the mild ſpirit of his religion, ſubjected themſelves to the juſt reprehenſion of their Maſter. When they wiſhed to command fire from heaven to deſtroy the Samaritans for refuſing them the accommodation which they ſolicited, he reproaches them with not knowing what manner of ſpirit actuated them; and when, apprehending his kingdom to be temporal, they beſpoke ſtations of dignity and influence when it was eſtabliſhed, he corrected their miſtaken views, checked their inordinate ambition, and forewarned them of the trials and ſufferings that awaited them. After the reſurrection of Chriſt, James retired into Galilee, but ſoon returning to Jeruſalem, he was witneſs of his aſcenſion, and participated of the extraordinary gifts communicated to the apoſtles on the day of Pentecoſt. His ſubſequent activity in preaching the Goſpel to the Jews drew upon him the particular notice of the enemies of the Chriſtian cauſe; and in the year 44, Herod Agrippa, himſelf a Jew, and deſirous of engaging the attachment of the Jewiſh people, cauſed James to be apprehended and to be beheaded with a ſword; thus rendering him the firſt among the apoſtles who became a martyr for Chriſt and his religion. It has been ſaid by Gaſpar Sanctius, and alſo by others, that this James planted the Goſpel in Spain; but this account is inconſiſtent with the hiſtory in the Acts, none of the apoſtles having left Judea ſo ſoon; nor is the opinion founded on the teſtimony of any ancient writer of good credit; and it is now given up, though once defended by Baronius, both by him and other popiſh writers. See the Four Goſpels and the Acts. Lardner's Works, vol. vi.; or Supplement to the Credibility, ch. ix.

James, St. denominated "The Leſs," partly by way of diſtinction from the former, and probably alſo on account of his ſtature, an apoſtle of Chriſt, was the ſon of Alpheus, or Cleophas, and frequently called the Lord's brother. Some ſuppoſe the reaſon of this appellation to have been, that he was the ſon of Joſeph by a former wife; but according to others he was thus called, becauſe his father married Mary, ſiſter to our Lord's mother, ſo that they were in reality couſins; and, therefore, in conformity to the latitude with which the Jews applied the terms brother or ſiſter, they were denominated brethren. That he was an apoſtle is evident from a great variety of paſſages in the New Teſtament, though it does not appear when his deſignation to this office took place. He was honoured by our Lord with a ſeparate interview ſoon after his reſurrection (1 Cor. xv. 7.); he was diſtinguiſhed as one of the apoſtles of the circumciſion (Acts, i. 13.); and ſoon after the death of Stephen, about the year 36, he ſeems to have been appointed preſident or ſuperintendant of the Chriſtian church at Jeruſalem, to have reſided in that city, to have preſided in the council held there in the year 49 or 50, and to have maintained a character which commanded the reſpect of all who knew him, and entitled him to the appellation of "The Juſt." But notwithſtanding the high opinion that was generally entertained of his character, his life was terminated by a premature and violent death. Hegeſippus, cited by Euſebius, has detailed the circumſtances attending it. Having made a public declaration of his faith in Chriſt, the Scribes and Phariſees excited a tumult among the Jews, which began at the temple; or at leaſt they availed themſelves of a general diſturbance, however it might have originated, and demanded of James an explicit and public declaration of his ſentiments concerning the character of Chriſt. The apoſtle, ſtanding on an eminence in the temple, whence he could be heard by the aſſembled multitude, avowed his faith and maintained his opinion, that Jeſus was the Chriſt or expected Meſſiah, and that his doctrine furniſhed ſufficient inſtruction how men might be ſaved. The Jews were exaſperated, and the Scribes and Phariſees, repenting of their conduct in extorting from the apoſtle ſuch a teſtimony to Jeſus, cauſed him to be precipitated from the battlement of the temple upon which he ſtood, and then to be ſtoned, becauſe he was not killed with the fall. St. James, kneeling down, prayed earneſtly to God on behalf of thoſe who were thus maltreating him; but they perſiſted in their violent and ſavage treatment of him, till at length one of them ſtruck him with a long pole, which put an end to his life. According to Hegeſippus, this event happened about the time of the Paſſover, which was probably that of the year 62. At this time Feſtus is ſuppoſed to have been dead, and Albinus his ſucceſſor was not arrived: ſo that the province was without a governor. Such a ſeaſon left the Jews at liberty to gratify their licentious and turbulent diſpoſitions; and they were very likely to embrace it; and we may therefore very reaſonably place this event at that juncture. Of Joſephus's account we have not availed ourſelves, becauſe ſeveral learned men have ſuſpected it to be an interpolation. Biſhop Pearſon, however, who ſeems to admit the genuineneſs of the whole paſſage of Joſephus, placed the death of James in the year 62; and it is now the general opinion among learned men that James died about that time. For an account of the epiſtle addreſſed to the twelve tribes ſcattered abroad, comprehending all Jews both in Judea and out of it, and juſtly aſcribed to the apoſtle James, we refer to the article Epistle. As for other works that have been attributed to him, ſuch as the Πρωτο-ευαγγελιον (Proto-euangelion), inſerted in Greek and Latin in Fabricius's Cod. Apocryph. New. Teſt., and a "Liturgy," bearing his name, they are evidently not of his writing. The former is manifeſtly ſuppoſititious, and the latter bears internal marks that it belongs to a later period than the apoſtolical age. Lardner's Works, vol. vi. or Supplement to Credib. ch. xvi. Cave's Hiſt. Lit. vol. i.

James, a deacon. Bede informs us that, when Paulinus was biſhop of the Northumbrians, his deacon, named James, acquired great fame for his ſkill in the church ſong.

This muſt have been about the year 620, ſoon after the converſion of the Saxons by Auſtin: when Paulinus was tranſlated to Rocheſter, deacon James was left at York, to inſtruct the eccleſiaſtics in the Roman method of chanting.

James I. king of Scotland, of the houſe of Stuart, ſon of Robert III. by Anabella Drummond, was born in the year 1394. In 1405 his father determined to ſend the young prince to France, in order that he might eſcape the dangers to which he was expoſed from his uncle the duke of Albany, but in endeavouring to avoid one peril he fell into another; being taken by an Engliſh cruiſer, he and his whole ſuite were carried priſoners to the Tower of London. Here the young prince received an excellent education, to which Henry IV. of England was remarkably attentive, thereby making ſome atonement for his injuſtice in detaining him. Robert died in the following year, and James was proclaimed king, but during the remainder of the reign of Henry IV. and the whole of that of Henry V., he was kept in confinement, with a view no doubt of preventing the ſtrength of Scotland from being united to that of France againſt the Engliſh arms. At length, under the regency of the duke of Bedford, James was reſtored to his kingdom, having been full eighteen years a priſoner in this country. James was now thirty years of age, well furniſhed with learning, and a proficient in the elegant accompliſhments of life, and dextrous in the manly exerciſes, which at that period were in high eſtimation. He married Joanna Beaufort, a lady of diſtinguiſhed beauty, deſcended from the royal family of England, and on his return to Scotland he had much trouble to reduce the public affairs to order. During the regency of the duke of Albany and his ſon, many of the moſt valuable poſſeſſions of the crown had been alienated, and the licentiouſneſs of the great, ſanctioned by the authority and example of the chiefs, ſeemed to ſet at defiance all reſtraints of law and juſtice. James inſtantly cauſed the whole of the family of Albany and their adherents to be arreſted. The latter were chiefly diſcharged; but the late regent, his two ſons, and his father-in-law, he cauſed to be convicted, executed, and their eſtates to be confiſcated to the crown. Whether theſe proceedings were founded in juſtice cannot now be aſcertained, but it is certain the king himſelf preſided as judge, and as the verdicts in Scotland are decided by a majority of votes, it would ſcarcely be difficult for a judge and a king to obtain his wiſhes whether founded in equity or not. James is alſo charged with entrapping a number of Highland chiefs by hoſpitality, entertaining them in his caſtle, and in the midſt of their hilarity cauſing the gates to be ſhut upon them; a fact which proves that he was not over ſcrupulous in the means of maintaining his authority. His political ability was diſplayed in a leſs exceptionable manner by the enactment of many good laws in his parliaments, which much improved the ſtate of ſociety in the kingdom where they could be executed. His deſire of improving the revenues of the crown led him to many acts of tyranny, which rendered him odious to his nobility. In 1436 he gave his daughter Margaret in marriage to the dauphin of France, and ſent with her a ſplendid train and a vaſt body of troops. The Engliſh, who had in vain attempted to prevent this union by negociation, now endeavoured to intercept the Scotch fleet in its paſſage, but they miſſed their object, and the princeſs arrived in ſafety at Rochelle. James, exaſperated at this act of hoſtility, declared war againſt England, and ſummoned the whole array of his kingdom to aſſiſt in the ſiege of Roxburgh; which, however, he abandoned upon an intimation of a conſpiracy being formed againſt himſelf by his own people. He now retired to the Carthuſian monaſtery of Perth, which he had himſelf founded, where he lived in privacy, which, inſtead of preventing, facilitated the ſucceſs of the plot formed againſt his life. The chief actors in this tragedy were Robert Graham, and Walter, earl of Athol, the king's uncle. The former was actuated by revenge for the ſufferings of ſome of his family, the latter by the hope of obtaining the crown for himſelf. The aſſaſſins obtained by bribery admiſſion into the king's apartments; the alarm was raiſed, and the ladies attempted to ſecure the chamber-door; one of them, Catharine Douglas, thruſt her arm through a ſtaple, making therewith a ſort of bar, in which ſtate ſhe remained till it was dreadfully broken by the force of the aſſailants. The inſtant they got admiſſion they dragged the king from his concealment, and put him to death with a thouſand wounds. He left one ſon and five daughters. James was a poet as well as a ſovereign, and his works, deſcriptive of the manners and paſtimes of the age, became extremely popular, and are ſtill read with delight by thoſe who can reliſh the northern dialect. His private character was amiable, and he poſſeſſed qualities that would have obtained for him high reſpect in any condition; his improvements in the laws and police of his country, and his attempts to aboliſh anarchy, entitle him to reſpect, though in ſome inſtances his eagerneſs for reform led him to tyranny.

James, an accompliſhed but unfortunate prince, is ſaid by all the Britiſh hiſtorians to have been a ſkilful muſician; and it is aſſerted, that he not only performed admirably on the lute and harp, but was the inventor of many of the moſt ancient and favourite Scottiſh melodies. Where this prince acquired his knowledge in muſic is not aſcertained; but it is probable that it was in France, in his paſſage home from which country he was taken priſoner by the Engliſh. Before the Reformation we hear of no muſic being cultivated in Scotland but plain-ſong, or chanting in the church; nor afterwards, for a long time, except pſalmody.

The genuine and ancient Scots melodies are ſo truly national, that they reſemble no muſic of any other part of Europe. They ſeem to have been wholly preſerved by tradition till the beginning of the laſt century, when a collection of Scots ſongs was publiſhed by a Mr. Thomſon of Edinburgh, for which there was a very large ſubſcription; and in February, 1722, a benefit concert was advertiſed for the editor, to be terminated at the deſire of ſeveral perſons of quality, with a Scottiſh ſong. To this publication and concert may be aſcribed the ſubſequent favour of their national, ſingular, and often touching melodies, ſouth of the Tweed.

Taſſoni, indeed, (lib. x. cap. 23.) tells us, that "James I. king of Scotland, had not only compoſed ſacred muſic, but invented a new ſpecies of plaintive melody different from all others; in which he has been imitated by the prince of Venoſa; who," he adds, "in our times has embelliſhed muſic with many admirable inventions." This aſſertion greatly increaſed our deſire to examine works in which ſo many excellencies were concentred; particularly as we had long been extremely deſirous of tracing the peculiarities of the national melodies of Scotland, from a higher ſource than David Rizzio. But in a very attentive peruſal of all the ſeveral parts of the whole ſix books of the prince of Venoſa's madrigals, we were utterly unable to diſcover the leaſt ſimilitude or imitation of Caledonian airs in any one of them; which, ſo far from Scots melodies, ſeem to contain no melodies at all; nor, when ſcored, can we diſcover the leaſt regularity of deſign, phraſeology, rhythm, or, indeed, anything remarkable in theſe madrigals, except unprincipled modulation, and the perpetual embarraſſments and inexperience of an amateur, in the arrangement and filling up of the parts.

Buchanan, among other hiſtorians, has drawn the character

racter of James I. of Scotland at full length; and among many other particulars, mentions his being excellently ſkilled in muſic; more indeed, he adds, than was neceſſary or fitting for a king: for there was no muſical inſtrument on which he could not play ſo well, as to be able to contend with the greateſt maſters of the art in thoſe days. Buch. Rer. Scotic. Hiſt. lib. x. ſect. 57.

And in the continuation of Fordun's Chronicle (Scotichronicon, vol. iv. p. 1323.), is a character of James I. which ranks him equally high as a muſician. And in Hector Boethius is an eulogium upon him, which we ſhall give in the dialect of the country, from the tranſlation of that hiſtorian by Bellenden. "He was well lernet to ficht with the ſword, to juſt, to turnay, to worſyl, to ſing and dance, was an expert muſicinar, richt crafty in playing baith of lute and harp, and ſindry other inſtruments of muſik." This poliſhed and ingenious prince may have added ſome melodies to the tunes of his country, imitating the national ſtyle; but, in general, the old and genuine Scots tunes ſeem ſtill more ancient than even the time of James I., who being a good muſician, had he been the original inventor of melodies, would have made them accord more to the rules of compoſition built on the ſcale of Guido, which was well known all over Europe at the time when this monarch was in exiſtence. And, indeed, however ſingular and pleaſing theſe airs may be, they are drawn from ſo imperfect a ſcale, and ſo frequently begin in one key and end in another, that we cannot help thinking they were produced before the ſcale of Guido was formed. (See OSSIAN.) It ſeems as if national tunes might be called *traditional*, and the general muſic of Europe *cultivated*.

JAMES II. ſon of the preceding, was in his ſeventh year when his father was murdered: this was in the year 1437. The cuſtody of the youthful monarch, and the adminiſtration of government, devolved upon ſir Alexander Livingſton, and the chancellor Crichton, while Archibald, earl of Douglas, and duke of Touraine, was declared lieutenant-general of the kingdom. Diſcord, the natural attendant upon ſuch a government, aroſe among theſe great men, and the affairs of the nation fell into diſorder. Crichton and Livingſton were perpetually at variance, till the deſire of freeing themſelves from earl Douglas produced a reconciliation between them. They invited him, his brother, and his chief confidant to Edinburgh, and while ſitting at a ſumptuous dinner, they were all three ſeized at the royal table, and were immediately murdered. Lord Douglas's ſon, within three years of this cataſtrophe, procured the proſcription of Livingſton and Crichton, his own family he reſtored to all their former dignities, and the principal offices of the ſtate were given to his friends and relations. In 1449 James was married to Mary, daughter of the duke of Guelderland, and almoſt as ſoon as he could be ſaid to act for himſelf, he began to be jealous of the vaſt power and influence of the Douglas family. The earl, aware of his own danger, negociated an aſylum at the court of England, and at the ſame time entered into a bond with the earls Crawford and Roſs, and other noblemen, mutually to ſupport each other againſt their common adverſaries. The knowledge of theſe facts was ſoon communicated to the king, who ſummoned the earl to his court. The haughty lord refuſed to comply till he ſhould be aſſured of protection under the great ſeal. The form was readily complied with, but it was no ſafeguard againſt the meditated treachery. James received him with apparent cordiality, and invited him to ſupper. After the repaſt, he demanded of his gueſt the bond entered into with the earls of Crawford and Roſs; this he nobly refuſed, and the king with his own hand ſtabbed him. From this period James was perpetually harraſſed by attempts made againſt his peace by the earl's family, and in 1456 a rebellion was excited by Donald, lord of the iſles, in connection with an invaſion from the Engliſh. He defeated his enemies, and in his turn, in 1460, reſumed hoſtilities, and laid ſiege to Roxburgh caſtle. Here he was killed by the accidental burſting of a piece of artillery. He was then in the prime of life, being not quite thirty years of age. He had already ſurmounted the difficulties which ariſe from youth and from violence of temper, to which he was ſubject, but which he had ſubdued, and there was every proſpect of a wiſe and proſperous reign. He left left three ſons and two daughters.

JAMES III. king of Scotland, ſucceeded to the crown when he was only eight years old, on the death of his father in 1460. The care of his perſon was given to his mother, while the chief management of the government devolved on lord Evandale, the chancellor, and James Kenedy, biſhop of St. Andrews. The death of the good prelate, in 1466, proved a public misfortune, by delivering the young king into the power of flattering and mercenary courtiers. In 1468 a marriage was contracted between James and Margaret, daughter to Chriſtiern I. king of Sweden, Denmark, and Norway. For the marriage portion, the Orkney and Shetland iſles were pledged, and they ever after remained under the dominion of Scotland. This marriage took place in July, 1469, and James took upon himſelf the reins of government. His character, as it opened, diſplayed weakneſs, indolence, and caprice: he had an attachment to literature and the fine arts, as they were then underſtood; his mind was, however, unfortunately biaſſed towards deſpotiſm, but accompanied with lenity. He was eſteemed pious and devout, but did not ſcruple indulging his avarice by alienating eccleſiaſtical benefices to laymen. In 1477 an unhappy quarrel took place between the king and his two brothers, the duke of Albany and the earl of Mar: the former made his eſcape from the Edinburgh caſtle in which he was confined, but the earl of Mar was accuſed of employing magical practices againſt the king's life: of this crime he was convicted and made a cloſe priſoner, in which ſituation he ſhortly died, but whether by a fever or by more violent means is not known. The king gave great offence to his nobility, by ſelecting as his favourite and chief confidant, Cochrane, a maſon and architect, whom from that ſtate he elevated to the vacant earldom of Mar. During an invaſion of the Engliſh, which James endeavoured to repel, Cochrane was ſeized and hanged, and the king himſelf made priſoner by his own nobles. The Engliſh proceeded as far as Edinburgh, when an accommodation took place; the king was liberated and reſumed the reins of government. Some ſucceeding years were marked with little elſe than miſgovernment on the part of the king, and progreſſive diſcontents among the nobles; till in 1488, a confederation of the great broke out into open rebellion, the objects of which were to dethrone and impriſon James, and place his ſon on the throne. After various attempts at pacification, in which the king ſhewed an evident unwillingneſs to ſhed the blood of his people, he reſolved to commit his fortune to the deciſion of a battle, from which he was obliged to ſeek ſafety by flight; in croſſing a rivulet his horſe ſtarted and threw him; though ſtunned he was not dangerouſly hurt, and was carried by his attendants to a neighbouring mill, where ſome of his enemies, recognizing his countenance, cruelly murdered him. He left three ſons.

JAMES IV. was in his ſixteenth year when he was forced into a conteſt with his father, and whoſe murder elevated him to the crown in 1488. Though urged by the ambition of his nobles to the unnatural ſtep of open rebellion, he did not eaſily forgive himſelf the ſteps which he had taken. One of his firſt feelings after he had aſcended the throne, was remorſe for his unfilial and diſloyal conduct, and it is ſaid, that as there was no ſuperior earthly tribunal to which he was amenable, he condemned himſelf to wear an iron chain round his body as a puniſhment which he had juſtly incurred, and that he added a new link to its weight for every ſucceeding year of his life. The victorious barons, leſs ſcrupulous with regard to the bloody deed in which they had been engaged, were anxious only for ſecurity for the future; and obtained a declaration in parliament of their innocence with reſpect to the late king's death, and other ſlaughters, which were imputed to his own perverſeneſs and deceit; and a ſubſequent parliament in 1490 was inſtrumental in healing the feuds and animoſities of parties, and reſtoring internal tranquillity. The king contributed much to this deſirable end by the impartial adminiſtration of juſtice. The qualities of his mind and heart were well calculated to obtain for him the reſpect and attachment of his people in every ſituation and rank of life. For many years he maintained a ſtrict peace with Henry VII. of England, till at length he offended that monarch by adopting the cauſe of Perkin Warbec, who came ſtrongly recommended to him by the court of France. War was excited on this account for a ſhort time, but the love of peace, which was ever uppermoſt in the mind of Henry VII. ſoon put an end to all national differences. Though James, on this reconciliation, abandoned the cauſe of Perkin, he had too high a ſenſe of honour to give him up. In 1503 he married Margaret, the daughter of Henry, an event which, in the iſſue, produced the union of the two kingdoms under one crown, though at the diſtance of two centuries from this marriage. In ſubſequent parliaments James cauſed ſeveral very uſeful laws to be enacted which led to the improvement of the country, nor was he leſs anxious to render Scotland reſpectable with regard to foreign potentates. In the reign of Henry VIII. he was engaged in warfare with England: after ſeveral predatory incurſions from both parties, James entered England at the head of a hundred thouſand ſoldiers, and made himſelf maſter of many caſtles and other ſtrong holds. At one of theſe he formed an attachment to a lady of exquiſite charms, the power of which he could not reſiſt. He forgot the importance of time to the career of his army, and remained ſeveral days in a ſtate of inactivity, during which, from a concurrence of unfortunate circumſtances, his vaſt army was reduced by deſertion to leſs than thirty thouſand. Theſe, diſpirited by the conduct of their king, were brought to contend with an almoſt equal number at Flodden Field, in Northumberland, under the earl of Surrey. The battle was fought on the 9th of September, 1513: prodigies of valour were diſplayed on both ſides; the king rallied his troops again and again, as if aſhamed of the amours which had brought him into ſuch a ſtate of peril; he was determined to ſhew himſelf the man and the hero; wherever there was moſt danger, there was James, till he fell mortally wounded; this circumſtance, and the darkneſs of the night, put an end to the conflict. With the monarch were ſlain his natural ſon, the archbiſhop of St. Andrew's, twelve earls, and a multitude of the higheſt rank among the nobility and gentry of the kingdom. Scotland, ſays the hiſtorian, can reckon few more fatal days than that of Flodden Field. The body of the dead king fell into the hands of the conquerors, who carried it to the monaſtery of Sheene, near Richmond, where it was interred. James IV. was ſlain in the forty-firſt year of his age, and the twenty-ſixth of his reign. He was ſucceeded by

JAMES V. his ſon, an infant not two years old. His minority paſſed in that contention of parties which commonly attended ſuch a period in Scotland. When, however, he arrived at an age to be allowed to manage the affairs of government, his character diſplayed itſelf in decided features. In his youth he had witneſſed the diſorders which a powerful and lawleſs ariſtocracy had inflicted upon his people, and he was now the conſtant and determined foe of the nobility. While he depreſſed the powerful, he raiſed and favoured the low, ſo as to obtain and merit from his people the appellation of "King of the Poor." No object was nearer to James's heart than the ſuppreſſion of thoſe bands of freebooters whom the licence of the times had ſuffered to range uncontrolled in the remote parts of the country. He even expoſed his perſon in expeditions againſt theſe marauders, whom he treated with unrelenting rigour. After reducing the borders and highlands to order, James paid a viſit to the iſles of his dominions, and held courts of juſtice in the Orkneys and Hebrides, to the terror of the tyrannical chieftains of thoſe regions. In 1537 he married the ſiſter of the king of France, who lived but a few months. In the ſame year he incurred the ſtain of cruelty in cauſing the ſon of lord Forbes to be beheaded for treaſon upon very ſlight and unſatisfactory evidence, and ſtill farther by the burning of the beautiful and heroical lady Glamis, ſiſter of the earl of Angus, for the imaginary crime of witchcraft practiſed on his own perſon. James had contracted a partiality for the French court, and married for a ſecond wife Mary, daughter of the duke of Guiſe, an union which probably enforced his propenſity to ſevere meaſures againſt the Proteſtants, who began to appear in great numbers in Scotland, and of whom ſeveral nobly ſuffered death in defence of their opinions. Henry VIII. was deſirous of joining James with himſelf in oppoſing the pretenſions of the Roman ſee, and ſent an embaſſy into Scotland to perſuade him to enrich himſelf with the ſpoils of the monaſteries. In ſome reſpects James was willing to liſten to the propoſals of the Engliſh monarch, but French influence was too powerful, and he afterwards ſent an excuſe to Henry for the breach of his engagement, which provoked that prince ſo much, that it was imagined a war between the two kingdoms would enſue. Hoſtilities were actually commenced, and James was urged, as well by the king of France as by his own clergy, to purſue ſome advantages, which he at firſt gained, into the enemy's country; but his army were evidently ill affected to their monarch, remonſtrated againſt the deſign, and in the event of an attack ſome time after, ſuffered themſelves to be taken priſoners, or deſerted from their colours without a ſtruggle. James, already depreſſed by the loſs of his two infant princes, was now overwhelmed with anguiſh, ſhame, and deſpair. He retired to Falkland, and ſhewed every ſymptom of declining health. So loſt was he to any thing that might intereſt his feelings, as a man or ſovereign, that when news was brought him of the birth of a daughter, he took no other notice of the event than to ſay, "The crown came with a girl, and will go with a girl." He expired December 14, 1542. The reader is referred for farther information relating to the foregoing kings of Scotland, to Pinkerton's hiſtory of that country, and to Henry's Hiſtory of Great Britain.

JAMES I. of England, and the VIth of that name of Scotland, was ſon of Mary, queen of Scotland, by her couſin Henry, lord Darnley. He was born at Edinburgh caſtle in June, 1566, at the exact time when his mother was at open variance with her huſband, and had fixed her affections on the earl of Bothwell. The young prince was committed to the charge of the earl of Mar, who with much fidelity did his duty, and kept him out of the hands of Bothwell. In the following year Mary was forced to reſign the crown, which was placed on the head of her infant ſon. He was ſolemnly crowned at Stirling, and thenceforth all public acts ran in his name. He was educated by the celebrated

Buchanan while he was at Stirling caſtle; his progreſs in ſchool-learning was rapid, and he manifeſted talents which preſaged the future great man: but he became the prey of flatterers, who inſtilled into his youthful mind the moſt pernicious maxims of the plenitude of regal authority, and urged him to unpopular meaſures, which in 1582 produced a conſpiracy of the nobles againſt him, who took poſſeſſion of his perſon at Ruthven caſtle. From thence he was conveyed to the palace of Holyrood-houſe, and treated with much external reſpect, while in reality he was held in the utmoſt reſtraint. A new confederacy of other nobles produced his liberation, and he put himſelf under the ſway of his favourite the earl of Arran, who was violent and unprincipled, and who carried on meaſures of ſeverity againſt the nobles of the former conſpiracy, and againſt the clergy who favoured them. He contrived to engage the mind of the young king with a conſtant round of amuſement, and he himſelf exerciſed with unlimited ſway all the regal authority, and by his inſolence and rapacity rendered himſelf univerſally odious. Queen Elizabeth of England had long employed her arts to maintain a party in the country, which policy was become more neceſſary on account of her conduct to its queen. Though James had hitherto been induced to treat his mother very irreverently, yet when her life appeared to be in imminent danger, from the ſentence pronounced againſt her by an Engliſh court of judicature, he felt himſelf bound to interfere, and wrote a menacing letter to Elizabeth on the occaſion. He alſo applied to other courts for their aſſiſtance, and aſſembled his own nobles, who promiſed to ſtand by him in preventing or avenging ſuch an injuſtice. When he learned the fatal cataſtrophe, he rejected with a proper ſpirit of indignation the hypocritical excuſes of Elizabeth, and ſet about preparations for hoſtilities, but cooler reflection on his own reſources, which were inadequate to the purpoſes of carrying on a ſerious war, and reflecting alſo on the neceſſity he was under of keeping on terms with England to ſecure his ſucceſſion to the crown, of which he was the preſumptive heir, he reſolved to reſume a friendly correſpondence with the Engliſh court. It is to the honour of James that one of the firſt acts of his full majority, in 1587, was an attempt to put an end to all family feuds among the nobility, and perſonally to reconcile them with each other at a ſolemn feſtival in Holyrood-houſe. When the invaſion of England was reſolved upon by Philip, king of Spain, he put his kingdom into a ſtate of defence, reſolving to ſupport the queen againſt her enemies. His people alſo were zealous for the preſervation of Proteſtantiſm, and entered into a national bond for the maintenance of true religion, which was the origin and pattern of all future engagements of the kind, under the name of ſolemn leagues and covenants. After the glorious defeat of the Armada, Philip, in revenge of the conduct of James, ſtirred up a conſpiracy of ſome Popiſh lords in his kingdom, which was diſcovered by Elizabeth, and when it broke out into open rebellion, was inſtantly cruſhed by the king at the head of a body of troops. The conſpirators were treated with lenity, which James ever ſhewed towards the Catholics, and which brought the ſincerity of his own profeſſed faith into queſtion, though it probably proceeded partly from mildneſs of temper, and partly from timidity. Though he was probably ſatisfied of the errors of popery, he was fond of the ſplendour of eccleſiaſtical hierarchy, and bore a rooted antipathy to the republican model of Preſbyterianiſm.

In the year 1589 he married Anne, daughter of Frederic, king of Denmark, and as contrary winds prevented her coming to Scotland, he went to fetch her, and having conſummated the marriage, he paſſed the winter in a ſeries of feaſting and amuſements at Copenhagen. On his return he was frequently in danger from conſpiracies againſt his life, particularly from thoſe excited by the earl of Bothwell. In the year 1600, while the country was in a ſtate of unuſual tranquillity, a very extraordinary event took place, the nature and cauſes of which were never diſcovered. While the king was upon a hunting excurſion, he was accoſted by the brother of Ruthven, earl of Gowrie, who, by a feigned tale, induced him and a ſmall train to ride to the earl's houſe at Perth. Here he was led to a remote chamber on pretence of having a ſecret communicated to him, where he found a man in complete armour, and a dagger was put to his breaſt by Ruthven, with threats of immediate death. His attendants were alarmed and came to his relief; in the end Gowrie and his brother were ſlain, and the king eſcaped unhurt. As Elizabeth advanced in age, the Engliſh nation began to look with more confidence to James as their future king, and many perſons of conſequence held a ſecret correſpondence with him on the ſubject. In 1603, on the death of the queen, James was proclaimed her ſucceſſor. He took an affectionate leave of his countrymen, and proceeded, amidſt the acclamations of his new ſubjects, to London. One of his firſt acts was to beſtow a profuſion of honours and titles upon the great men, as well of his own country as thoſe of England. Within a very ſhort period, and at a time of apparent general tranquillity, a conſpiracy was diſcovered for ſubverting the government and raiſing to the throne Arabella Stuart, a near relation of the king's, by the family of Lenox, and deſcended equally from Henry VII. "Every thing," ſays Hume, "remains ſtill myſterious in this conſpiracy, and hiſtory can give us no clue to unravel it." The principal actors in it were lord Grey, a Puritan; lord Cobham, a thoughtleſs man, of no fixed principle; and ſir Walter Raleigh, a philoſopher, and ſuppoſed to be a freethinker. What cement could unite men of ſuch diſcordant principles in ſo dangerous a combination; what end they propoſed, or what means they had proportioned to an undertaking of this nature, have never yet been explained, and cannot eaſily be imagined. A conference held at Hampton-court in 1604, between the divines of the eſtabliſhed church and the Puritans, afforded James a good opportunity of exhibiting his ſkill in theological controverſy, and the ill will he bore to popular ſchemes of church-government. Although the king had diſtinguiſhed himſelf in his own country by lenity to the Roman Catholics, yet thoſe of that religion in England were ſo much diſappointed in their expectations of his favour, that a moſt atrocious plot was formed by the zealots of that party to blow up the houſe of lords at the firſt meeting of parliament, and with it the king, queen, and prince of Wales, and all the principal nobility and gentry of the kingdom, and then to ſet upon the throne the young princeſs Elizabeth, and eſtabliſh the Catholic religion. This plot was fortunately diſcovered on the eve of the deſigned execution, and the principal perſons in it ſuffered the puniſhment due to their crimes. In 1611 he remonſtrated with the Dutch ſtates, on account of their permitting Armenius Vorſtius to hold a profeſſorſhip in one of their univerſities. He was deemed by James a heretic, and he carried his point in getting him removed. His next object was to reduce Ireland to a ſettled form of law and government. In 1612 a putrid fever carried off his ſon Henry, a prince who was, on account of his many promiſing virtues, the hope and darling of the nation: and in the following year the princeſs Elizabeth was married to Frederic, elector palatine.

We do not pretend in theſe biographical ſketches to enter into the minutiæ of each reign, nor to record all the tranſactions that relate to the prince himſelf, but we muſt not omit to mention the odium which James brought on himſelf by patroniſing his favourite Robert Carr, who, in proſecution of his laſcivious deſigns, was guilty of the moſt atrocious acts. No circumſtance, however, in James's reign was more unpopular than his treatment of the celebrated ſir Walter Raleigh; after the detection of the conſpiracy already referred to, he was tried and capitally convicted, but being reprieved, he was kept thirteen years in priſon. In 1615 he obtained by bribery his releaſe from priſon, but the king would not grant him a pardon. He went out on an expedition with the ſentence of death hanging over his head; he was unſucceſsful in his object, and on his return the brutal king ordered him to be executed on his former ſentence. (See Raleigh.) James is ſuppoſed to have been more influenced to this deed by the court of Spain than by any regard to juſtice. The influence of that court on James appeared ſoon after in his negociations for marrying his ſon prince Charles to the infanta. The object was, however, not attained, and he afterwards married him to the French princeſs Henrietta, with the diſgraceful ſtipulation, that the children of that marriage ſhould be educated by their mother, a bigotted papiſt, till they were thirteen years of age. As he advanced in years he was diſquieted by a concurrence of untoward circumſtances. The diſſentions of his parliament were very violent, and the affairs of his ſon-in-law, the elector palatine, now king of Hungary, alſo were in a very diſaſtrous ſtate. He had undertaken the cauſe of the Proteſtants of Germany, but inſtead of being the arbiter in the cauſe of others, he was ſtripped of his own dominions. In his defence, James declared war againſt the king of Spain and the emperor, and ſent troops over to Holland to act in conjunction with prince Maurice for the recovery of the palatinate; but from miſmanagement, the greater part of them periſhed by ſickneſs, and the whole enterpriſe was defeated. Oppreſſed with grief for the failure of his plans, the king was ſeized with an intermitting fever, of which he died in March 1625. He left two children, Charles, his ſucceſſor, and Elizabeth, the wife of Frederic. It would be difficult, ſays Hume, to find a reign leſs illuſtrious, yet more unſpotted and unblemiſhed, than that of James in both kingdoms. James poſſeſſed many virtues, but ſcarcely any of them pure or free from the contagion of neighbouring vices. His learning degenerated into pedantry and prejudice, his generoſity into profuſion, his good nature into pliability and unmanly fondneſs, his love of peace into puſillanimity, and his wiſdom into cunning. His intentions were juſt, but more adapted to the conduct of private life than to the government of kingdoms. He was an ecourager of learning, and was himſelf an author of no mean genius, conſidering the times in which he lived. His chief works were "Baſilicon Doron:" and "The true Law of free Monarchies;" but he is more known for his adherence to witchcraft and demoniacal poſſeſſions in his "Demonology," and for his "Counterblaſt to Tobacco." Hume's Hiſt. Robertſon's Hiſt. of Scotland.

The acceſſion of James to the crown occaſioned no immediate benefit to ſcience or refinement in the polite arts; as the country he quitted was ſtill leſs poliſhed than that in which he arrived. Nor does it appear that this prince, either from nature or education, was enabled to receive any pleaſure from muſic; however, early in his reign, the gentlemen of his chapel, aſſiſted by the influence and ſolicitation of ſeveral powerful noblemen, who pleaded their cauſe, ſeverally obtained an increaſe of ten pounds to their annual ſtipend.

An entry is made of this event in the cheque-book of the Chapel Royal, ſigned, not only by five of the great officers of ſtate, but by the ſubdean, chaplains, and gentlemen of the chapel then living.

Among theſe petitioners there is but one name, that of Edmund Hooper, which ever appears afterwards in the liſts of muſicians eminent for compoſition or performance, except Bird, Bull, and Gyles, who had diſtinguiſhed themſelves in the preceding reign.

Anthems, maſques, madrigals, ſongs, and catches, ſeem to compriſe the whole of our vocal muſic for the church, the ſtage, and the chamber, at this time. And with reſpect to inſtrumental productions under the title of "Fancies, &c." as they were chiefly compoſed for lutes and viols, which are now laid aſide, if they had been replete with genius and learning, juſtice could not have been done to them in the performance. Luckily the chief part of them are of ſo artleſs and inſipid a kind, that no loſs would accrue to judicious and reaſonable lovers of muſic by their utter annihilation.

Elway Bevin and Orlando Gibbons were the beſt, and almoſt the only good compoſers during the reign of James I. if we except thoſe which the reign of queen Elizabeth had produced, and who embelliſhed during a few years her ſucceſſor's reign. See Bevin, and Orlando Gibbons.

James II. king of England, and the VIIth of Scotland, ſecond ſon of Charles I. by Henrietta of France, was born in October 1633, and immediately declared duke of York. (See Charles I. and II.) After the capture of Oxford by the parliament army in 1646, he was carried to London, and placed under the care of the duke of Northumberland, but in 1648 he contrived to make his eſcape, and in the following year joined his mother at Paris. At the age of twenty he ſerved in the French army under the celebrated Turenne, and acquired a great reputation. He afterwards entered into the Spaniſh army in Flanders, under the prince of Condè, and thus he advantageouſly paſſed his exile in acquiring military experience, and the reputation of ſpirit and prowеſs ſuited to his birth. At the reſtoration of his brother, James took the command of the fleet as high-admiral; and he was married to Anne Hyde, daughter of lord Clarendon. (See Hyde.) Maritime and commercial affairs engaged the duke's attention, and he was at the head of an African company, when, in 1664, he took a part in promoting a Dutch war for the ſuppoſed intereſts of trade. He had been made commander-in-chief of a powerful fleet, and obtained a ſignal victory over the Dutch under admiral Opdam. Opdam's own ſhip was blown up in the action, and nineteen of his fleet were ſunk or taken, with the loſs of a ſingle veſſel on the part of the Engliſh. The duke was in the thickeſt of the fight, and three of his friends, men of high rank, were killed by his ſide. The conduct of Brounker, his gentleman of the bed-chamber, brought ſuſpicion on the duke. Without the knowledge of his maſter, and while he was aſleep, this man gave orders to ſlacken ſail, though in purſuit of the enemy; but as he was not puniſhed for his orders, nor even diſmiſſed from his office till the matter was agitated in the houſe, the duke himſelf was accuſed by his enemies of being privy to the orders iſſued by his ſervant. After this he had no farther ſhare in the naval actions of that war. In 1671 the ducheſs of York died, leaving two daughters, Mary and Anne, who came to be ſucceſſively queens of England. Before her deceaſe ſhe openly declared herſelf a convert to the Roman Catholic religion, which had been ſecretly that of the duke many years, and was now openly avowed by him. In the Dutch war of 1672, the duke of York was again placed at the head of the fleet, a furious engagement enſued, in which the earl of Landwick, who was ſecond in command, was blown up, and the duke's own ſhip was ſo much ſhattered, that he was obliged to ſhift his flag to another. At length the Dutch retired, and were not purſued, the loſs being nearly equal on both ſides. By an act of parliament, papiſts were now excluded from all public employments, and the duke was obliged to reſign his command. (See TEST *Act.*) After this he uſed every endeavour to introduce the Catholic religion into England. In 1677 the duke's eldeſt daughter, Mary, was married to the prince of Orange, an alliance which gave univerſal ſatisfaction to the nation. Both Mary and Anne had been brought up in Proteſtant principles, to which they ſtedfaſtly adhered. During the proceedings occaſioned by the ſuppoſed Popiſh plot, the duke of York, in 1679, by his brother's advice, withdrew to Bruſſels. A bill was afterwards brought in and carried through the houſe of commons to exclude the duke from the ſucceſſion to the throne; it was, however, rejected by the lords. In 1681 he was ſent to Scotland to hold a parliament as king's commiſſioner; but his conduct on this occaſion expoſed him to the imputation of cold unrelenting tyranny, and the manner in which he treated the remnant of the covenanters was cruel in the extreme. Having returned to London, he ſet out for Scotland a ſecond time, but the frigate in which he embarked ſtruck upon a ſand-bank off the coaſt and was loſt. The duke eſcaped in a barge, and is ſaid to have ſhewn more anxiety to ſave his dogs and his prieſts, than ſeveral perſons of quality who were with him, and who were left to periſh. Among thoſe who were preſerved on this occaſion was Churchill, afterwards the illuſtrious duke of Marlborough, at that period one of the duke's favourites. During the remainder of Charles's reign, the duke had much influence in government, and was forward in promoting all the ſevere meaſures which were acted at that period. More than once the king felt himſelf called on to check his impetuous rigour, warning him of the probable conſequences of ſuch raſhneſs. "Brother," ſaid he on a particular occaſion, "I am too old to go again on my travels; you may if you chooſe it." At this time the king was meditating ſome important changes in public meaſures; he had formed the plan of a new adminiſtration, reſolved to diſmiſs thoſe ſervants who were hated by the people, and to throw himſelf entirely on the good will and affections of his ſubjects; but amidſt theſe truly wiſe and virtuous deſigns, he was ſeized with a fit, which carried him off in a few days, leaving his brother in poſſeſſion of the crown and kingdom. From the moment of his ſucceſſion to the throne, James ſeems to have purſued with ſteady determination two objects, *viz.* of rendering himſelf abſolute, and of introducing the Roman Catholic religion into his dominions. He began his career in government by going openly, with the enſigns of his dignity, to maſs, though at that time it was an illegal meeting. He alſo ſhewed an intention of carrying the prerogatives of the crown as high as poſſible, and beyond the true conſtitutional limits. A rebellion, excited in favour of the duke of Monmouth, the late king's natural ſon, ſhewed the temper of James in its true light. The ſtability of his throne would have been ſtrengthened by the ſuppreſſion of this rebellion, had not the ſeverity of his meaſures produced a hatred which was greater than the terror which it inſpired. Monmouth paid his life as the penalty of his futile attempt. Of his followers many were put to death on the field, when they had no means of reſiſtance in their power, and not a few ſuffered in cold blood by martial law with circumſtances of ſavage brutality. As if not ſatisfied with the ferocity of his ſoldiery, James called to his aſſiſtance, in the bloody work, the more ferocious and ſuperlatively cruel Jefferies, whoſe name has been unanimouſly conſigned to perpetual infamy. This judge was ſent down with a ſpecial commiſſion, in the exerciſe of which he diſplayed the moſt brutal and unrelenting rigour, and filled the towns of the weſtern parts of our iſland with mourning and conſternation. James declared his approbation of Jefferies' proceedings, by raiſing him on his return to the peerage and the chancellorſhip. (See JEFFERIES.) Theſe meaſures ſtruck the nation with terror, and the king was allowed to follow his own courſe without oppoſition from the people or parliament. All idea of reſiſtance to arbitrary power might have been loſt, had not James purſued with impolitic haſte his deſigns of introducing popery, which excited all the religious zeal of the general body of Proteſtants, and brought their united force into action. He hoped to lull their apprehenſions by a declaration in favour of liberty of conſcience, but they ſoon ſaw that this was intended ultimately for the benefit of the Catholics only. He attacked the eſtabliſhed church, and appointed a commiſſion, which cited before it all clergymen who had done any thing to diſpleaſe the court. The rights of the univerſities were invaded, and in particular, a mandate was iſſued to Magdalen college, Oxford, commanding the election of a man as preſident, who had ſhewn a diſpoſition to become a Catholic. The king next publiſhed a declaration of indulgence in matters of religion, which was ordered to be read by the clergy in all the churches in the kingdom. Seven biſhops met and drew up a humble and very loyal petition againſt this ordinance. For this act they were committed to the Tower, proſecuted for ſedition, and brought to a ſolemn trial, but no efforts of the court could procure a verdict againſt them; they were acquitted, and the jury who pronounced them "Not Guilty," were hailed as the ſaviours of the country. The general rejoicing on this occaſion extended to the regiments encamped at Hounſlow, and indeed to almoſt the whole of the army. James had already ſent an embaſſy to Rome, in order to reconcile his kingdom to the holy ſee, and the birth of a ſon and heir at this time ſupported his confidence, but ſo unpopular was he become, that a general perſuaſion prevailed that a ſuppoſititious child was obtruded on the nation. The dangers which now threatened the liberties and religion of the country produced an union of parties, and many of the nobility and gentry concurred in an application to the prince of Orange, ſtadtholder of the United Provinces, and the king's ſon-in-law for aſſiſtance. William liſtened to the prayer of their petitions, and prepared with great ſecrecy a fleet and an army for the invaſion of the country. James was now ſenſible of his errors, and would gladly have retrod his ſteps, but it was too late. All confidence between him and the people was at an end, and his conceſſions were regarded as tokens of fear, not as evidences of contrition. The prince arrived in ſafety at Torbay, and landed on the 4th of November, 1688. The royal army began to deſert by whole companies and even regiments; and the king, deſerted by his ſubjects, and having for his opponent his own ſon-in-law, found it adviſable to retire. His beſt friends, as he thought them, abandoned his cauſe; and his daughter Anne, married to prince George of Denmark, put herſelf into the hands of the inſurgents. When news of this fact was brought to him, he exclaimed in an agony of grief, "God help me! my own children have forſaken me." He now ſought for ſafety in a foreign country, leaving the public affairs in the greateſt confuſion. He repaired to St. Germains, where he was received with the greateſt kindneſs and hoſpitality by the French king Louis XIV. (See WILLIAM.) In the following year, James was enabled by the monarch of France to make a trial for the recovery of Ireland, where the Catholics poſſeſſed the chief power. He ſoon became maſter of the whole iſland, excepting part of the north. He failed in the ſiege of Londonderry, and returning to Dublin held a parliament. He ſoon renewed the moſt violent meaſures againſt the Proteſtants, which ſhewed that his diſpoſition, and the principles on which he meant to govern, had undergone no radical change. At length William, who had been appointed his ſucceſſor, landed with an army in Ireland, and the deciſive battle of Boyne was fought in June 1690. In this action, ſo important to his intereſt, James kept aloof, and when the fortune of the day went againſt him, he returned to France. All his other attempts at reſtoration to the crown of theſe realms were futile, and he ſpent the latter years of his life in the practice of devotion. He died at St. Germains in September 1701. His ſon James, commonly known under the title of "The Pretender," died at Rome in 1766; his ſon Charles Edward, who invaded Scotland in 1745, died in 1788, and Henry Benedict, cardinal of York, who for ſome years was ſupported by this country, is now dead, and he was the laſt ſurviving branch of this unfortunate race. Hume. Rapin.

James was too gloomy and bigotted a prince, during the latter part of his life, to have ſpirit or leiſure for cultivating or encouraging the liberal arts; nor, indeed, does he ſeem to have revolved any other idea in his mind, than the romantic or impracticable plan of converting his three kingdoms to the Catholic faith. And his ſubjects ſeem to have been in ſuch a ferment during his ſhort reign, that nothing, which deſerves to be recorded, was atchieved by any of them, except the wreſting from him that power he abuſed, This remark is not made without recollecting that Newton publiſhed his Principia, and Locke finiſhed his "Eſſay on Human Underſtanding," while this prince ſat on the throne; but it can never be imagined that during ſo ſhort and turbulent a reign, two works which exalt human nature more perhaps than any which the longeſt reigns upon record ever produced, could have been brought to maturity. Indeed, Purcell, who had ſo much diſtinguiſhed himſelf in the former reign, does not appear by the date or occaſion of his exertions, to have produced any particular anthem, ode, or drama, for the church, court, or ſtage, from the death of Charles II. his firſt royal maſter, till after the Revolution, except the anthem "Bleſſed are they that fear the Lord," which he compoſed by order of the court in 1687, as a thankſgiving for the queen's pregnancy.

James I. king of Arragon, born about the year 1207, was ſon of Peter II. who was ſlain in 1213. On the death of his father James was ſolemnly proclaimed, but his country was for ſome years the prey of diſturbances uſually incident to a people governed by a regency. This youth ſhewed early ſigns of a great and heroic mind: at the age of twelve, he put himſelf at the head of a body of troops, in order to reduce a ſubject who had raiſed the ſtandard of rebellion, and the young king returned ſucceſsful from the expedition. In 1221 he was married to the infanta Leonora of Caſtile, but in a ſhort time his uncle, Don Ferdinand, contrived to get the king and his wife into his poſſeſſion. James made his eſcape, and a ſeries of inteſtine diſorders took place till he became maſter of his kingdom, when he was about twenty years of age. He now performed many exploits which proved his valour and wiſdom, but his great object was to annex to his dominions the kingdom of Valencia, which was ſubject to the Moors, whom he had already driven from the iſland of Majorca. For this purpoſe he ſolicited a bull of cruſade from the pope Gregory IX., which was granted, but as a condition he was obliged to permit ſevere canons againſt hereſy and reading the ſcriptures to be enforced in his dominions, and the Inquiſition to be introduced into Arragon. He made himſelf maſter of Valencia, and expelled the Moors, who retired into the neighbouring kingdoms of Granada and Murcia, and into Africa. Though generally ſucceſsful in his projects of ambition, he paſſed a troubled and agitated life. In 1268, as an atonement for his repeated failings, he took the croſs and embarked for the Holy Land, but being driven by ſtorm into a port of France, he returned without accompliſhing his purpoſe. In 1276, the oppreſſed Moors broke out in open rebellion, and defeated an army ſent out againſt them. This diſaſter, which he had not contemplated, had ſuch an effect upon the mind of the king, that he fell ſick, reſigned his crown in favour of his ſon Pedro, and took the habit of a Ciſtercian monk. He died in the ſame year at the age of ſixty nine. To his ſecond ſon James he left the kingdom of Majorca, and every thing which he poſſeſſed in France. Mod. Univ. Hiſt.

James II. king of Arragon, ſurnamed the *Juſt*, ſon of Peter III., was born in 1261. He was king of Sicily in right of his mother, at the death of his elder brother Alphonſo III. in 1291, whom he ſucceeded to the throne of Arragon. He was perſuaded to renounce his rights on Sicily, but his mother and brother Ferdinand were reſolved to hold the iſland by force. James ſet about reducing Alicant and Murcia, in which he ſucceeded, and afterwards viſited Rome, where he was urged by the pope to make war upon his brother Ferdinand in order to expel him from Sicily. After a feeble attempt for this purpoſe he gave up the cauſe from an impreſſion of its injuſtice. When the perſecution broke out againſt the knights' templars, James, unlike the other ſovereigns of Europe, refuſed to concur in ſevere meaſures againſt them, ſaying, "We muſt firſt be convinced of their guilt, and it will be then time enough to think of their puniſhment." He even protected and maintained thoſe who had been driven from other countries. In conjunction with the king of Caſtile, he made an expedition in 1308 againſt the Mooriſh king of Granada, merely on account of their religious differences. This enterprize was unſucceſsful, and both kings retreated to their own dominions. After this and another expedition againſt the pirates of Tunis, he turned his attention to improvements in his own country, and the aggrandizement of his family by matrimonial alliances. He compelled his eldeſt ſon to marry Eleonora of Caſtile. The prince, however, immediately quitted his wife, and deſired at the ſame time to renounce all right and title to the ſucceſſion of his father's kingdom, a favour which was granted him, and in the aſſembly of the ſtates he took an oath of fealty to his next brother. At the ſame aſſembly, Arragon, Catalonia and Valencia were united, and the union declared inſeparable. James died in the year 1326, greatly regretted by his ſubjects, to whom he was endeared by the equity and moderation of his meaſures. Mod. Univ. Hiſt.

James de Vitry, a celebrated French cardinal and hiſtorical writer, was born at a ſmall town near Paris, whence he took his ſurname, towards the cloſe of the 12th century. He was educated for the church, took orders, and obtained ſome preferment. This he reſigned, and became a regular canon in the monaſtery of Oignies, in the dioceſe of Namur. Hence he went to Toulouſain, where he preached a cruſade againſt the Albigenſes. After this, his zeal led him to preach up a cruſade againſt the Saracens, to aſſume the croſs, and to follow the cruſaders into the Eaſt. Here he continued many years, and was made biſhop of Ptolemais, or Acre. In 1228 pope Gregory IX., to recompenſe him for his ſervices, invited him to Rome, and raiſed him to the purple, at the ſame time giving him the biſhopric of Freſcati. He was now ſent to France, in the capacity of papal legate, to preach up a new cruſade againſt the Albigenſes, and he was afterwards ſent in the ſame capacity into Brabant and the Holy Land. He died at Rome in the year 1244. Although he was author of many works, the moſt curious, and that by which he is chiefly known, is entitled "Hiſtoriæ Orientalis et Occidentalis, Libri 3." In the firſt book we have an account of the affairs of the Eaſt, civil and eccleſiaſtical, and the hiſtory of the country from the time of Mahomet to the year 1210. In the ſecond a view of the ſtate of eccleſiaſtical affairs in the Weſt, during his own time; and in the third the hiſtory of the Eaſt to the year 1218. The cardinal was eſteemed a man of talents adapted to the various concerns in which he engaged, and he was ſteadily devoted to the intereſts of the holy ſee.

JAMES, THOMAS, a learned Engliſh divine and critic, who flouriſhed in the ſeventeenth century, was born at Newport, in the Iſle of Wight, about the year 1571. He was initiated in grammar learning at Wincheſter ſchool, and was thence ſent to New college, Oxford, of which houſe he became a fellow in 1593. In 1599, having collected many MSS. he publiſhed "Philobiblion Richardi Dunelmenſis," with an appendix, "De Manuſcriptis Oxonienſibus." This he dedicated to ſir Thomas Bodley, who afterwards appointed him to the office of keeper of the library which he was then building. In 1600, Mr. James publiſhed "Eclogæ Oxonio-Cantabrigienſes," containing a catalogue of all the MSS. in each college library at Oxford, but not thoſe in the public library, and in each college library, as well as the public one, at Cambridge. In 1605, he printed "Catalogus Librorum in Bibliotheca Bodleiana," and ſhortly after he applied himſelf to examine the ſtate of all the public libraries in England. In the year 1614 he obtained conſiderable promotions in the church without ſolicitation. In 1620 he reſigned his office as keeper of the Bodleian library, in order that he might have leſs interruption in his ſtudies, the chief object of which was the defence of the Proteſtant church againſt the Papiſts. He died at the early age of 51, leaving behind him the character of being the moſt induſtrious and indefatigable writer againſt the Papiſts of any who had been educated at Oxford ſince the Reformation. He was author of many other works beſides thoſe already mentioned; the titles of which may be found in Wood's Athen. Oxon. See alſo Biog. Brit. Supplement.

JAMES, RICHARD, nephew of the preceding, was alſo a native of Newport, in the Iſle of Wight, brought up to the church, and entered into holy orders. About the year 1619 he travelled for improvement through Wales and Scotland, whence he proceeded to Shetland, Greenland, and Ruſſia; on the laſt named country he wrote obſervations, as well as on the manners and cuſtoms of the inhabitants. On his return he aſſiſted the celebrated Selden in the compoſition of his work entitled "Marmora Arundeliana," which was publiſhed in 1628. He was alſo ſerviceable to ſir Robert Cotton, and his ſon ſir Thomas, in diſpoſing and ſettling their noble library, and with the former of theſe he was committed cloſe priſoner by order of the houſe of lords in 1629. During his confinement he compoſed ſome verſes, which he prefixed to a copy of all his printed works, and preſented it to the Bodleian library, a ſhort time before his death. He died in December 1638, leaving behind him forty-five MSS. of his own compoſing or collecting, all in his own hand-writing, which were afterwards placed in the Bodleian library. He was regarded by all who knew him to be a very good Grecian, poet, critic, antiquary, and divine; and admirably well ſkilled in the Saxon and Gothic languages. He was engaged by his uncle to aſſiſt in collating the MSS. of the fathers, with the Popiſh editions, in order to detect the forgeries and omiſſions in theſe laſt. He ſeems never to have obtained any preferment in the church, though his uncle pleaded hard for him with the celebrated Uſher. In a letter to this archbiſhop, having mentioned our author's engagement in writing the life of Becket, he recommends him to the prelate in theſe words: "This kinſman of mine, as well as myſelf, ſhould be right glad to do any ſervice to your lordſhip in this kind. He is of ſtrength, and well both able and learned to effectuate ſomewhat in this kind, critically ſeen both in Hebrew, Greek, and Latin, knowing well the languages, both French, Spaniſh, and Italian; immenſe beyond all other men in reading of the MSS.; of an extraordinary ſtile in penning; ſuch a one as I dare balance with any prieſt or Jeſuit in the world of his age, and ſuch a one as I could wiſh your lordſhip had about you, but "paupertas inimica bonis eſt moribus," and both fatherleſs and motherleſs, and almoſt, but for myſelf, I may ſay, (the more is his pity) friendleſs." Biog. Brit.

JAMES *of the Sword, St., San Jago del Eſpada*, a military order in Spain, the moſt honourable and opulent of the three Spaniſh orders, inſtituted in 1170, under the reign of Ferdinand II. king of Leon and Gallicia. The other two orders, *viz.* thoſe of Calatrava and Alcantara, though inferior to that of St. Jago in power and wealth, were nevertheleſs very conſiderable.

Its end was, to put a ſtop to the incurſions of the Moors; theſe knights obliging themſelves by a vow to ſecure the roads, and to defend the pilgrims on their journey to viſit the relics of St. James of Compoſtella.

An union was propoſed and agreed to in 1170 between theſe and the canons of St. Eloy; and the order was confirmed by the pope in 1176. At that time a conſiderable part of Spain was ſubject to the Moors, and the whole country much expoſed to the depredations not only of the enemy, but of banditti. It is no wonder then, that an inſtitution, the object of which was to oppoſe the enemies of the Chriſtian faith, and to reſtrain and puniſh thoſe who diſturbed the public peace, ſhould be extremely popular, and meet with general encouragement.

The higheſt dignity in this order is that of grand-maſter, which has been united to the crown of Spain. The knights are obliged to make proof of their deſcent from families that have been noble for four generations on both ſides; they muſt alſo make it appear, that their ſaid anceſtors have neither been Jews, Saracens, nor heretics; nor even to have been called in queſtion by the inquiſition.

The novices were obliged to ſerve ſix months in the galleys, and to live a month in a monaſtery. Heretofore they were truly religious, and took a vow of celibacy; but Alexander III. gave them a permiſſion to marry. They now make no vows but of poverty, obedience, and conjugal fidelity; to which, ſince the year 1652, they have added that of defending the immaculate conception of the Holy Virgin. The badge of the order is a croſs of gold, enamelled crimſon, charged on the centre with an eſcallop ſhell argent, and worn round the neck pendant to a broad green ribband. Their habit is a white cloak, with a red croſs on the breaſt. This is eſteemed the moſt conſiderable of all the military orders in Spain: the king carefully preſerves the office of grand-maſter in his own family; on account of the rich revenues and offices whereof it gives him the diſpoſal. The number of knights is much greater now than formerly, all the grandees chooſing rather to be received into this than into the order of the Golden Fleece; inaſmuch as this puts them in a fair way of attaining to commands, and gives them many conſiderable privileges in all the provinces of Spain, but eſpecially in Catalonia. The knights are moſt implicitly to obey the commands of their grand maſter. The order could formerly bring into the field 1000 men at arms; and if they were accompanied as was uſual in a former age, this was a formidable body of cavalry. To this order there belonged 84 commanderies and 200 priories, and other benefices.

There was an order of the ſame name and kind inſtituted in Portugal by king Don Denys, ſurnamed the Liberal, who, in the year 1288, obtained a bull from pope Nicholas IV. for the ſeparation of the order from Spain; and in the year 1486, pope Alexander VI., at the ſolicitation of John II., revoked the vows of celibacy, and allowed all the knights of this order in Portugal to marry. The reigning king of Portugal is grand maſter of the order. The badge and ribband are nearly the ſame with thoſe of the Spaniſh order.

Another order under the ſame denomination, being a religious order for ladies, was inſtituted at Salamanca, in Spain, in the year 1312. Their habit was black, their badge, which they wore on the left breaſt, was a croſs fleury fitché embroidered gules, charged on the centre with an eſcallop or.

JAMES, *St.*, *Order of*, was inſtituted in Holland in the year 1290, by Florence V. count of Holland. The knights were 12 in number. The collar of the order was a chain of gold, in which, at equal diſtances, were placed ſix eſcallop ſhells; and pendant to this collar was a medal of gold with the image of St. James enamelled upon it.

JAMES's *Day*, *St.*, a feſtival in the calendar, obſerved on the 25th of July, in honour of St. James.

JAMES's *Bay*, in *Geography*, the eaſtern part of the ſouth diviſion of Hudſon's bay, with which it communicates, dividing New Britain from South Wales. It is about 150 miles wide. N. lat. 51° 10′ to 55° 10′. W. long. 58° 30′ to 82° 45′. See HUDSON's *Bay*.

JAMES's *Cape*, *St.*, the ſouthernmoſt extremity of Queen Charlotte's iſland, diſcovered by captain Dixon in 1787, on the 25th of July, whence its name. Captain Vancouver fixes its ſituation in N. lat. 51° 58′. E. long. 229° 6′.—Alſo, a cape on the coaſt of Chiampa, in the Chineſe ſea. N. lat. 10° 32′. E. long. 106° 43′.

JAMES *City*, a county of Virginia, in the United States, 30 miles long and 12 broad, lying between Chickahominy and James's rivers, containing 1542 free inhabitants, and 2318 ſlaves.

JAMES *Fort*, a fort of the iſland of Barbadoes, near Bridge-town.—Alſo, a fortreſs of Africa, in the kingdom of Acra, on the Gold coaſt.—Alſo, a fort on the N. ſide of Loblollo bay, in the iſland of Antigua, at the head of which is St. John's harbour.

JAMES *Iſland*, an iſland of America, ſituated in South Carolina, on the ſouth ſide of Charleſtown harbour, oppoſite to Charleſtown, and containing about 50 families; ſeparated from John's iſland on the weſtward by Stono river.—Alſo, an iſland of Africa, 30 miles up the river Gambia, where the Engliſh have a fort and factory.—Alſo, a ſmall iſland near the coaſt of Maryland, in the Cheſapeak. N. lat. 38° 40′. W. long. 76° 25′.

JAMES *River*, a navigable river of America, in Virginia, anciently called by the Indians "Powbatan," formed by the junction of Jackſon's and Cowpaſture rivers, which are nearly equal. At the place where it begins to break through the Blue ridge it receives the North river, and in its courſe between the Blue ridge and Richmond receives ſeveral other ſtreams. At Richmond the navigation is interrupted by falls; but a canal ſerves for the paſſing of boats by theſe falls. Above theſe the river is navigable for batteaux and canoes to within 10 miles of the Blue ridge. It is not improbable that its navigation may at ſome future period be made to interlock with that of the Potowmac, and thus to communicate by a ſhort paſſage with the Ohio. James river, after a courſe of between 200 and 300 miles, falls into the mouth of the Cheſapeak. N. lat. 37° 2′. W. long. 76° 20′.

JAMES, a creek in Delaware, which empties into Delaware bay, 11 miles below Hook iſland. Dover, the ſeat of government, ſtands on this creek, 5 miles from its mouth.

JAMES, *St.* a town of South Carolina; 15 miles N. of Charleſtown. - Alſo, a town of South Carolina, on the S. ſide of the Santée; 44 miles N. of Charleſtown. N. lat. 33° 29′. W. 79° 28′.—Alſo, a town of the ſtate of Maryland, in Kent county, 4 miles S.W. of Cheſter.—Alſo, a town of France, in the department of the Channel, and chief place of a canton in the diſtrict of Avranches; 9 miles S. of it. The place contains 2522, and the canton 12,459 inhabitants, on a territory of 155 kiliometres, in 12 communes.

JAMES's *Iſlands*, *St.*, the greater and leſs, two of the ſmaller Virgin iſles, ſituated in the King's channel E. of Tortola, and W. of St. Thomas; between which and them is St. James's paſſage.

JAMES's *River*, *St.*, a river of Canada, which runs into the river St. Lawrence, N. lat. 48° 10′. W. long. 69° 10′.

JAMES's *Powder*, in the *Materia Medica*, a famous preparation of antimony, the receipt for which, as extracted from the records of chancery, is as follows: "Take antimony, calcine it with a continual protracted heat in a flat unglazed earthen veſſel, adding to it from time to time a ſufficient quantity of any animal oil and ſalt, well dephlogiſticated; then boil it in melted nitre for a conſiderable time, and ſeparate the powder from the nitre by diſſolving it in water: Take quickſilver, make an amalgam with equal parts of the martial regulus of antimony and pure ſilver, adding a proportional quantity of ſal ammoniac. Diſtil off the mercury by a retort into a glaſs receiver, then with the quickſilver make a freſh amalgam with the ſame ingredients; diſtil again, and repeat this operation nine or ten times; then diſſolve this mercury in ſpirits of nitre, and put it into a glaſs retort and diſtil to dryneſs; calcine the caput mortuum till it becomes of a gold colour; burn ſpirits of wine upon it, and keep it for uſe. The doſe of the powder is uncertain; in general, 30 grains of the antimonial powder and one grain of the mercurial is a moderate doſe. Signed and ſworn to by Robt. James." It is ſuggeſted, however, that James's real proceſs was formed upon one previouſly brought from Italy, which had its run in the faſhion of the day, and was called "Liſle's powder," and the preparation of which was very analogous to the preſent "Pulvis antimonialis;" for an account of which, ſee ANTIMONY.

In the 2d part of the 81ſt volume of the Philoſophical Tranſactions (for 1791) we have an elaborate paper, containing a great number and variety of "Experiments and Obſervations to inveſtigate the Compoſition of James's Powder." Theſe experiments and obſervations are the more important and uſeful, as they ſerve to explain the nature and manner of preparing this medicine, to which many phyſicians have recurred, and upon which they have principally depended for the cure of continued fevers; and more eſpecially as this patent medicine cannot be prepared by following the directions of the ſpecification in the court of Chancery. Our limits will not allow us to give a minute detail of the author's experiments; but we muſt content ourſelves with extracting ſome of the general reſults, and refer the reader for further ſatisfaction to the valuable paper itſelf. From the above experiments it appeared probable that ſuch a ſubſtance as James's powder might be made by calcining together antimony and bone-aſhes; which operation produces a powder called "Liſle's" and "Schawanberg's" fever powder; a preparation deſcribed by Schroder and other chemiſts above 150 years ago. The receipts for this preparation, ſays Dr. Pearſon, differed in the proportion of the antimony to the bone-aſhes, and in the ſtate of the bone; ſome directing bone-ſhavings to be previouſly boiled in water; others ordered them to be burnt to aſhes before calcining them with antimony; and in other preſcriptions the bone-ſhavings were directed to be burnt with the antimony. According to the receipt in the poſſeſſion of Mr. Bromfield, by which this powder was prepared above 60 years ago, and before any medicine was known by the name of James's powder, two pounds of hartſhorn-ſhavings muſt be boiled to diſſolve all the mucilage, and then being dried, be calcined with one pound of crude antimony, till the ſmell of ſulphur ceaſes, and a light grey powder is produced. The ſame preſcription was given to Mr. Wallis, about the ſame time, by Dr. John Eaton, of the College of Phyſicians, with the material addition, however, of ordering the calcined mixture to be expoſed to a great heat in a cloſe veſſel to render it *white*. Mr. Turner made this powder, about 50 years ago, by calcining together equal weights of burnt hartſhorn and antimony in an open veſſel, till all the ſulphur was driven off, and the mixture was of a light grey colour. He likewiſe was acquainted with the fact, that by a ſufficient degree of fire in a cloſe veſſel this cineritious powder turned white. Mr. Turner alſo prepared this powder with a pound and a half of hartſhorn ſhavings and a pound of antimony, as well as with ſmaller proportions of bone. Schroder preſcribes equal weights of antimony and calcined hartſhorn; and Poterius and Michaelis, as quoted by Frederic Hoffman, merely order the calcination of theſe two ſubſtances together (aſſigning no proportion) in a reverberatory fire for ſeveral days. In the London Pharmacopeia of 1788, this powder is called "Pulvis antimonialis," and it is directed to be prepared by calcining together equal weights of hartſhorn ſhavings and antimony.

From the whole of his *analytical* experiments Dr. Pearſon infers:

1. That JAMES's powder conſiſts of phoſphoric acid, lime, and antimonial calx, with a minute quantity of calx of iron, which is conſidered to be an accidental ſubſtance.

2. That either theſe three eſſential ingredients are united with each other, forming a triple compound, or, phoſphorated lime is combined with the antimonial calx, compoſing a double compound in the proportion of about 57 parts of calx, and 43 parts of phoſphorated lime.

3. That this antimonial calx is different from any other known calx of antimony in ſeveral of its chemical qualities. About three-fourths of it are ſoluble in marine acid, and afford Algaroth powder; and the remainder is not ſoluble in this menſtruum, and is apparently vitrified.

From the author's *ſynthetic* experiments it appears, that by calcining together bone-aſhes, that is, phoſphorated lime, and antimony in a certain proportion, and afterwards expoſing the mixture to a white heat, a compound was formed conſiſting of antimonial calx and phoſphorated lime, in the ſame proportion, and poſſeſſing the ſame kind of chemical properties, as James's powder.

A powder, ſays Dr. Pearſon, ſold by F. Newbery under the title of "JAMES's powder for horſes, horned cattle, hounds, &c." is a light clay-coloured, gritty, taſteleſs ſubſtance, in which are ſeen ſmall *ſpicula*. He ſays, it appears to me to be nothing more than JAMES's powder for fevers, or LISLE's powder above-mentioned, made by calcining antimony and bone-aſhes together in open veſſels; becauſe, 1ſt, by expoſure to a white heat in cloſe veſſels, it turns as white as JAMES's powder; 2dly, it diſſolves partially in nitrous acid; and the remainder diſſolves partially in marine acid. The nitrous ſolution contains phoſphoric acid and calcareous earth; and the muriatic ſolution affords Algaroth powder.

JAMESPOUR, in *Geography*, a town of Hindooſtan, in Balogiſtan; 25 miles S.W. of Dadari.

JAMESTOWN, a village of the county of Leitrim, province of Connaught, Ireland, which before the union returned two members to the houſe of commons. It is on the river Shannon, one mile from Drumſna, which is its poſt-town; three from Carrick on Shannon; and 73 N.W. from Dublin.—Alſo, a town of America, in Rhode iſland. See CANNONICAT.—Alſo, a poſt town, formerly the metropolis of Virginia, and now the capital of James city county. It is the oldeſt town ſettled by the Engliſh in America. It is ſituated on a peninſula, on the N. ſide of James river, at its mouth in Cheſapeak bay, eight miles S.S.W. of Williamſburgh. N. lat. 37° 9'. W. long. 76° 50'.—Alſo, a town of Prince Edward county, in Virginia, ſituated on Appomatox river, 12 miles N.E. from the court-houſe.—Alſo, a town of the iſland of Barbadoes, founded in the latter end of the year 1624, being the firſt Engliſh ſettlement in the iſland; ſituated in St. James's pariſh, on the W. ſide of the iſland.

JAMEZ, or YAM, a town of Africa, in the kingdom of Fonia. N. lat. 12° 30'. W. long. 15° 11'.

JAMGONG, a town of Hindooſtan, in Dowlatabad; 10 miles W. of Amednagur.—Alſo, a town in the circar of Aurungabad; 15 miles E.N.E. of Aurungabad.—Alſo, a town of Bengal; 58 miles N.W. of Burdwan.

JAMJA, a town of Sweden, in the province of Blekingen; nine miles E. of Carlſcrona.

JAMLA, a town of Hindooſtan, in the circar of Banſwaleh; 18 miles E. of Tandla.

JAMMING, in general, denotes the act of encloſing any object between two bodies, ſo as to render it immoveable.

In *Sea Language*, this expreſſion is applied to the ſituation of ſome running rope, when it happens to be ſqueezed by the compreſſion of the ſtanding-rigging, &c. and conſequently incapable of performing its office, by traverſing in the blocks, till it is releaſed. In this ſenſe jamming is oppoſed to rendering.

JAMNEY, in *Geography*, a town of Bohemia, in the circle of Chrudim; 17 miles N.E. of Leutmiſchl.

JAMNIA, JAMNES, or JAFNA, in *Ancient Geography*, a maritime town of Paleſtine, between Azotus and Joppa, which belonged to the Philiſtines; but taken from them by Uzziah, king of Judah, 2 Chron. xxvi. 6. According to Joſephus, it was given to the tribe of Dan. It was taken by Judas Maccabæus, who burnt its port and its veſſels. In the 2d book of Maccabees, xii. 9. it is ſtated to be diſtant from Jeruſalem 240 furlongs. Steph. Byz. aſſigns it to the Phœnicians. Auguſtus gave it to Herod, and this prince transferred it to his ſiſter Salomé, who at her death bequeathed it to Livia, the wife of Auguſtus. Under the reign of Nero, it was taken by Veſpaſian, A.D. 67. After the conqueſt of Judea by Veſpaſian and Titus, an inconſiderable body of the Jews remained, when others withdrew; and collecting the ſcattered fragments of Jewiſh learning from the general wreck into a ſchool at Jafna or Jamnia, revived in this place their forms of worſhip. The rabbi Jochanan was the founder of the ſchool; and the good deſign which he began was completed, as far as the ſtate of the times would allow, by the rabbi Gamaliel, called from this circumſtance Gamaliel Jafnienſis. The ſucceſs which attended this ſchool induced many of the diſperſed Jews to return to Paleſtine; and another ſchool was formed at Tiberias.

JAMNITZ, or GEMNICE, in *Geography*, a town of Moravia, in the circle of Znaym; 22 miles N.W. of Znaym. N. lat. 48° 59′. E. long. 15° 28′.

JAMOORGONG, a town of Hindooſtan, in the circar of Aurungabad; 20 miles E. of Jaffierabad.

JAMPNUM, in our *Old Writers*, furze, or gorſe, and gorſy ground. This word is uſed in fines of lands, &c. and ſeems to come from the French *jaune*, i. e. *yellow;* becauſe the bloſſoms of furze or gorſe are of that colour. 1 Croke 179.

JAMPOLI, in *Ancient Geography*, a town of Greece, in Livadia.

JAMPOUR, in *Geography*, a town of Hindooſtan, in Guzerat; 17 miles N. of Radunpour.

JAMPTPOUR, a town of Hindooſtan, in Bahar; 25 miles N. of Hajypour.

JAMSA, a town of Sweden, in Tavaſtland; 56 miles N.N.E. of Tavaſthus.

JAMSIO, a town of Sweden, in the province of Blekingen; 32 miles W. of Carlſcrona.

JAMTLAND, a province of Sweden, bordering upon Norway, about 70 miles in length and 60 in breadth, annexed to the crown of Sweden by the treaty of Roſchild, in the year 1658. It is generally mountainous; on the weſtern part the rocks are craggy and the mountains high, having between them deep vallies and rapid torrents. The milk of the cows, bred in theſe paſtures, and houſed even in ſummer, furniſhes excellent butter, but they are ſupplied with beef and tallow from Norway. The eaſtern part of the province is a champaign country, watered by lakes and rivers which abound with fiſh; and the neighbouring provinces are occaſionally ſupplied with grain, chiefly barley, oats, and rye, and ſome wheat from the fertile ſpots in this diſtrict. The Jamtlanders in ſevere ſeaſons are reduced, by the ſcarcity of corn, to the neceſſity of preparing bread from the pulverized bark of trees. The iron ore of this province furniſhes employment for many perſons; and they have alſo alum quarries, ſlate, lead-ore, and other minerals, two copper-works of modern erection, and a place for making ſaltpetre. The population is inconſiderable, ſo that in moſt parts religious ſervice is performed irregularly, and at diſtant intervals. The towns are few, and in the 11 pariſhes which Jamtland contains, 46 churches have been erected: the number of chimnies in all theſe pariſhes amounts to about 717. The inhabitants derive their ſubſiſtence from agriculture, grazing, hunting, and fiſhing. With the Norwegians they carry on a conſiderable trade, ſupplying them with ſalt-pans, ſteel, and iron-ware; and a kind of leather, impenetrable by water, of which are made ſhoes, boots, and even jackets. This country, by the contributions of the peaſants, maintains a regiment of foot, or, as others ſay, of dragoons, and a troop of horſe.

JANA, a town of Japan, in the iſland of Niphon; 25 miles N. of Seoda.

JANA, among the *Romans*, a name given to Diana, or the moon.

JANAGAVA, in *Geography*, a town of Japan, in the iſland of Ximo; 20 miles S.E. of Ikua.

JANAGUR, a town of Hindooſtan, in Guzerat, on the right bank of the Puddar; 100 miles W. of Amedabad. N. lat. 23° 30′. E. long. 70° 56′.

JANAKA, a raja, according to Hindoo legends, who being childleſs, adopted a female infant found in a field by a ploughman. This child proved eventually to be an avatara, or incarnation of Lakſhmi, conſort of Viſhnu, for the purpoſe of accompanying her lord on earth in his manifeſtation in the perſon of Rama. As the daughter of Janaka ſhe is ſometimes called Janeki, but her moſt common name is Sita. See SITA.

JANAKALA, in *Geography*, a town of Sweden, in the province of Tavaſtland; 10 miles N.N.W. of Tavaſthus.

JANALAX, a town of Sweden, in the province of Savolax; 35 miles N.N.W. of Nyſlot.

JANEIRO, RIO. See RIO *Janeiro*.

JANEWAY, JAMES, in *Biography*, an Engliſh nonconformiſt divine, was educated at Chriſt-church college, Oxford. After the Reſtoration he was deprived of his living in the church, and gladly opened a meeting-houſe at Rotherhithe, when the act of indulgence was paſſed. He died in 1674. He was author of "Heaven upon Earth;" "The Saints Encouragement to Diligence;" and "A Token for Children," which has been exceedingly popular and gone through a multitude of editions. Calamy.

JANGAGUR, in *Geography*, a town of Hindooſtan, on the Nerbuddah; 15 miles W. of Hurdah.

JANGARA, a town of Bengal; eight miles N.N.E. of Curruckpour.

JANGAS, a town of Peru, in the dioceſe of Guamanga; 15 miles E. of Lunaguana.

JANGEGUR, a town of Hindooſtan, in the circar of Ruttunpour; 18 miles S. of Ruttunpour.

JANGIPOUR, a town of Bengal; 18 miles N.N.W. of Moorſhedabad.

JANGOMA, or YANGOMA, a ſmall kingdom of Aſia, in the vicinity of the Birman empire, on the north of Siam. Its extent has been variable on account of its frequent revolutions. According to the Siameſe reports, this country is governed by prieſts. The inhabitants are ſaid to be tall and well proportioned; and in this hot climate their ſole garment is a cincture of linen. The women are famed in the Eaſt for their gallantry and beauty, in which laſt quality they ſurpaſs thoſe of Pegu; and voluptuous monarchs think their harems enriched and adorned by a concubine from Jangoma. The common food of the inhabitants is rice, and the country is alſo ſaid to abound in muſk, pepper, ſilk, gold, ſilver, copper, and gum-benzoic. Little that is certain, however, is known concerning this remote country.

JANGON, a town of Aſiatic Turkey, in Caramania; 18 miles N. of Kaiſarieh.

JANGUIRA, a town of Hindooſtan, in Bahar; 13 miles W. of Boglipour.

JANGUIRABAD, a town of Hindooſtan, in the circar of Sumbul; 10 miles S.W. of Anapſheer.

JANGUIRPOUR, a ſmall circar of Bengal; W. of Dinagepour.

JANI, a town of Aſiatic Turkey, in the government of Sivas; 60 miles S.S.W. of Sivas.

JANIACOPET, a town of Hindooſtan, in Bednore; 20 miles W. of Simogu.

JANICULUS, or JANICULARIS *Mons*, in *Ancient Geography*, a mountain of Rome, having to the E. and S. the Tiber, to the W. the fields, to the N. the Vatican; and ſo much of it as ſtands within the city-walls is about five ſtadia in circuit. It was ſo called either from an old town of the ſame name, ſaid to have been built by Janus, or becauſe Janus dwelt and was buried there; or becauſe it was a ſort of gate (janua) to the Romans, whence they iſſued out upon the Tuſcans. The ſparkling ſands have at preſent given it the name of "Mons Aureus," and by corruption "Montorius." This eminence afforded the beſt ſituation for a full proſpect of the city; but it has been leſs inhabited than the other parts on account of the groſsneſs of the air.

It is ſtill famous for the ſepulchres of Numa, and the poet Statius. Ancus Martias encompaſſed the Janiculum with a wall; and for a communication between this place and the city, he built over the river a timber-bridge, of an extraordinary ſtructure, whoſe parts were held together without being linked with iron. The pontifices were appointed to keep up and repair the bridge.

JANIDUNI, in *Geography*, a town of European Turkey, in Beſſarabia, ſituated on the Black ſea; 40 miles W.S.W. of Otchakov.

JANIKAU, or JANKOW, a town of Bohemia, in the circle of Czaſlau; ſix miles S.S.E. of Czaſlau.

JANISZKI, a town of Samogitia; 36 miles N.N.E of Miedniki.

JANITORES, door-keepers among the Romans, the meaneſt of their ſlaves, who were commonly chained to their poſts.

JANIZARIES, an order of infantry in the Turkiſh armies; reputed the grand ſeignior's foot-guards.

Voſſius derives the word from *genizers*, which, in the Turkiſh language, ſignifies *novi homines*, or *milites*. D'Herbelot tells us, that *jenitcheri* ſignifies a *new band* or *troop;* and that the name was originally given by Amurath I. called the Conqueror, who, chooſing out one-fifth part of the Chriſtian priſoners whom he had taken from the Greeks, and inſtructing them in the diſcipline of war and the doctrines of their religion, ſent them to Hagi Bektaſche (a perſon whoſe pretended piety rendered him extremely revered among the Turks), to the end that he might confer his bleſſing on them, and at the ſame time give them ſome mark to diſtinguiſh them from the reſt of the troops. Bektaſche, after bleſſing them in his manner, cut off one of the ſleeves of the fur gown which he had on, and put it on the head of the leader of this new militia; from which time, *viz.* the year of Chriſt 1361, they have ſtill retained the name *jenitcheri*, and the fur cap. Others aſcribe their origin to ſultan Amurath II. in the year 1372, and others again to Orcan, the predeceſſor of Amurath I.

The janizaries are children of tribute, levied by the Turks among the Chriſtians, and bred up to the military life. They are taken at the age of twelve years, to the end, that forgetting their country and religion, they may know no other parent but the ſultan. However, generally ſpeaking, they are not now-a-days raiſed by way of tribute; for the carach, or tax, which the Turks impoſe on the Chriſtians, for allowing them the liberty of their religion, is now paid in money; excepting in ſome places where money being ſcarce, the people are unable to pay in ſpecie, as in Mingrelia, and other provinces near the Black ſea. At preſent the Turks make no ſcruple of recruiting their janizaries with natives; and as there are ſome of theſe troops in the provinces as well as at Conſtantinople, it is not eaſy to aſcertain their number. At firſt this military corps conſiſted of no more than 12,000 men, and they ſeemed to be particularly deſigned as a guard to the emperor's perſon; and it was afterwards augmented by the ſucceſſors of the founder to 50,000. Selim, the ſon of Bajazet, reduced them; but ſince his reign their number has again ſo increaſed, that they have compoſed the principal force of the Turkiſh army.

As in the Turkiſh army, the European troops are diſtinguiſhed from thoſe of Aſia, the janizaries are alſo diſtinguiſhed from the janizaries of Conſtantinople, and of Damaſcus. At Conſtantinople Sultan Soliman built barracks for the janizaries, and beſtowed a ſplendid gilding on the cielings of the porticos, which his ſucceſſors have always maintained, though they have entirely neglected the diſcipline which he eſtabliſhed. This diſregard of good order, by totally deſtroying the ſpirit of the inſtitution, has increaſed the number of thoſe who receive pay.

Their pay is from two aſpers to twelve per diem; for when they have a child, or do any ſignal piece of ſervice, their pay is augmented. Baron de Tott ſays, that the pay of the janizaries is duly diſtributed every three months, and that it has a progreſſive increaſe from three aſpers to ninety-nine.

Their dreſs conſiſts of a dolyman, or long gown, with ſhort ſleeves, which is given them annually by the grand ſeignior, on the firſt day of Ramazan. They wear no turban, but in lieu of that a kind of cap which they call *zarcola*, and a long hood of the ſame ſtuff hanging on their ſhoulders. On ſolemn days they are adorned with feathers, which are ſtuck in a little caſe in the fore-part of the bonnet. On occaſions of this kind the janizaries appear without arms, and with their hands croſſed before them; and except the red ſhoes, great blue breeches and bonnet which they are obliged to wear, they dreſs themſelves in what colour they pleaſe, and their uniform conſiſts only in the cut of their clothes.

Their arms in Europe, in a time of war, are a ſabre, a carabine, or muſket, and a cartouch-box hanging on the left ſide. At Conſtantinople, in time of peace, they only carry a long ſtaff in their hand. In Aſia, where powder and fire-arms were more uncommon, they wore a bow and arrow, with a poignard, which they called *haniare*.

The officer who commands the whole body of janizaries is called the *janizar agaſi;* in Engliſh, aga of the janizaries. He is one of the chief officers of the empire.

The corps of janizaries is divided into regiments, which are called "Baluck," and the commander of every regiment is denominated "Baluck-Aga:" theſe regiments are diſtributed into barracks, or "odas," the ſoldiers of which live together, when they are at Conſtantinople or in the provinces. M. de Peyſſonel, in his "Strictures on the Memoirs of Baron de Tott," mentions the diviſion of them into "Ortas," "Buluks," and "Seymens," forming in all 196 companies, *i.e.* 101 ortas, 61 buluks, and 34 ſeymens. Theſe companies are again ſubdivided. To this corps alſo belong the "Yerlis," or provincial militia of the janizaries, commanded by a "Serdar," in the cities which are not conſidered as places of ſtrength, and where they have no janizary-aga; alſo the "Yamaks," or garriſoned invalids; and the "Otouraks," or invalids exempted from ſervice. In the garriſon and in the field they are divided into "Sag Kol," and "Sol Kol," or right wing and left wing, each of which has its ſeparate ſtandard and reſpective aga, one of whom is ſtyled "Sag Kol Agaſſi," and the other "Sol Kol Agaſſi." There are alſo companies of volunteers, which are raiſed in time of war, and maintained by the officers at their own expence. To this claſs of military alſo belong gunners, bombardiers, pioneers, miners, &c. In the army the janizaries encamp together by tens; every ten having a horſe to carry their ſmall baggage and cloaks, with a ſervant to cook for them; and every twenty a camel to carry two tents, two large carpets on which to ſleep, two kettles, and two leather veſſels in which to carry water; when they cannot get camels, they make uſe of waggons furniſhed by the country through which they paſs. With regard to their tactics, they form their battalions very deep, and their ſquadrons very large; they are exerciſed in the uſe of their arms, and to preſerve their ranks and files; but with leſs order and exactneſs than the troops of the Chriſtians. They never had pikes, but their favourite weapon has always been the ſcymetar. In former times they fought with darts, arrows, and hatchets; but, at preſent, the whole of their infantry is provided with firelocks. M. de Bonneval attempted to inſtruct them in handling the bayonet, and formed a ſmall body to the uſe of that weapon; but it declined and dwindled away ſince his death. Their ordinary mode of fighting is to fire their pieces and then fall on the enemy, ſabre in hand, with very loud ſhouts, but without any order, notwithſtanding which their number, their impetuoſity, and the weight of their ſhock, render them very formidable, particularly in the firſt onſet; after one or two repulſes their fury abates, and it is not eaſy to bring them again to the charge.

Though the janizaries are not prohibited marriage, yet they rarely marry, nor then, but with the conſent of their officers; as imagining a married man to make a worſe ſoldier than a bachelor.

The janizaries were at firſt called *jaja*, that is, footmen, to diſtinguiſh them from the other Turks, the troops whereof conſiſted moſtly of cavalry.

Vigenere tells us, that the diſcipline obſerved among the janizaries is extremely conformable, in a great many things, to that uſed in the Roman legions.

The janizaries were heretofore a body formidable even to their maſters, the grand ſeigniors. They depoſed Bajazet II. in 1512; they procured the death of Amurath III. in 1595. Oſman II. they firſt ſtripped of his empire, and afterwards of his life, in 1622; and in about two months dethroned Muſtapha, whom they had made his ſucceſſor; and in 1649 they depoſed ſultan Ibrahim, and at laſt ſtrangled him in the caſtle of the Seven Towers; and in 1730 they obtained the ſacrifice of the grand vizier, the reis effendi, and the captain baſhaw, and depoſed and impriſoned Achmet III. and advanced the ſultan Mahomet, ſon of Muſtapha II from priſon to the throne in his ſtead. The number of real janizaries has been variouſly eſtimated; but the privileges belonging to their order, ſuch as exemption from taxes, and the performance of public duties, have induced many perſons to bribe the officers, in order to their being admitted into the number of janizaries without pay.

Baron de Tott ſays that the number of thoſe who receive pay amounts to 400,000, but that of thoſe who are enrolled is unlimited. He allows, however, that 20,000 are ſcarcely ever collected at once, and that this number is principally compoſed of thoſe who receive but little pay, or, perhaps, none; having only entered the ſervice to obtain a right to it. The enrolled janizaries are ſo numerous, ſays M. de Peyſſonel, as to amount, if their number could be aſcertained, to ſeveral millions; nevertheleſs, they are only eſtimated at 40,000, on which account they are called "Kirk in Koul," or the forty thouſand ſlaves; and though there may be 400,000 on the pay-liſt, it is certain the treaſury does not iſſue pay for more than 40,000, that being only received by the janizaries of the "odas," or barracks, at Conſtantinople, and thoſe who in the garriſons have followed their "kettle." All thoſe who are not with the ſtandard are called "Yamaks," and receive no emolument.

Although the janizaries were once the terror of the natives, and ſometimes of the ſultans themſelves, whom they have by their inſurrections and rebellions occaſionally dethroned and murdered, their valour has declined, their diſcipline is relaxed, and their tumultuary array is incapable of contending with the order and weapons of modern tactics; but at the time of their inſtitution, they poſſeſſed a deciſive ſuperiority in war; becauſe a regular body of infantry, in conſtant exerciſe and pay, was not maintained by any of the princes of Chriſtendom.

The janizaries of Syria are an enrolled national militia, conſiſting of a certain number in each pachalic, who muſt hold themſelves in readineſs to march whenever they are required. As there are certain privileges and exemptions annexed to their body, there is a competition for obtaining admiſſion into it. Formerly they were ſubject to regular exerciſe and diſcipline; but all regard to this has ſo declined, that within the laſt 60 or 80 years, ſays Volney (Travels in Egypt and Syria, vol. ii.), there no longer remains the ſlighteſt trace of their ancient good order. Theſe pretended ſoldiers are only a crowd of artizans and peaſants, as ignorant as the reſt of that claſs, and infinitely leſs tractable. When a Pacha abuſes his authority, they are always the firſt to erect the ſtandard of ſedition. They depoſed and expelled Abdi Pacha from Aleppo, and compelled the Porte to ſend another in his ſtead. The Turkiſh government, it is true, avenges itſelf by ordering the moſt active mutineers to be ſtrangled; but, at the firſt opportunity that occurs, the janizaries create other chiefs, and affairs return to their uſual courſe. The Pachas, ſeeing themſelves thwarted by this national militia, have had recourſe to the expedient practiſed in ſimilar caſes; they have taken foreign ſoldiers into their ſervice, who have neither friends nor families in the country. Theſe are of two ſorts, cavalry and infantry. The former are called *Delibaches* and *Leventi*, and the latter *Mograbians*, which ſee reſpectively.

In Egypt the janizaries, and alſo the Azabs, which two bodies of the military corps were formerly the terror of the Pacha, have been ſo degraded by the influence of the Mamlouks, that they are now as inſignificant as himſelf. The cauſe of this has been the corrupt and wretched government of the Turks; for, previouſly to the inſurrection of Ibrahim Kiaya, the number of Turkiſh troops, which ſhould conſiſt of 40,000 men, infantry and cavalry, had been reduced to leſs than half that number by the avarice of their officers, who diverted the pay to their own uſe. After Ibrahim, Ali Bey completely deſtroyed their conſequence. He firſt diſplaced all the officers who gave him umbrage; left unfilled the places that became vacant; deprived the commanders of all influence; and ſo degraded all the Turkiſh troops, that at this day the janizaries, the Azabs, and the five other corps, are only a rabble of artizans and vagabonds, who guard the gates of thoſe who pay them, and tremble in the preſence of the Mamlouks, in whom the whole military force of Egypt conſiſts. See MAMLOUKS.

JANIZARIES, at Rome, are officers or penſioners of the pope, called alſo *participantes*, on account of certain rites or duties which they enjoy in the annates, bulls, or expeditions, and the Roman chancery.

Moſt authors are miſtaken in the nature of their office. The truth is, they are officers of the third bench, or college of the Roman chancery. The firſt bench conſiſts of writers, the ſecond of abbreviators, and the third of janizaries; who are a kind of correctors and reviſors of the pope's bulls.

JANKOONIES TOWN, in *Geography*, a town of Africa, in Loango, on the coaſt. S. lat. 4° 30′.

JANMIER, a town of Hindooſtan, in Guzerat, on the gulf of Cambay; 38 miles S. of Gogo.

JANNA, or JANNINA, a conſiderable town of European Turkey, in the province of Theſſaly, the ſee of a Greek biſhop, ſituated on a lake which communicates with the river Peneus, and gives name to the province; 40 miles W. of Lariſſa. N. lat. 40. E. long. 21 38.

JANNANINS, in *Modern Hiſtory*, the name which the negroes, in ſome of the interior parts of Africa, give to ſpirits which they apprehend to be the ghoſts or ſouls of their anceſtors, and which they go to the tombs to conſult and worſhip. Every negro has his tutelary jannanin, and ſo has likewiſe every village, to whom private and public worſhip is reſpectively addreſſed. The women, children, and ſlaves are forbid to attend their public worſhip.

JANNEQUIN, Clement, in *Biography*, a French compoſer, who flouriſhed early in the 16th century, during the moſt ſplendid period of the reign of Francis I. when, though we hear of but few great muſicians at his capital, yet ſo many ſubſiſted, particularly in the Low Countries, that muſic in parts became common from that ſchool all over Europe; and Jannequin, though he is placed by Walther in the middle of the 16th century, muſt have flouriſhed much earlier; as a curious compoſition by him, called "La Battaille," printed in the tenth book of "French Songs for four Voices or Inſtruments," is preſerved in the Britiſh Muſeum, which, though it did not appear in this edition, by Tylman Suſato, of Antwerp, till 1545, muſt have been compoſed long before that time; for the ſong was written and ſet on occaſion of the famous and obſtinate battle of Marignan, which laſted two days, and was fought during the firſt year of Francis I. 1515, between the French and Swiſs, who diſputed their paſſage to the Milaneſe.

As this compoſer ſeems the firſt who tried to prove that muſic as well as painting and poetry was an imitative art, we ſhall give the whole title of the book of French ſongs for four voices or inſtruments preſerved in the Britiſh Muſeum.

"Le Dixieſme livre des Chanſons, contenant La Battaile à 4, de Clement Jannequin, avec la cinquieſme partie de Phillippe Verdelot, ſi placet, et deux Chaſſes du Lievre à 4 Parties, et le Chant des Oyſeaux à 3, 1545.

"La Battaille, ou défaite des Suiſſes à la journée de Marignan; à 4 ou à 5, Clem. Jannequin.

"Le Chant des Oyſeaux, à 3. Nic. Gombert.

"Le Chaſſe du Lievre, à 4. Incognito Authori.

"La Chaſſe du Lievre, à 4. Nic. Gombert."

In the Battle-piece, as well as in the other imitative pieces in the ſame collection, there are ſeveral long movements in the Battaille, in which the noiſe and din of war, during this memorable conflict, are imitated. In the ſong of birds, and in each compoſition called "The Chace," or hunting of the hare, the compoſers have ſeverally tried to expreſs the words with more exactneſs than we had ſeen attempted before. Indeed, the beſt counter-point and the moſt ingenious contrivances, with reſpect to muſical compoſition, anterior to this period, are contained in the maſſes and motets of the church, where nothing like expreſſion, or even the true accent of words is attempted. But here, though clumſily done, we have ſpecimens of muſical imitations, it ſhould ſeem, for the firſt time.

The name and works of Jannequin had penetrated into Italy early in the 16th century, as we find by Zarlino, the elder Doni's catalogue of muſic, Pietro Pontio, and Zacconi. A work of his, entitled "Inventions Muſicales," in four and five parts, was publiſhed at Paris and Lyons, 1544.

JANNI, St., in *Geography*, a ſmall iſland in the Mediterranean, near the coaſt of Naples. N. lat. 39° 59′. E. long. 13° 52′.

JANNOCK, a kind of oaten bread, much uſed in the northern parts of England, and made of ſour leaven.

JANOHAH, in *Scripture Geography*, a city of Ephraim, on the frontiers of the half tribe of Manaſſeh. Joſh. xvi. 6. Euſebius places a town called "Jano," 12 miles from Schechem or Naplouſe, in the Acrabatene, and another 3 miles from Legio, ſouth.

JANOURA, in *Geography*, a town of Hindooſtan, in Bahar; 16 miles S.W. of Bahar. N. lat. 25° 8′. E. long. 85° 34′.

JANOW, a town of Poland, in the palatinate of Kaminiec; 44 miles N.N.W. of Kaminiec.—Alſo, a town of Poland, in the palatinate of Lublin; 36 miles S. of Lublin.—Alſo, a town of Lithuania, in the palatinate of Brzeſc; 24 miles S.W. of Pinſk.

JANOWIECZ, a town of Poland, in the palatinate of Sandomirz; 16 miles E. of Radom.

JANOWITZ, a town of Bohemia, in the circle of Kaurzim; 8 miles S. of Bentſchow.—Alſo, a town of Bohemia, in the circle of Pilſen; 30 miles S.S.W. of Pilſen. N. lat. 49° 19′. E. long. 13° 8.

JANOWITZKY, a town of Bohemia, in the circle of Czaſlau; 9 miles S.W. of Czaſlau.

JANOWKA, a town of Poland, in the palatinate of Volhynia; 40 miles N.E. of Zytomiers.

JANOWOW, a town of Auſtrian Poland, in Galicia; 16 miles W.S.W. of Lamberg.

JANOZKI, John Daniel, in *Biography*, was born at Wiemar in 1720. He diſtinguiſhed himſelf by his literary talents; and, by ſeveral uſeful works which he publiſhed, rendered great ſervice to the literary hiſtory of Poland. His principal works are, 1. "Letters on Criticiſm," in two volumes; 2. "Account of rare Poliſh Books in the Zaluſki library:" in this work he gives the titles of the books at full length, with an account of their contents; relates the hiſtory of them, makes known his opinion of their merits, and interſperſes the whole with intereſting anecdotes, reſpecting the lives, ſervices, and characters of the authors; 3. "A Dictionary of living Authors in Poland;" and, 4. "Polonia Litterata noſtri Temporis." In another work, entitled "Janociana, ſive clarorum atque illuſtrium Virorum Poloniæ Auctorum, Mecenatumque Memoriæ miſcellaneæ," the author gives a farther account of the Poliſh writers and their productions. His information, beſides the authors, comprehends alſo friends and promoters of the ſciences, whether Poles or foreigners, ſettled in that country. The two volumes comprize nearly 300 names in alphabetical order. Gen. Biog.

JANPOUR, in *Geography*, a town of Bengal; 20 miles S.W. of Midnapour. N. lat. 22° 15′. E. long. 87° 7′.

JAN-RAIA, in *Botany*, a name contrived by Plumier, in defiance of orthography, as uſual with his countrymen, to perpetuate the memory of the great John Ray, the word *Raia* being already beſtowed on a genus of fiſhes. Linnæus improved it to Rajania, to which article we refer our readers.

JANSAW, in *Geography*, a town of Pruſſia, in the province of Oberland; 24 miles E. of Marienwarder.

JANSENISM, in *Eccleſiaſtical Hiſtory*, the doctrine of Cornelius Janſen, commonly called *Janſenius*, biſhop of Ypres, in Flanders, chiefly with relation to grace and free-will.

Janſenius was born of Catholic parents in Holland, and ſtudied at Utrecht, Louvain, and Paris.

Janſeniſm made no great noiſe in the world, till after the death of its author, in 1638, when Fromond and Calenus, his executors, publiſhed his book, entitled "Auguſtinus." This book had been the labour of 20 years, was juſt finiſhed before the author's death, and publiſhed at Louvain in 1640. Janſenius was led to engage in this work by the controverſy that was carried on, in the beginning of the 17th century, between the Jeſuits and Dominicans, concerning the nature and neceſſity of divine grace; the deciſion of which had, towards the concluſion of the preceding century, been committed by Clement VIII. to a ſelect aſſembly of learned divines. Theſe arbiters, after much examination, delivered their opinion to the pontiff, that the ſentiments of the Dominicans, concerning grace, predeſtination, human liberty, and original ſin, were more conformable to the doctrine of ſcripture, and the deciſions of the ancient fathers, than the opinions of Molina, which were patroniſed by the Jeſuits. The former, they obſerved, inclined to the tenets of Auguſtine, and the latter bore a ſtriking reſemblance to the Pelagian hereſy. In conſequence of this declaration, Clement ſeemed reſolved to condemn the Jeſuits, and to determine the controverſy in favour of the Dominicans. In 1602 the Jeſuits prevailed on the old pontiff, by intreaties, menaces, arguments, and complaints, to re-examine this intricate controverſy, and to undertake the office of principal arbitrator. For this purpoſe he choſe a council, called the congregation *de auxiliis*, or the congregation of *aids*, compoſed of 15 cardinals, nine profeſſors of divinity, and five biſhops, which, in the ſpace of three years, aſſembled 78 times. The death of Clement, in 1605, prevented his pronouncing a deciſive ſentence with regard to this controverſy; nor are his ſentiments certainly known, though the Jeſuits and Dominicans contend, that his deciſion would have been favourable to their reſpective party. The proceedings of this congregation were reſumed, in 1605, by order of Paul V. the ſucceſſor of Clement. The reſult of many ſolemn deliberations was, that the whole controverſy, inſtead of being decided, ſhould be ſuppreſſed; and that each of the contending parties ſhould have the liberty of following their reſpective opinions. Paul V. declined a public determination of the controverſy, through apprehenſion of offending either the king of France, who protected the Jeſuits, or the king of Spain, who warmly maintained the cauſe of the Dominicans. The flame of controverſy broke out again with new violence in the year 1640, on the publication of Janſenius's book, which was divided into three parts: the firſt being hiſtorical, and containing a relation of the Pelagian controverſy, which aroſe in the fifth century: in the ſecond the author gives an accurate account and illuſtration of the doctrine of Auguſtine, relating to the conſtitution and powers of the human nature, in its original, fallen, and renewed ſtate: and the third part contains his doctrine relating to the aid of ſanctifying grace procured by Chriſt, and to the eternal predeſtination of men and angels. The deſign of Janſenius, in this work, was to ſhew in what manner the important points in debate had been underſtood and explained by Auguſtine, whoſe name and authority were univerſally revered in all parts of the Roman Catholic world. The Dominicans, who followed the ſentiments of Thomas Aquinas concerning the nature and efficacy of divine grace, derived very conſiderable advantage from this publication; whilſt the Jeſuits conſidered it as not only a tacit but formidable refutation of their opinions concerning human liberty and divine grace. They therefore exerted their moſt zealous endeavours to obtain a public condemnation of it from Rome; and they ſucceeded ſo far as to procure a prohibition of the peruſal of it, by the Roman inquiſitors, in the year 1641; and in 1642 a ſolemn bull of Urban VIII. condemning it as fraught with ſeveral errors that had been long baniſhed from the church. However, the deciſions of the inquiſition, and bull of the pontiff, were diſregarded in many parts of the Roman church. The doctors of Louvain, the followers of Auguſtine in the Netherlands, and the abbot of St. Cyran, and other famous and learned men, known under the denomination of the Authors of Port-royal, in France, oppoſed the proceedings of the Jeſuits, and ſtrenuouſly ſupported the cauſe of Janſeniſm, though the greateſt part of the French theologiſts engaged in behalf of the Jeſuits. The diſpute was now become very general and violent; and both parties exerted all their learning, art, intereſt, and power, to vindicate their reſpective cauſe. The Janſeniſts recurred to miracles in confirmation of their doctrine; and the hiſtory of the controverſy furniſhes many legendary tales of miraculous cures wrought in its favour; the firſt of theſe miracles occurs in 1656, when a pretended thorn of that deriſive crown that was put upon our Saviour's head by the Roman ſoldiers, is reported to have performed ſeveral wonderful cures in the convent of Port-royal: theſe were ſucceeded by other prodigies in the years 1661 and 1664. The ſame pious frauds were revived in 1725, 1727, and 1731, when the bones of the Abbé de Paris, which were interred at St. Medard, are ſaid to have been inſtrumental in performing innumerable miracles. However, the oppoſers of the doctrines of St. Auguſtine ſelected five propoſitions out of Janſenius's book, which, by the intereſt and importunities of the Jeſuits, were condemned by a public bull of Innocent X. in 1653. Theſe propoſitions contained the following doctrines:

I. Some commands of God are impoſſible to righteous men, even though they endeavour, with all their powers, to accompliſh them; the grace being wanting by which they ſhould be enabled to perform them. II. In the ſtate of corrupted nature, a man never reſiſts inward grace. III. To merit and demerit in the preſent ſtate of corrupt nature, it is not requiſite a man ſhould have that liberty which excludes neceſſity: that which excludes conſtraint is ſufficient. IV. The Semipelagians admitted the neceſſity of inward preventing grace to each act in particular, and even to the beginning of faith; but they were heretics, in regard they aſſerted, that this grace was ſuch as that the will of man might either reſiſt or obey it. V. It is Semipelagianiſm to ſay, that Jeſus Chriſt died, or ſhed his blood, for all men in general.

Of theſe propoſitions the pontiff declared the firſt four only heretical; but he pronounced the fifth raſh, impious, and injurious to the Supreme Being.

The Janſeniſts, availing themſelves of a ſubtle diſtinction invented by Arnaud, conſidered ſeparately in this controverſy the matter of doctrine, and the matter of fact, *i. e.* they acknowledged themſelves bound to believe that the five propoſitions above mentioned were juſtly condemned by the Roman pontiff; but they maintained, that the pope had declared, and conſequently, that they were not bound to believe, that theſe propoſitions were to be found in Janſenius's book, in the ſenſe in which they had been condemned. But this artful diſtinction was of no long ſervice to them; for Alexander VII. iſſued out a ſolemn bull in 1656, declaring, that the five propoſitions that had been condemned were the tenets of Janſenius, and were contained in his book; and in 1665 he ſent into France the form of a declaration, that was to be ſubſcribed by all who ſought preferment in the church, affirming that the five propoſitions were to be found in the book of Janſenius, in the ſame ſenſe in which they had been condemned by the church. This declaration produced the moſt deplorable tumults: the Janſeniſts maintained that the deciſions of the pope, ſo far as they were not confirmed by a general council, with regard to matters of fact, were fallible; and the Jeſuits, on the contrary, that unlimited confidence in the papal deciſions, both with reſpect to matters of fact and of opinion, was an eſſential character of a well-grounded and divine faith. The Jeſuits prevailed, and the Janſeniſts ſuffered exile, impriſonment, and various kinds of perſecution. Clement IX. in conſequence of the ſpirited remonſtrance of ſeveral biſhops, and the earneſt application of Anne Genevieve de Bourbon, ducheſs of Longueville, accepted a conditional ſubſcription to the declaration of his predeceſſor, allowing the Janſeniſts the privilege of interpreting it in their own ſenſe. This indulgence reſtored tranquillity, and produced a period in this controverſy, commonly called the "Peace of Clement IX."

but it was ſoon diſturbed again by a public edict of Lewis XIV. and totally aboliſhed after the death of the ducheſs of Longueville, in the year 1679. The famous Arnaud retreated on this occaſion into Holland, where he gained over the Romiſh congregations to the Janſeniſt party: and this party, ſecured under the protection of the Dutch government, has ſince prevailed in that country. The Janſeniſts were particularly offenſive to the Jeſuits, on account of the auſterity of their party, and the ſeverity that reigned in their ſyſtem of moral diſcipline and practical religion: for they have exclaimed againſt the corruptions of the church of Rome, both with regard to its doctrines and morals; and urged the neceſſity of inſtructing the people in the doctrines and precepts of Chriſtianity: with this view they have maintained that the holy ſcriptures and public liturgies ſhould be peruſed by the people in their mother tongue; and taught, that true piety does not conſiſt in the obſervance of pompous rites, or in the performance of external acts of devotion, but inward holineſs and divine love. This apparent piety of the Janſeniſts has, however, been unhappily blended with ſuperſtition and fanaticiſm; and they have been branded, not altogether without reaſon, with the denomination of Myſtics and Rigouriſts. (See QUIETISM.) The controverſy relating to Janſeniſm, which was one of the principal ſources of that diviſion which reigned within the papal juriſdiction, has been carried on with great animoſity in France and the Netherlands; and the Janſeniſts were for a conſiderable time much inferior to the Jeſuits in number, power, and influence, though they equalled their adverſaries in reſolution, prudence, and learning, and ſurpaſs them in ſanctity of manners and ſuperſtition, by which they excite the reſpect of the people. The United Provinces, particularly the Netherlands, have afforded them an aſylum on many occaſions: nevertheleſs the Jeſuits, though they had no legal toleration in the republic, have gained ground among the Dutch papiſts. They had a flouriſhing chapel in the city of Utrecht, and places of worſhip in ſeveral other cities, and in a great number of villages. Towards the cloſe of the 17th and the commencement of the 18th centuries, the cauſe of the Janſeniſts acquired reputation, by a French tranſlation of the New Teſtament, made by the learned and pious Paſchaſius Quenel, a prieſt of the Oratory; in the annotations to which he has artfully blended the quinteſſence of Janſeniſm. This work, at the inſtigation of the Jeſuits, and particular application of Lewis XIV. to the court of Rome, was condemned by Clement XI. who, in 1713, iſſued out the famous bull Unigenitus, in which Quenel's New Teſtament was condemned, and one hundred and one propoſitions contained in it pronounced heretical. The controverſy relating to Janſeniſm was much heated and increaſed, inſtead of being mitigated or ſuſpended, by this deſpotic and ill-judged edict. The Janſeniſts were again obliged to recur to writing, and even to miracles and viſions, and pretended revelations for the ſupport of their declining cauſe. However, the ſtorm of reſentment that afterwards aroſe againſt the Jeſuits, and that has been attended with the extinction of their order in Portugal, France, and in all the Spaniſh dominions, has diſarmed the moſt formidable adverſaries of Janſeniſm, and muſt be conſidered as an event highly favourable to the Janſeniſts. Moſheim's Eccl. Hiſt. vols. v. and vi. Eng. ed.

JANSENIUS, CORNELIUS, in *Biography*, a learned Flemiſh prelate, born at Hulſt in the year 1510, and educated at Ghent and Louvain, became a proficient in the Hebrew, as well as Greek and Latin languages, and devoted himſelf to the ſtudy of the ſcriptures. After occupying ſome ſubordinate ſtations in the exerciſe of his miniſtry, he was appointed profeſſor of divinity at Louvain, and admitted to the degree of doctor of divinity. In the famous council of Trent he commanded reſpect by his learning and modeſty, and upon his return to Flanders in 1568, he was nominated the firſt biſhop of Ghent, where he died in 1576. His works were "A Paraphraſe on the Pſalms," with copious notes, in Latin, printed at Louvain in 1569; "Notes on the Books of Proverbs, Eccleſiaſticus, the Canticles, and the Book of Wiſdom," printed in 1586: "Commentaries upon ſome Paſſages in the Old Teſtament," &c. His chief work, however, was the "Concordia Evangelica," firſt printed in 1549 and frequently reprinted. Of this work Dupin ſays, that it is the moſt perfect harmony of the four goſpels which had till that time appeared. To the author he pays a very diſtinguiſhed tribute of reſpect, as a very able expoſitor of ſcripture, and eminently characterized by his learning, judgment and perſpicuity. Dupin. Gen. Biog.

JANSENIUS, CORNELIUS, biſhop of Ypres and founder of the Janſeniſts, was born at a village near Leerdam, in Holland, in the year 1585; and having commenced his ſtudies at Utrecht, finiſhed them at Louvain in 1602. Removing to Paris on account of the ſtate of his health, which had been impaired by his aſſiduous application, he renewed his connexion with the abbot of St. Cyran, with whom he had commenced an acquaintance at Louvain. At Bayonne theſe two friends, after temporary ſeparation, met again, and concurred for five or ſix years in the ſtudy of the fathers, and particularly of St. Auguſtine. The abbot Du Verger was here promoted to a canonry in the cathedral, and Janſenius was placed at the head of a college. Upon Du Verger's removal to Paris, Janſenius returned to Louvain, and was ſoon appointed principal of the college of St. Pulcheria. In 1617, he took his degree of doctor of divinity, and was admitted one of the profeſſors of that faculty, in which office his talents and learning were conſpicuouſly diſplayed. On occaſion of the interference of the Jeſuits with ſome privileges belonging to the univerſity of Louvain, Janſenius was ſelected as a fit perſon to ſtate and vindicate their rights in an embaſſy to the king of Spain. For this purpoſe he made two journies into that country, *viz.* in 1624 and in 1625; and in the year 1630 he was appointed by the king profeſſor of the holy ſcriptures in the univerſity of Louvain. In this year he engaged in a controverſy with the Proteſtants; and this controverſy produced on his part a piece entitled "Alexipharmacum," printed in 1630; another under the title of "Notarum Spongia," &c. in 1631. Another controverſy of a ſimilar kind engaged his attention in 1634, in the conduct of which he had recourſe, in a manner that reflects diſgrace on his name and memory, to meaſures of perſecution againſt his adverſary, inſtead of contenting himſelf with the more appropriate weapons of argumentation. In the year 1635 he publiſhed a work, which, however acceptable to his patron, the Spaniſh monarch, conferred no honour on the ſpirit of the writer; it was entitled "Alexandri Patricii Armacani, Theologi, Mars Gallicus, ſeu Juſtitiæ Armorum et Fœderum Regis Galliæ Libri duo," and contains the moſt malignant and invidious exclamations againſt the ſervices which were rendered by France to the Proteſtants of Holland and Germany, to the prejudice of the Romiſh religion. In conſequence of this publication he was promoted to the biſhopric of Ypres. His conduct on this occaſion, and the publication of the above-mentioned book, are ſaid to have firſt excited the enmity of cardinal Richelieu againſt the author and his followers, and the partiality of the court in favour of the Jeſuits. Janſenius, however, ſeduloufly engaged in the reform of his dioceſe; but was prevented from accompliſhing the work which he had begun by his death, which happened in 1638, when he was about

53 years of age. He died highly reſpected for learning and other eminent qualifications, as well as for his piety and virtues. His works, beſides thoſe already mentioned, were "Tetrateuchus, ſive Commentarius in IV Evangelia," 4to. "Pentateuchus, ſive Commentarius in V libros Moyſis," 4to. "Analecta in Proverbia, Eccleſiaſten, Sapientiam, Habacuc, et Sophoniam," 4to.: "De Vi obligandi Conſcientias quam habent Edicta regia ſuper Re Monetaria:" "De Juramento quod publica Auctoritate Magiſtratui deſignato imponi ſolet;" "Oratio de interioris luminis Reformatione," and, more particularly deſerving of mention, his "Auguſtinus, ſeu Doctrina Sti. Auguſtini de Humanæ Naturæ Sanctitate, Ægritudine, Medicina, adverſus Pelagianos et Maſſilienſes," fol. This latter work occaſioned the controverſy, of which we have given an account under the article Jansenism, to which the reader is referred. Dupin. Bayle. Moſheim.

Jansenius, James, a learned theological profeſſor at Louvain, was born of Catholic parents at Amſterdam in the year 1547, and completed his ſtudies at Louvain, whither he was ſent for this purpoſe in 1564. In 1575 he was admitted a licentiate in divinity, and was afterwards nominated firſt preſident of the new Auguſtine college. Having riſen gradually to ſeveral offices of honour and duty in the church, he was at laſt, in 1614, appointed dean of the collegiate church of St. Peter's at Louvain; and died in 1625. Of his works, which have been held in high eſteem, we ſhall enumerate "Expoſitio in Prophetam Job," folio; "Commentarius et Expoſitio in Pſalmos Davidicos," 4to.; "Commentarius in Canticum Canticorum," 8vo.; "Expoſitio in Evang. Joann." 8vo.; "Inſtitutio Catholici Eccleſiaſtæ;" "Liturgica;" "In ſacrum Miſſæ Canonem;" "Enarratio Paſſionis," &c. &c. Moreri. Gen. Biog.

JANSI, in *Geography*, a town of Hindooſtan, in the circar of Gohud; 110 miles S. of Agra. N. lat. 25° 32'. E. long. 78° 57'.

JANSONS, Messrs. in *Biography*, two brothers, the moſt celebrated performers on the violoncello in France, at the time when M. Laborde publiſhed his "Eſſais ſur la Muſique," and conſequently, according to that author, "the beſt in the univerſe." Theſe were rivals of the two brothers, Dupont, whoſe performance gave equal delight. It was hardly poſſible to play an adagio with more delicacy, taſte, and feeling than the eldeſt Janſon. The eldeſt Dupont's execution was truly aſtoniſhing; and it is among extraordinary circumſtances, that four ſuch performers on the ſame inſtrument ſhould flouriſh at the ſame time in one city.

JANSSENS, Abraham, an hiſtorical painter, born at Antwerp in 1569. He poſſeſſed great powers in the practical parts of the arts, but, negligent and diſſipated, he waſted thoſe powers, and fell into indigence. Being contemporary with Rubens, he was mortified at the ſucceſs of his younger rival, who drew from him the admiration of the public, and in a fit of ill humour challenged him to paint a picture for fame; deſiring to ſubmit their reputation to impartial judges. This propoſal was rejected by Rubens, who anſwered in a mild and becoming manner, that he ſubmitted to him; and the world would do juſtice to them both. The churches of the Low Countries poſſeſſed many excellent works of this maſter; but his chef-d'œuvre is the Reſurrection of Lazarus in the gallery at Duſſeldorf.

Janssens, Honorius Victor, a painter, born at Bruſſels in 1664. Having applied ſeduloſly to the practice of the art, and made much proficiency, he was employed by the duke of Holſtein at a penſion of 800 florins, and afterwards enabled, by the ſame munificent patron, to purſue his ſtudies in Italy.

In Rome he ſtudied the works of Raphael, and became eminent in fame. He afterwards aſſociated with Tempeſta the landſcape painter, and painted figures in his pictures.

In general his pictures are ſmall in ſize, and have ſomewhat of the ſtyle of Albano. His invention was copious, and his works are very pleaſing. He died in 1739, at the age of 75.

Janssens, Cornelius, called alſo *Johnſon*, a portrait painter of very extraordinary merit. He was born at Amſterdam; when, is not exactly aſcertained. It appears that he painted in England as early as the year 1618, in the reign of James I. Here he continued to paint with very great and deſerved ſucceſs till the arrival of Vandyke, whoſe tranſcendent talents and taſte Janſſens was not quite equal to cope with. On the breaking out of the civil war he returned to his own country, in 1648; leaving behind him a number of excellent characteriſtic portraits in the great families of this iſland.

He retired firſt to Middleburg, and afterwards to Amſterdam, where he died in 1665.

His ſtyle of deſign was formal and void of taſte, but his features are juſtly marked, and the faces of his portraits have great character, and an air of nature, poſſeſſing much ſweetneſs of tone in the colouring, and finiſhed very highly; too much ſo indeed. His pictures are generally on wood, and with black draperies; an arrangement adopted frequently by Rubens and Vandyke.

JANTECA, in *Geography*, a town of Hindooſtan, in the circar of Adoni; 59 miles N.W. of Adoni.

JANUARIUS, St., in *Biography*, biſhop of Benevento, who was beheaded at Puzzuoli in the perſecution of Diocletian. His body was brought to Naples, where a beautiful chapel is erected to his memory in the cathedral. What renders his name remarkable, is a pretended miracle exhibited yearly by the prieſts, who ſay they have the ſaint's real blood encloſed in a phial, which is either liquid or congealed at the pleaſure of theſe devout gentlemen. This wretched mummery is always practiſed when Mount Veſuvius ſhews ſigns of a convulſion, and the people believe that the influence of Januarius will prevent an earthquake. This pious fraud will ſcarcely live beyond the changes which are now taking place in Italy. Moreri. Addiſon's Travels.

Januarius, *St.*, *Order of*, was inſtituted July 2, 1738, by the Infant Don Carlos, then king of Jeruſalem and the two Sicilies, and afterwards king of Spain, who was grand maſter of the order, and the honour of which devolved on the king of the two Sicilies. The enſign of the order is a ſtar of eight points, enamelled white, edged with gold: in the centre is repreſented a biſhop, with half his body in clouds: on the reverſe is a book, on which are two vials red, ſurrounded with two palms, all enamelled in proper colours. The collar of the order is of gold, compoſed of caſtles, banners, mitres, roſes, &c. The badge in ordinary days is worn pendant to a broad deep-blue ribband.

Januarius's *Blood*. See *Religious uſes of* Blood. The head of this ſaint is occaſionally carried in proceſſion at Naples, in order to ſtay the eruption of Veſuvius.

JANUARY, the name of the firſt month of the year, according to the computation now uſed in the Weſt.

The word is derived from the Latin Januarius, a name given it by the Romans, from Janus, one of their divinities, to whom they attributed two faces; becauſe on the one ſide the firſt of January looked towards the new year; and, on the other, towards the old one. The word Januarius may alſo be derived from *janua*, gate; in regard to this month being the firſt, which is, as it were, the gate of the year.

January and February were introduced into the year by Numa Pompilius; Romulus's year beginning in the month of March.

The Chriſtians heretofore faſted on the firſt day of January, by way of oppoſition to the ſuperſtition of the heathens, who, in honour of Janus, obſerved this day with feaſtings, dancings, maſquerades, &c.

JANUB, in *Geography*, a town of Perſia, in the province of Kerman; 120 miles E. of Kabis.

JANVILLE, a town of France, in the department of the Eure and Loire, and chief place of a canton, in the diſtrict of Chartres, 21 miles S.E. of it. The place contains 1803, and the canton 10,368 inhabitants, on a territory of 290 kiliometres in 23 communes.

JANUM, in *Scripture Geography*, a city of Judah, mentioned Joſh. xv. 53.

JANUNA, in *Geography*, a town of Hindooſtan, in Goondwanah; 20 miles N. of Chanda.

JANUS, in *Mythology*, a divinity of the Romans, who, as it is ſaid, had the cuſtody and care of their gates (Janua). As to the origin of this deity, ancient authors are not agreed; but the moſt general opinion is, that he was not a native of Italy, but that he came thither from Perrhebia in Theſſaly, where, being a deſcendant from Deucalion by Ion his ſon, as fabulous hiſtory reports, he was originally ſettled. Ryckius dates the arrival of Janus with his colony in Italy in the 146th year before the taking of Troy; but as Theophilus of Antioch aſſures us, that Chronos, called by the Latins Saturn, and who was received by Janus into Italy, lived 321 years before the taking of Troy, there muſt have been more than an age and a half between him and Janus. Hence we ſhould be led to conclude, either that Saturn never came into Italy, or that he arrived there long before the time of Janus. Antiquity, however, aſcribes coexiſtence to theſe princes: therefore we muſt ſuppoſe that there was another Saturn, contemporary with Janus, whoſe original name was Stereus, the father of Picus; and that being deified by Janus, he was, after his apotheoſis, denominated Saturn. To this purpoſe we learn from Aurelius Victor, that Janus, having landed in Italy, and made various conqueſts, took poſſeſſion of a mountain, and there built a city which he called after his own name, "Janiculum." In the time of his reign, Saturn, baniſhed from his own country, landed alſo in Italy; where Janus kindly received him, and made him his aſſociate in the empire. Saturn built a fortreſs near Janiculum and called it "Saturnia." The part of the country which Janus firſt occupied was Latium; and it is ſaid that the inhabitants, before the arrival of this prince, led a ſavage life, without laws and almoſt without religion; and that he ſoftened the ferocity of their manners, brought them to live together in cities and villages, gave them laws, and cauſed his ſubjects to enjoy under his reign a happineſs which they had never known before; accordingly this period was denominated the golden age. From this change of condition, produced by the counſels and influence of Janus, the inhabitants rendered him divine honours; and he has been regarded, not as one of the great gods, but as one of the Indigetes. To him alſo, as we learn from Macrobius, all the paſſages from or to the houſes were conſecrated; becauſe, according to the Mythologiſts, every family in the time of Janus was diſtinguiſhed by religion and ſanctity. It is added, that he was the firſt who built temples, and inſtituted ceremonies of religion. Concerning the reaſon of his being repreſented with two faces, we have different accounts. Some ſay that he was thus exhibited, becauſe he commanded two nations; or becauſe, upon his ſharing the kingdom with Saturn, he cauſed medals to be ſtruck, bearing on one ſide a head with two faces, to expreſs that his power was divided between Saturn and himſelf, and that his dominions were to be governed by the counſels of both. Plutarch gives another account and ſays, that this repreſentation was intended to intimate that this prince and his people had, by wiſe and ſalutary counſels, paſſed from a wild ruſtic life to a life of civilization and humanity. Others ſay this appearance, or "bifrons," *i. e.* double faced figure, denoted that Janus knew the paſt and foreſaw the future. Others again, who are of opinion that Janus repreſented the ſun, pretend that he is exhibited double, becauſe he opens the day when he riſes, and ſhuts it when he ſets. From Athenæus we learn that Janus had two faces, one before, the other behind; and that he gave his name to a river and to a mountain on which he had ſettled. He is ſaid to have been the firſt who invented crowns, ſhips, and barges, and who coined money of braſs. Hence it happens, that ſeveral towns in Greece, Italy, and Sicily, coin money with a double head, with a barge on the reverſe, or a crown, or a ſhip. Some authors ſay, that the two faces repreſent his preſiding over *January* (which ſee); and others ſay that the two heads are thoſe of Janus and Saturn. For an account of his temple; ſee the next article.

JANUS, *Temple of*, in *Ancient Hiſtory*, a ſquare building at Rome (as ſome ſay) of entire braſs, erected by Romulus, after he had made peace with the Sabines, or, as Rollin ſays, by Numa, as an acknowledgment to the gods for the tranquillity Rome enjoyed at his acceſſion to the throne; it was ſo large as to contain a ſtatue of Janus five feet high, with two faces, intimating, that the Romans and Sabines were united into one people, and that the two kings, Romulus and Tatius, made but one head to govern them. It had brazen gates on each ſide, which were always kept open in time of war, and ſhut in time of peace. But the Romans were ſo much engaged in war, that this temple was ſhut only twice from the foundation of Rome till the reign of Auguſtus, and ſix times afterwards. It was *firſt* ſhut during the long reign of Numa, who inſtituted this ceremony. 2. In the year of the city 519, B. C. 235, after the end of the firſt Punic war. 3. By Auguſtus, after the battle of Actium, in the year of Rome 723, B. C. 31. 4 On Auguſtus's return from the war which he had againſt the Cantabrians in Spain, A. U. C. 729. B. C. 25. 5. Under the ſame emperor, in the year of Rome 744, about ten years before the birth of Chriſt, when there was a general peace throughout the whole Roman empire, which laſted twelve years. 6. Under Nero, A. U. C. 811. A. D. 58. 7. Under Veſpaſian, A. U. C. 824. A. D. 71. 8. Under Conſtantius, when upon Magnentius's death he was left ſole poſſeſſor of the empire, A. U. C. 1105. Some diſpute the authority on which it is ſaid to have been ſhut by Conſtantius, and ſay that the laſt time of its being ſhut was under Gordian, about the year of Rome 994, A. D. 241. Virgil gives us a noble deſcription of this cuſtom:

> "Sunt geminæ Belli portæ, ſic nomine dicunt, &c."
> Æn. lib. vii. ver. 607, &c.

The origin of this cuſtom is not certainly known. Accordingly when the conſul, appointed to command the army, was ready to ſet out, he went to this temple, attended by the ſenate, the chief citizens, and his ſoldiers in their military dreſſes, and opened its gates. The new conſuls took poſſeſſion of their offices in this temple; whence they were ſaid to open the year. See Macrob. Saturn. lib. i. cap. 9. and Virgil, Æn. lib. vii. v. 601, 622.

This temple was in the Roman forum, and Procopius ſays, that in his time the remains of it were ſtill to be ſeen there over-againſt the capitol, with a little niche of braſs, in which was his ſtatue.

There was a ſecond temple of Janus, built by Cn. Duillius, in the Forum Olitorum, or herb-market, after the firſt Carthaginian war; and this, being fallen into decay, was rebuilt by the emperor Tiberius, according to Tacitus, Annal. l. ii.

A third temple of Janus, called "Templum Jani Auguſti," was ſituated in the Velabrum, a little valley, on one ſide of the Forum Boarium, or ox-market, between the capitol and mount Aventine. It was a ſquare building of the Ionic order, and entirely of marble. Some ſay, that it was built by Numa, and repaired by Auguſtus; but others diſpute its high antiquity. This was the temple of Janus quadrifrons, or the four-faced Janus; and owed its origin as well as its name, to the following accident, according to Servius. The Romans, he ſays, after the taking of Faleria in Tuſcany, having met with a ſtatue of Janus that had four faces, were deſirous to have ſuch a one at Rome; and to honour him the more, they built for him a temple with four fronts, each having twelve niches in it, with a great gate, which denoted the four ſeaſons, and the twelve months of the year. Varro ſays there were alſo twelve altars in this temple, dedicated to Janus, each of which repreſented a month of the year.

JANYSUS, in *Ancient Geography*, a town of Syria, ſituated on the ſea-coaſt, between Gath and the Sirbonide lakes, according to Herodotus, who adds, that it is at the diſtance of three days' journey from mount Caſius.

JANZE', in *Geography*, a town of France, in the department of the Ille and Vilaine, and chief place of a canton, in the diſtrict of Rennes; 5 miles S. of Chateau-Girons. The place contains 3513, and the canton 12,815 inhabitants, on a territory of 172½ kilometres, in 6 communes.

JAO, a town of Japan, in the iſland of Niphon; 35 miles S. of Meaco.

JAOURHORISI, a town of Aſiatic Turkey, in the province of Diarbekir; 65 miles W. of Niſibin.

JAP. Among Hindoo myſtics great merit is aſcribed to abſtraction, or ſilent contemplation of the attributes of the deity. This is eſſayed by enthuſiaſtic individuals moſt perſeveringly; to the length, as is pretended, of complete abſorption of all intellectual power, by a ſort of ſpiritual union with the attribute or deity thus propitiated. Another ſpecies of abſtract devotion is called *Tapas* (which ſee); but this includes alſo penance and auſterity; whereas jap, we believe, is confined to abſtraction, induced by ſilent and intenſe contemplation. To promote this, the aſpirant ſometimes continues with cloſed eyes, or with his eyes fixed on the tip of his noſe. Roſaries are alſo uſed in the commencement of this ſpecies of devotion, or by thoſe who intend only a ſhort exerciſe of it. Such roſaries are called japmala.

JAPACANI, in *Ornithology*, a ſpecies of *Oriolus*; which ſee.

JAPAN, in *Geography*, a kingdom or empire, conſiſting of ſeveral iſlands, and ſituated near the eaſtern extremity of Aſia, between the 30th and 41ſt degree of N. latitude, and the 131ſt and the 142d degree of E. longitude. The coaſt of Japan is, according to Kæmpfer, the moſt dangerous in the whole world; and captain Gore found ſtrong and rapid currents ſetting along the eaſtern coaſt, which he has particularly deſcribed. (See Cook's Third Voyage, vol. iii. p. 406.) This empire has been called by Marco Polo Zipangri, or Zipangu; by the inhabitants themſelves, Nipon, Niphon, or Niſon; and by the Chineſe Sippon, and Jepuen. The principal iſlands of which it conſiſts, omitting ſeveral of a ſmaller ſize, are, towards the S.W., *Kiuſiu* (called alſo Ximo, Saikokf, or the weſtern country); and Sikokf or Xicogo; N.E. of theſe Nipon or Niphon, the moſt important; and N. of Niphon, Jeſſo, Jedſo, or Chicha. The Japaneſe iſlands probably derive their original population from the Chineſe by way of Corea, though their languages are radically diſtinct. It appears from Kæmpfer's account, that the Japaneſe themſelves acknowledge their government and civilization to have been derived from China. This author diſtinguiſhes three epochs in their hiſtory; the fabulous, the doubtful, and the certain. The latter period commences with the hereditary ſucceſſion of the eccleſiaſtical emperors, from the year 660 before the Chriſtian era, and extends to the year of Chriſt 1585, during which 107 princes of the ſame lineage governed Japan. At the laſt period the ſecular princes aſſumed the ſupreme authority. The ſeveral reigns are generally pacific, though at diſtant intervals the Mandſhurs and Coreans occaſionally invaded Japan, but were always defeated by the valour of the Japaneſe. An attempt was made in the reign of Gouda by the Moguls, to make a grand invaſion of Japan, after having conquered China about fourteen years before. But the formidable fleet, conſiſting, according to exaggerated report, of 4000 ſmall veſſels, which contained an army of 240,000 men, was diſperſed by a furious tempeſt, which the Japaneſe devoutly aſcribed to the gods, their protectors.

The religion of the Japaneſe is Polytheiſm, intermixed with an acknowledgment of a ſupreme creator. Their two principal ſects are thoſe of "Sinto" and of "Budſdo." The firſt acknowledges a ſupreme being, far ſuperior to the worſhip of man, and they therefore adore the inferior deities as mediators. They believe that the ſouls of the virtuous have a place aſſigned them immediately under heaven, while thoſe of the wicked wander in the air till they expiate their offences. They abſtain from animal food, deteſt bloodſhed, and will not touch any dead body. Thunberg further ſays, that though it is unneceſſary on any occaſion to pray to the gods, whom they call "Sin," or "Kami," becauſe they know all things, they have both temples and certain ſtated holidays. Theſe temples conſiſt of ſeveral apartments and galleries, with windows and doors in front, which may be taken away and replaced at pleaſure, according to the cuſtom of the country. The floors are covered with ſtraw mats, and the roofs overhang an elevated path, in which people walk around the temples. In theſe temples there is no viſible idol or image for repreſenting the ſupreme inviſible being; but they ſometimes keep a little image in a box, which repreſents ſome inferior divinity to whom the temple is conſecrated. In the centre of the temple is often placed a large mirror of well poliſhed metal, deſigned to remind thoſe that come to worſhip, that in like manner as their perſonal blemiſhes are faithfully pourtrayed in the mirror, ſo do the ſecret blemiſhes and evil qualities of their hearts lie open and expoſed to the all-ſearching eyes of the immortal gods. The prieſts are either ſecular or monaſtic. Their feſtivals and modes of worſhip are cheerful and gay, for they regard the gods as beings who ſolely delight in diſpenſing happineſs. The firſt day of the month is always kept as a holiday; ſo is the firſt day of the year: and beſides theſe they have three or four other grand feſtivals. There are alſo ſeveral orders of monks and nuns.

The ſect of "Budſdo," which is the ſame with that of Budha, or *Boodh* (which ſee), was imported from Hindooſtan; and paſſing through Chini and Corea, its tenets have been blended with foreign maxims; but the doctrine of the metempſychoſis remains; wicked ſouls being ſuppoſed to migrate into the bodies of animals, till they have undergone a due purgation.

The doctrine of their philoſophers and moraliſts, called "Shuto," reſembles the Epicurean, though it is blended with the tenet of Confucius, that the pureſt ſource of pleaſure is a virtuous life. This ſect admits a ſoul of the world; but does not allow infinite gods, temples, or religious forms.

Soon after this country was diſcovered by the Portugueſe, miſſionaries from the Jeſuits arrived in 1549, and they and their ſucceſſors continued to diffuſe their doctrine till 1638, when 37,000 Chriſtians were maſſacred. Before this period various perſecutions had occurred; and in 1590 upwards of 20,000 are ſaid to have periſhed. The Chriſtian faith has, indeed, been ſo perverted and diſgraced by the pride and avarice of the Portugueſe, and the vain ambition of the Jeſuits, that ſince the above-mentioned memorable epoch, Chriſtianity has been held in the greateſt deteſtation; and the croſs, with its other ſymbols, are annually trampled under foot; nevertheleſs, it is a fable that the Dutch are conſtrained to join in this ceremony.

As to the government of Japan, the "Kubo," or ſecular emperor, is now the ſole monarch; but till near the cloſe of the 17th century the "Dairis," pontiffs or ſpiritual monarchs, held the ſupreme authority. The ſecular prince, in concurrence with the Dairi, confers two honorary ranks, correſponding to thoſe of our noblemen and knights. The Dairi reſides at Miaco, and his court remains, though not in its former ſplendour. Each province is governed by a reſident prince, who is reſponſible to the emperor for his adminiſtration. The emperor derives his chief revenue from his own eſtate, conſiſting of five inferior provinces and ſome detached towns. Each prince enjoys the revenues of his fief, with which he ſupports his court and military force, repairs the roads, and defrays every civil expence. The princes of the firſt dignity are ſtyled "Daimio," and thoſe of inferior rank "Siomio:" and they are generally hereditary. Upon the whole we may obſerve, that the conſtitution of Japan conſiſts of an abſolute hereditary monarchy, ſupported by a number of abſolute hereditary princes; whoſe jealouſy of each other's power conſpires with domeſtic pledges to render them ſubſervient to the ſupreme head. The laws, according to Thunberg, are few, but rigidly and impartially enforced. The code is written in large letters, and poſted up in every town and village. Death is the common puniſhment of crimes, but ſentence of death muſt be ſigned by the privy council at Jeddo. Parents and relations are anſwerable for the crimes of thoſe whoſe moral education they ought to have ſuperintended. The police is excellent; each town having a chief magiſtrate, and each ſtreet a commiſſary, elected by the inhabitants to guard property and tranquillity. Two inhabitants alternately patrole the ſtreets by night to prevent fire.

The population of the Japaneſe empire, which is very conſiderable, is not eaſily aſcertained. Its regular military force is eſtimated at about half a million, the infantry being 468,000, and the cavalry 58,000, and if the army be doubled, the population may be ſtated at a million: but it may be more exactly deduced from ſuppoſing that it is equal to that of China; and as the former country is only about one-tenth part of the ſize of the latter, the whole number of people will be about 30,000,000. The character of the people is ſingularly brave and reſolute. The navy ſcarcely deſerves notice. The Japaneſe veſſels are open at the ſtern, ſo that they cannot bear a boiſterous ſea. Spanberg, however, deſcribes two kinds of veſſels, one anſwering to Kæmpfer's, and another, which he calls buſſes, and in which, he ſays, they make their voyages to the neighbouring iſlands. As Japan conſiſts of iſlands, and is deſtitute of a navy, it can have no external political importance; but it has little to apprehend from any neighbouring power. The revenues of the empire may be ſtated at 28,340,000*l.* ſterling, beſides the provinces and cities that are immediately ſubject to the emperor, who, beſides theſe, has a conſiderable treaſure in gold and ſilver, depoſited in cheſts of 1000 taels, each being equal in value to a Dutch rix-dollar, or about 4*s.* 4*d.* Engliſh money.

The Japaneſe, with reſpect to their perſons, are well made, active, eaſy in their motions, and having ſtout limbs, though leſs ſtrong and athletic than the other northern inhabitants of Europe. The men are of a middling ſize, with yellowiſh complexions, though ſome few, eſpecially the women, are almoſt white. Their narrow eyes, very much ſunk in the head, and high eye-brows, reſemble thoſe of the Chineſe and Tartars. The eyes incline to black, and the eye-lids form in the great angle of the eye a deep furrow, which diſcriminates them from other nations. Their heads are generally large, their noſes, though not flat, rather thick and ſhort; their hair black, thick, and ſhining in conſequence of the uſe of oils. The mode of the men's head-dreſs is ſingular; the middle part of their heads, from the forehead very far back, is cloſe ſhaven. The hair remaining round the temples and nape of the neck is turned up and tied on the top of the head into a kind of bruſh, which is lapped round with white thread and bent backwards. The women preſerve all their hair, and, drawing it together on the top of the head, roll it round a loop, and faſtening it down with pins, to which ornaments are fixed, draw out the ſides till they appear like little wings, behind which they ſtick a curl. Phyſicians and prieſts ſhave the head entirely, and are thus diſtinguiſhed from the reſt of the people. The faſhion of their clothes has undergone little alteration from remote antiquity. They conſiſt of one or more looſe gowns, tied about the middle with a ſaſh; thoſe of the women being much longer than the men's; in ſummer they are very thin, and in winter quilted with ſilk or cotten wadding. Perſons of rank have them made of ſilk; and thoſe of the lower claſs of cotton ſtuffs. Thoſe of the women are ornamented with gold and ſilver flowers woven into the ſtuff. At the breaſt theſe gowns are open, and they have wide ſleeves, which ſerve as pockets. Some uſe drawers; but their legs are naked. They wear ſandals of rice-ſtraw; in winter they have ſocks of linen, and in rainy or dirty weather wooden ſhoes. They never cover their heads except when they travel, and then uſe conical caps made of ſtraw: for defending themſelves againſt the rain or ſun, they uſe fans or umbrellas. In their ſaſh they faſten the ſabre, fan, and to bacco-pipe. Their houſes are built with upright poſts, croſſed and wattled with bamboo, plaiſtered within and without, and white-waſhed. They are generally of two ſtories; the roofs are covered with large and heavy pantiles: the floors are covered with planks, on which they lay mats, filled with ſtraw. The whole houſe conſiſts of one large room, divided by wooden partitions; and their windows are frames of wood, ſeparated into ſquares, filled up with thin white paper, and ſufficiently tranſparent to anſwer the purpoſe of glaſs. In their rooms they have no kind of furniture; not even beds. Their cuſtom is to lie down upon their heels on the mats, which are always ſoft and clean. Their victuals are ſerved up on a low board, raiſed a few inches from the floor, and only one diſh at a time. They have mirrors, made of a compound metal, which they uſe only at their toilets. In the ſeverity of winter, they are obliged to warm their houſes from November to March; but they have neither fire-places nor ſtoves ; inſtead of theſe they uſe copper-pots ſtanding upon legs; theſe are lined on the inſide with loam, on which are laid aſhes, and upon them lighted charcoal, ſo prepared as not to render its fumes dangerous. The uſe of tobacco, probably firſt introduced by the Portugueſe, is very common among both ſexes, both old and young ; and the ſmoke is blowed out through the noſtrils. The firſt compliment offered to a ſtranger in their houſes is a diſh of tea and a pipe of tobacco. Their pipes have mouth-pieces and bowls of braſs, or white copper. The hollow of the bowl is ſo ſmall as ſcarcely to contain an ordinary pea ; and the tobacco is cut as fine as a hair about a finger's length ; and is rolled up in ſmall balls like pills, to fit the ſmall hollow in the bowl of the pipe. Every houſe has a bath, which, as the people are very cleanly, is daily uſed by the whole family. You ſeldom meet a man, who has not his diſtinguiſhing mark imprinted on the ſleeves and back of his clothes, in the ſame colour in which the pattern is printed. Their uſage of names differs from that of all other nations. The family name is never made uſe of, except in ſigning ſolemn contracts, and the particular names by which individuals are diſtinguiſhed in converſation varies according to the age or ſituation of the perſon who makes uſe of it ; ſo that in ſome caſes, the ſame perſon, in his life-time, is known by five or ſix different names. They reckon their age by even years, not regarding whether they were born at the beginning or the end of a year. In general, the Japaneſe are a highly civilized people, diſplaying great diverſity of character ; but their virtues far outweigh their vices. Obedience to parents and reſpect to ſuperiors form the characteriſtic of this nation. Their ſalutations, or mutual intercourſe among equals, are diſtinguiſhed by civility and politeneſs ; and to theſe childern are early accuſtomed by the example of their parents. Their pride is uſeful, as it prevents their ſtooping to the mean tricks of the maritime Chineſe. Though polygamy be allowed, they acknowledge only one wife ; the others being merely concubines. Marriages are conducted by the parents or relations ; and domeſtic tranquility is inſured by the wife's being under the abſolute diſpoſal of her huſband, the laws allowing her no kind of claim if ſhe incurs his diſpleaſure. Examples of infidelity are rare. In caſe of ſeparation, the wife is condemned to the ignominy of having her head always ſhaven. The marriage ceremony is always performed before an altar, by the bride's lighting a torch, from which the bridegroom kindles another. The bodies of the diſtinguiſhed dead continue to be burned, while others are buried. Periodical viſits are paid to the tombs, beſides the feſtival of lanthorns, held as in China, in honour of the departed. As to food and ſauces thoſe of the Japaneſe are very various. Their general drink is "Sarki," or beer made of rice, which laſt article ſupplies the place of bread. They uſe many kinds of vegetables and fruits. Tea is univerſally uſed; but wine and ſpirituous liquors are unknown. The Japaneſe feſtivals, games, and theatrical amuſements, equal thoſe of the moſt civilized nations. Dancing girls are common ; and the introduction of boys indicates an abominable propenſity here, as in China, neither reputed a crime nor a ſingularity.

The language of the Japaneſe, of which Thunberg has publiſhed a curious vocabulary, ſeems to have little connection with the monoſyllabic ſpeech of the Chineſe. In ſciences and literature the Japaneſe are not inferior to few of the oriental nations. In domeſtic economy, deemed here a ſcience, and alſo in the hiſtory of his country, every perſon in Japan excels. Aſtronomy is cultivated, but to no very important and uſeful purpoſe. The art of printing is of ancient uſage, but they uſe blocks and not moveable types, and impreſs only one ſide of the paper. They are excellent workmen in iron and copper ; and yield to none in manufactures of ſilk and cotton, and in the art of varniſhing wood. Glaſs is common, and they make teleſcopes. The porcelain is deemed ſuperior to that of China. Their celebrated varniſh is obtained from the "rhus vernix." They have many varieties procured from the bark of a ſpecies of mulberry tree ; and their woods diſplay incomparable ſkill. They have many ſchools, in which the children are taught to read and write ; and their education is accompliſhed without perſonal chaſtiſement, while courage is inſtilled by the repetition of ſongs in praiſe of deceaſed heroes.

Although the mountains of Japan prevent the formation of canals, their roads are kept in excellent order, and the proximity of the ſea renders inland navigation almoſt unneceſſary. Their inland commerce, being free from impoſts, is very conſiderable ; and their external commerce, though confined to the Dutch and Chineſe, is extenſive. The harbours are crowded with large and ſmall veſſels ; the high roads with various goods ; and the ſhops are well repleniſhed. Large fairs are held in different places, to which a great multitude of people reſort. Their trade with China is the moſt important, and conſiſts of raw ſilk, ſugar, turpentine, drugs, &c. while the exports are copper in bars, lacquered ware, &c. The Dutch export copper and raw camphire, for which they give in return ſugar, ripe cloves, Japan wood, ivory, tin, lead, tortoiſe-ſhell, chintzes, and a few other trifles. In their intercourſe both with the Dutch and Chineſe, they trade with companies of privileged merchants. As the Dutch company have not been accuſtomed to pay duty in Japan, either on their exports or imports, they uſed to ſend an annual preſent to the court, conſiſting of cloth, chintzes, ſuccotas, cottons, ſtuffs, and trinkets. Thunberg repreſents the profits of the Dutch trade as very inconſiderable, ſo that the company employed only two ſhips. The Japaneſe coin is of a remarkable form : the gold being called "Kobango," the ſilver, called "Kodama," ſometimes repreſents "Daikok," the god of riches, ſitting upon two barrels of rice, with a hammer in his right hand, and a ſack at his left. The "Seni" of copper or iron, are ſtrung like the Chineſe pieces of ſimilar value.

The climate of Japan is variable. In ſummer the heat is violent, and if it were not moderated by ſea-breezes, would be intolerable. The cold in winter is ſevere. The falls of rain commence at Midſummer, and to theſe Japan owes its fertility, and alſo its high ſtate of population. Thunder is not unfrequent : tempeſts, hurricanes, and earthquakes, are very common. From Thunberg's thermometrical obſervations it appears that the greateſt degree of heat at Nagaſaki, was 98° in Auguſt, and the ſevereſt cold in January 35°. The face of the country preſents, beſides ſome extenſive plains, more generally mountains, hills, and valleys ; the coaſt being moſtly rocky and precipitous, and inveſted with a turbulent ſea. It is alſo diverſified with rivers and rivulets, and many ſpecies of vegetation. The ſoil, though barren, is rendered productive by fertilizing ſhowers and manure, and by the operations of agricultural induſtry. Agriculture, as Thunberg informs us, is here well underſtood, and the whole country, even to the tops of the hills, is cultivated. Free from all feudal and eccleſiaſtical impediments, the farmer applies himſelf to the culture of the ſoil with diligence and vigour. Here are no commons, and it is a ſingular circumſtance, that if any portion be left uncultivated, it may be ſeized by a more induſtrious neighbour. The Japaneſe mode of manuring is to form a mixture of all kinds of excrements, with kitchen refuſe, which is carried in pails into the field, and poured with a ladle upon the plants, when they have attained the height of about ſix inches, ſo that they thus inſtantly receive the whole benefit. They are alſo very attentive to weeding. The ſides of the hills are cultivated by means of ſtone walls, ſupporting broad plats ſown with rice or eſculent roots. Rice is the chief grain: buck-wheat, rye, barley, and wheat being little uſed. A kind of potatoe (convolvulus edilis) is abundant with ſeveral ſorts of beans and peas, turnips, cabbages, &c. From the ſeed of a kind of cabbage lamp oil is expreſſed; and ſeveral plants are cultivated for dyeing; with the cotton ſhrubs, and mulberry trees for the food of ſilk-worms. The varniſh and camphire trees, the vine, the cedar, the tea tree, and the bamboo reed, not only grow wild, but are planted for numerous uſes.

The principal rivers of Japan are the Nogaſa, Jedoguva, Ojingawa, Fuſigawa, Sakgawa, Jodo or Yodo, Ujin or Ojin, Oomi, and Aſka. One of the chief lakes is that of Oitz, ſaid to be 50 Japaneſe leagues in length, each about an hour's journey on horſeback, but of inconſiderable breadth. From it flows two rivers; and near it is the delightful mountain of Jeſan, which is eſteemed ſacred, and is ſaid to preſent not leſs than 3000 temples. The principal Japaneſe mountain is that of Fuſi, covered with ſnow almoſt throughout the year. The Fakonie are in the ſame quarter, ſurrounding a ſmall lake of the ſame name. Many of the mountains are covered with wood. There are ſeveral volcanoes; and they generally abound with evergreen trees, and cryſtalline ſprings. Near Firando there is a volcanic iſland; and in the province of Figo there is a volcano, which conſtantly emits flames, and another, which was formerly a coal-mine, in the province of Tſikuſer.

In the whole empire of Japan there are neither ſheep nor goats; and, in general, there are but few quadrupeds. The food of the Japaneſe conſiſts almoſt entirely of fiſh and fowl, with vegetables. Some few dogs are kept from motives of ſuperſtition; and cats are favourites of the ladies. Hens and common ducks are domeſticated for the ſake of their eggs. The mineralogy of Japan has been particularly ſtated by Thunberg: from whom we learn, that gold and ſilver are to be found in abundance; copper is alſo quite common: but iron is ſcarcer than any other metal in this country. Of that which is found they manufacture ſcymitars, arms, ſciſſors, knives, and other neceſſary implements. Amber, brimſtone, pit-coal, agate, aſbeſtos, porcelain clay, fleſh-coloured ſteatite, pumice, and white marble are enumerated among the productions of Japan. Many ſmall iſles are dependents on this empire, particularly in the S. and E.; among which is Fatſiſio, the place of exile for the grandees. For other particulars we refer to Kæmpfer, Thunberg, Phil. Tranſ. vol. lxx. and Pinkerton's Geography, vol. ii.

JAPAN *Earth.* (See CATECHU.) The extract prepared in the manner, ſtated under that article, is much uſed by the natives of Hindooſtan in dyeing and painting chintz and other cloths: combined with the vitriolic ſalts, a black colour is produced: mixed with oil they paint the beams and walls of houſes to preſerve them, and to defend them from the deſtructive white ants; and it is ſometimes mixed with their wall-plaiſter. The extract is uſed only medicinally as a cooling medicine, and when too profuſely uſed, it is ſaid to be a deſtroyer of venereal pleaſures. It is alſo given at the rate of two ounces a day to tame vicious horſes. This extract is likewiſe a principal ingredient in one of their ointments, of great repute, compoſed of blue vitriol, four drams; Japan earth, four ounces; alum, nine drams; white reſin, four ounces; which are reduced to a fine powder, and mixed with the hand, adding of olive oil ten ounces, and water ſufficient to bring the maſs to the proper conſiſtence of an ointment: this ointment is uſed in every ſore from a freſh wound to a venereal ulcer. Med. Obſ. and Inq. vol. v. art. 16. The antiſeptic quality of catechu appears from the experiments of ſir John Pringle.

The London college formerly directed Japan earth to be made into troches by beating it with an equal weight of gum arabic, and four times the weight of both, of ſugar of roſes, and a ſufficient quantity of water: but the college of Edinburgh ordered one part of the Japan earth, four of gum tragacanth, and twenty-four of fine ſugar, with roſe-water. The *tinctura Japonica,* or *tinctura Catechu,* is prepared by digeſting, for fourteen days, three ounces of the extract of catechu, and two of cinnamon bark bruiſed, in a quart of proof ſpirit; and this tincture may be given in doſes of two or three ſpoonfuls. The infuſion of catechu is prepared by macerating for an hour in a covered veſſel 2½ drams of the extract, half a dram of bruiſed cinnamon bark, in half a pint of boiling water. This is one of the beſt forms in which catechu can be exhibited, as it is thus at once freed from its impurities, and improved by the addition of the aromatic. For the method of preparing Japonic confection, ſee CONFECTION. Japan earth diſſolved in water is of a full brown colour, a little inclined to red. It is ſometimes uſed in water-painting, where it has a good effect; but its gummy texture renders its uſe improper in oil.

JAPANNERS GILDING. See GILDING.

JAPANNING, the art of varniſhing, and drawing figures on wood, &c. after the ſame manner as the workmen do who are natives of Japan.

The varniſh made and uſed in China and Japan is compoſed of turpentine, and a curious ſort of oil they have. This they mix and boil up to a proper conſiſtence, and this never cauſes any ſwelling in the hands or face of the people who uſe it. The ſwellings in theſe parts, which often happen to thoſe who work the lacquered ware, and ſometimes to thoſe who only paſs by the ſhops of theſe people, is from the lack, and not the varniſh. This lack is the ſap or juice of a tree, which runs ſlowly out on cutting the lower part of the trunk of the tree, and is received in pots ſet on purpoſe under the inciſions. The juice, as it flows from the tree, is of the colour and conſiſtence of cream; and as it comes in contact with the external air, its ſurface becomes black. As they only uſe it when black, their method of preparing it is to ſet it out in the open air, in large flat bowls, in which it looks all ſurface; but that the whole may be of the ſame uniform colour, they continually ſtir it for twenty-four hours together, with a ſmooth piece of iron. By this means the whole becomes thicker than it was before, and of a fine deep black. When it is in this ſtate, they powder ſome burnt boughs of trees, and mix them thoroughly with it; and then ſpreading it thin over any board which they intend to japan, it is ſoon dried in the ſun, and is then abſolutely harder than the board it is laid on. When this is thoroughly dry, they poliſh it over with a ſmooth ſtone and water, till it is as ſmooth as glaſs; and then wiping it very dry, they lay on the varniſh, made of oil and turpentine, and boiled to a proper conſiſtence for this kind of work.

If the work is to be of any other colour than black, that colour is to be mixed with the varniſh, and then the whole ſpread on very thinly and evenly; for on this laying it on depends the principal art of varniſhing. When there are to be figures in gold and ſilver, theſe muſt be traced out with a pencil in the varniſh over the reſt of the work; and when this varniſh is almoſt dry, the leaf-gold or leaf-ſilver is to be laid on, and poliſhed afterwards with any ſmooth ſubſtance.

The ſubſtances which admit of being japanned are almoſt thoſe of every kind that are dry, and not too flexible; as wood, metals, leather, and paper prepared. Wood and metals require no other preparation, except that of cleaning their ſurfaces, and rendering them perfectly even. But leather ſhould be ſecurely ſtrained either on frames or on boards; and paper ſhould be treated in the ſame manner, and have a previous ſtrong coat of ſome kind of ſize; but it is rarely made the ſubject of japanning, till it is converted into *papier maché*, or wrought, by other means, into an inflexible form. One principal variation in the manner of japanning is the uſing or omitting any priming or under-coat on the work to be japanned. In the older practice, ſuch priming was always uſed; and is at preſent retained in the French manner of japanning coaches and ſnuff-boxes of the *papier maché*. But in the Birmingham manufacture it has always been rejected. The advantages attending the uſe of ſuch priming are, that it makes a ſaving in the quantity of varniſh neceſſary to be uſed, and that it helps to form, by means of rubbing and water-poliſhing, an even ſurface for the varniſh. However, when an under-coat of ſize is uſed, the japan coats of varniſh and colour will be always liable to crack and peel off, and are leſs durable than thoſe which are formed without ſuch priming. This difference is obſervable in comparing the wear of the Paris and Birmingham ſnuff-boxes.

The laying in of the colours in varniſh or oil inſtead of gum-water, is another variation from the method of japanning formerly practiſed. But if the colours are tempered with the ſtrongeſt iſinglaſs ſize and honey, inſtead of gum-water, and laid on very flat and even, the work will not be much inferior in appearance to that done by the other method, and will laſt as long as the common old japan work, the beſt kinds of the true japan excepted. The proper japan grounds are either ſuch as are formed by the varniſh and colour, where the whole is to remain of one ſimple colour; or by the varniſh, either coloured, or without colour, on which ſome painting, or other decoration, is afterwards to be laid. The priming, or under-coat, which is ſometimes uſed in japanning, is of the ſame nature with that called clear-coating, practiſed by the houſe-painters; and conſiſts in laying on and drying in the moſt even manner a compoſition of ſize and whiting. The common ſize, (ſee Size,) has been generally uſed; but in nicer works, the glovers or the parchment ſize, improved by adding a third of iſinglaſs, will be preferable. The work ſhould be prepared for this priming, by being well ſmoothed with fiſh-ſkin, or the glaſs-ſhaver; and by being bruſhed over once or twice with hot ſize diluted, when it is of the common ſtrength, with two-thirds of water. The priming, formed of a ſize whoſe conſiſtence is between that of the common kind and glue, mixed with as much whiting as will give it a ſufficient body of colour to hide the ſurface on which it is laid, ſhould be laid on evenly with a bruſh. Two coats of this priming will generally be ſufficient; but if, upon trial with a fine wet rag, it will not receive a proper water-poliſh, another coat or more muſt be given it. And after the laſt coat but one is dry, the work ſhould be ſmoothed by rubbing it with the Dutch ruſhes. When the laſt coat is dry, the water-poliſh ſhould be given, by paſſing over every part of it with a fine rag, a little moiſtened, till the whole appears perfectly plain and even. The work is then ready to receive the painting or coloured varniſh.

When wood or leather is to be japanned, without priming, it may be prepared by laying on two or three coats of coarſe varniſh, made by diſſolving two ounces of ſeed-lac, and as much roſin, in one pint of rectified ſpirit of wine: and then the proper japan-ground muſt be laid on. As metals never require to be under-coated with whiting, they muſt generally be treated in the ſame manner as wood or leather.

For white japan grounds.—Prepare a white varniſh, by working and grinding flake white, or white lead, with a ſixth part of its weight of ſtarch, and drying the mixture; then temper it into a conſiſtence fit for ſpreading with maſtic varniſh, (ſee Varnish,) or compound it with gum anime; lay this on the body to be japanned, previouſly prepared with or without the under-coat of whiting: and varniſh it over with five or ſix coats of the following varniſh, formed by diſſolving two ounces of the cleareſt and whiteſt grains of ſeed-lac, and three ounces of gum anime, pulverized, in about a quart of ſpirit of wine, and ſtraining off the clear varniſh.

A very good varniſh, free from brittleneſs, may be obtained by diſſolving as much gum anime as the oil will take in old nut or poppy oil, boiled gently when the gum is put into it. The ground of white colour may be laid on in this varniſh, and then a coat or two of it may be put over the ground; but it muſt be well diluted with oil of turpentine when it is uſed.

Blue japan grounds may be formed of bright Pruſſian blue; or of verditer glazed over with Pruſſian blue, or ſmalt. The colour may be beſt mixed with ſhell-lac varniſh, and brought to a poliſhing ſtate by five or ſix coats of varniſh of ſeed-lac. But when a bright blue is required, and a leſs degree of hardneſs can be diſpenſed with, the method before directed, in the caſe of white grounds, muſt be purſued.

Red japan grounds.—For a ſcarlet ground, vermilion may be uſed: but this is leſs beautiful than the crimſon produced by glazing it over with carmine or fine lake, or roſe-pink. For a very bright crimſon; inſtead of glazing with carmine, the Indian lake, called ſafflower, ſhould be uſed, diſſolved in the ſpirit of which the varniſh is compounded. But in this caſe, inſtead of glazing with the ſhell-lac varniſh, the upper or poliſhing coats need only be uſed; which will render this a cheaper method than the uſing of carmine. If the higheſt degree of brightneſs be required, the white varniſhes muſt be uſed.

Yellow japan grounds.—For bright yellow grounds, king's yellow, or turpeth mineral ſhould be uſed, either by themſelves, or mixed with fine Dutch pink. The effect may be ſtill more heightened by diſſolving powdered turmeric root in the ſpirit of wine, of which the upper or poliſhing coat is made; which ſpirit of wine muſt be ſtrained off from the dregs, before the ſeed-lac be added to it for forming the varniſh.

Yellow grounds may likewiſe be formed of the Dutch pink only.

Green japan grounds may be produced by mixing king's yellow and bright Pruſſian blue; or turpeth mineral and Pruſſian blue. A cheap, but fouler kind may be had from verdigris with a little of the fore-mentioned yellows, or Dutch pink. But if a very bright green be wanted, the cryſtals of verdigris, called diſtilled verdigris, ſhould be uſed, and their effect will be heightened by laying them on a ground of leaf-gold. Any of theſe may be uſed with good ſeed-lac varniſh, but will be brighter with the white varniſh.

Orange-coloured japan grounds may be formed by mixing vermilion or red lead with king's yellow, or Dutch pink: or orange lake, or red orpiment will make a brighter orange ground than can be produced by any mixture.

Purple japan grounds may be produced by the mixture of lake and Pruſſian blue ; or a fouler kind, by vermilion and Pruſſian blue.

Black japan grounds may be formed, without heat, by either ivory-black, or lamp-black, which may be laid on with the ſhell-lac varniſh : and the upper or poliſhing coat may be common ſeed-lac varniſh.

For forming the common *black japan grounds* on iron or copper by means of heat, the work muſt be firſt painted over with drying oil, and a little lamp black ; and when it is moderately dry, put into a ſtove of ſuch a degree of heat, as will change the oil black, without burning it. The heat ſhould be ſlowly augmented and continued for a long time, in order to harden the coat of japan. This kind of varniſh requires no poliſh.

Tortoiſe-ſhell japan grounds.—The beſt is made by means of the following varniſh ; prepared by boiling together one gallon of good linſeed oil and half a pound of umbre, till the oil becomes very brown and thick ; by ſtraining the mixture through a coarſe cloth, and ſetting it again to boil, till it acquires the conſiſtence of pitch. On the piece of work to be japanned, well-cleaned, let vermilion, tempered with ſhell-lac varniſh, or with drying oil diluted with oil of turpentine, be laid thinly on the places deſigned to imitate the more tranſparent parts of the tortoiſe-ſhell.

When the vermilion is dry, bruſh over the whole with the black varniſh, tempered to a due conſiſtence with oil of turpentine ; and when it is ſet and firm, put the work into a ſtove, where it may undergo a very ſtrong heat, and be continued for a conſiderable time. This method, propoſed in one of Kunkel's recipes, has been revived in the Birmingham manufactures, where it is purſued in forming the ground of ſnuff-boxes, dreſſing boxes, tea-waiters, &c. This ground may be decorated with painting and gilding in the ſame manner as any other varniſhed ſurface.

Japan-work ought properly to be painted with colours in varniſh. (See PAINTING *in Varniſh* and VARNISH.) The colours are now moſt frequently tempered in oil, having a fourth part of its weight of gum anime previouſly diſſolved in it. This oil ſhould be well diluted with ſpirit of turpentine when it is uſed, that the colours may be laid more evenly and thin, and thus fewer of the poliſhing coats of varniſh will be neceſſary When water-colours are laid on grounds of gold, ſo as to have the effect of emboſſed work, they are beſt prepared by means of iſinglaſs ſize corrected with honey or ſugar-candy The body of which the emboſſed work is raiſed may be formed of a very ſtrong gum-water, thickened to a proper conſiſtence by bole armeniac and whiting, in equal parts, which being laid on in the proper figure, and repaired when dry, may be then painted with the proper colours tempered in the iſinglaſs ſize, or in the general way with ſhell-lac varniſh.

The finiſhing part of japanning conſiſts of laying on and poliſhing the outer coats of varniſh. This is in general beſt done with common ſeed-lac varniſh. (See VARNISH.) But where brightneſs is principally regarded, the ſeed-lac muſt give way to the whiter gums. When hardneſs, tenacity, and brightneſs are deſired, the mixed varniſh made of the picked ſeed-lac, already propoſed under *white Japan grounds*, ſhould be adopted. The pieces of work to be varniſhed ſhould be placed near a fire, and made perfectly dry ; the varniſh ſhould then be rubbed over them with proper bruſhes ; firſt one coat, and when this is dry another ſhould be laid over it ; and this operation muſt be continued at leaſt five or ſix times. When a ſufficient number of coats is thus laid on, the work is fit to be poliſhed, which muſt be done, in common caſes, by rubbing it with a rag dipped in tripoli, commonly called rotten-ſtone, finely powdered ; but toward the end of the rubbing, a little oil of any kind ſhould be uſed with the powder : and when the work appears ſufficiently bright and gloſſy, the oil alone ſhould be uſed to clear it from the powder, and to give it a brighter luſtre. For white grounds, fine putty or whiting ſhould be uſed inſtead of the tripoli. For gilding of Japan work, ſee *Japanners* GILDING. Handmaid to the Arts, vol. ii. p. 497, &c.

JAPARA, in *Geography*, a ſea-port town of the iſland of Java, ſituated on a peninſula on the N. coaſt ; the harbour is formed by a river of the ſame name, and is capable of receiving a great number of ſhips. The Dutch have a reſident here for the purchaſe of timber, cotton, rice, and indigo. About four miles S. from this town is the ancient city of Japara, once the capital of a kingdom. Not far from this is an old and ruinous Mooriſh temple of ſtone, with beautiful ſculpture of imagery and foliage : this temple is more than 300 years old. S. lat. 6° 28'. E. long. 110° 54'.

JAPENE, a town of Africa, in the kingdom of Jagra.

JAPHA, in *Ancient Geography*, a city of Galilee, near Jotapata, according to Joſephus ; probably the ſame with Japhia (Joſh. xix. 12.) belonging to the tribe of Zebulun. It was ſtrongly fortified ; and was beſieged and taken by Trajan, the father of the emperor of this name, who maſſacred all the inhabitants who were capable of bearing arms, and made ſlaves of the women and children, A.D. 67. See JOPPA.

JAPHETH, in *Scripture Biography*, the eldeſt ſon of Noah, who was born in the 500dth year of this patriarch, and who had ſeven ſons, *viz.* Gomer, Magog, Madai, Javan, Tubal, Meſhech, and Tiras, who "peopled the iſles of the Gentiles, and ſettled in different countries, each according to his language, family, and people." (Gen. x. 5.) By the "iſles of the Gentiles," the Hebrews underſtood the iſles of the Mediterranean, and other countries whither they could go by ſea only; as Spain, Gaul, Italy, Greece, and Aſia Minor ; and with reſpect to theſe ſeven ſons of Japheth it is very generally ſuppoſed that Gomer was the father of the Cimbri, or Cimmerians ; Magog of the Scythians ; Madai of the Macedonians or Medes ; Javan of the Ionians and Greeks ; Tubal of the Tiburenians ; Meſhech of the Muſcovites or Ruſſians ; and Tiras of the Thracians. From the LXX, Euſebius, the Alexandrian Chronicle, and Auſtin, we learn that Japheth had an eighth ſon called Eliza.

The portion of Japheth was Europe and part of Aſia, whoſe deſcendants poſſeſſed all Europe, all the iſlands in the Mediterranean, the whole of Aſia Minor, and the northern parts of Aſia. Noah, in his benediction of Japheth, propheſies concerning him (Gen. ix. 27.), "God ſhall enlarge Japheth ; and he ſhall dwell in the tents of Shem ; and Canaan ſhall be his ſervant." This prediction was accompliſhed when the Greeks and Romans, who were deſcendants of Japheth, not only ſubdued Syria and Paleſtine, but alſo purſued and conquered ſuch of the Canaanites as were any where remaining, as, *e. g.* the Tyrians and Carthaginians, the former of whom were received by Alexander and the Grecians, and the latter by Scipio and the Romans. In the original of the prediction, "God ſhall enlarge Japheth," there is a manifeſt alluſion to his name, which ſignifies enlargement. This was fulfilled both with regard to the territory and children of Japheth. The territories of Japheth's poſterity were very large ; for beſides all Europe, extenſive as it is, they poſſeſſed the Leſſer Aſia, Media, part of Armenia, Iberia, Albania, and thoſe vaſt regions towards the north, which anciently the Scythians inhabited, and which now the Tartars inhabit ; and it is not improbable that the new world was peopled by ſome of his northern deſcendants paſſing thither by the ſtraits of Anian. The enlargement of Japheth alſo denoted a numerous progeny, as well as ample territory; for Japheth, as we have obſerved, had ſeven ſons, whereas Ham had only four, and Shem only five.

In profane authors Japheth is known under the name of "Japetus," who is made by the poets father of heaven and earth; whoſe habitation was in Theſſaly, where he became celebrated for his power and violence. Japetus married a nymph named Alia, by whom he had four ſons, Heſperus, Atlas, Epimetheus, and Prometheus, who were all very famous among the ancients. Neptune is alſo, among ancient mythologiſts, a memorial of Japheth. As Noah divided the earth between Shem, Ham, and Japheth, Saturn divided the world between his three ſons, Jupiter, Pluto, and Neptune.

JAPONIC Confection. See Confection.

JAPU, in *Ornithology*, the name of a Braſilian bird, of the woodpecker kind, called alſo *jupujuba*. See Oriolus *perſicus*.

JAQUARIPE, in *Geography*, a river of Braſil, which runs into the Atlantic, S. lat. 4°.

JAQUE-LAHOU, a town of Africa, on the Ivory coaſt; 20 miles E. of cape Lahou.—Alſo, a river of Africa, which runs into the Atlantic, N. lat. 5° 20′. W. long. 5° 5′.

JAQUEJAG, a town of Africa, on the Ivory coaſt; 43 miles E. of cape Lahou.

JAQUEMEL, a town of Hiſpaniola, on the S. coaſt, in a bay to which it gives name. N. lat. 18° 17′.

Jaquemel, *Cape*, a cape on the S. coaſt of the iſland of Hiſpaniola. N. lat. 18° 14′. W. long. 73° 25′.

JAQUES, Cape, a cape on the coaſt of Chiampa, at the mouth of the river Cambodia. N. lat. 10° 40′. E. long. 107° 30′.

Jaques, or *Jaſk*, *Cape*, a cape at the weſtern extremity of the gulf of Perſia, at its entrance from the Arabian ſea. This is known by a remarkable ſquare rock, a few miles N. of it. It is a low ſandy deſert, with a few ſhrubs on it; and it is called by Le Brun cape St. James. N. lat. 25° 39′. E. long. 57° 20′.

Jaques, *St.*, a town of Mexico, in the province of Vera Paz.

JAQUESY, a town on the N. coaſt of Hiſpaniola; 13 miles E.S.E. of cape François.

JAQUET, Cape, a cape on the coaſt of Guzerat, in the gulf of Cutch. N. lat. 23°. E. long. 69′.

JAR, or Jarr, from the Spaniſh, *jarra*, or *jarro*, which ſignify the ſame, an earthen pot or pitcher, with a big belly, and two handles.

Jar is uſed for a ſort of meaſure, or fixed quantity of divers things.—The jar of oil is from 18 to 26 gallons: the jar of green-ginger is about 100 pounds weight, of wheat 52 pounds.

Jar, a meaſure of Lucca oil is 25 wine-gallons = 5775 cubic inches = 3.3420 cubic feet = .12378 cubic yards = 11.62456 cubic links.

Jar, or *Jiar*, in *Chronology*, one of the Hebrew months, anſwering to our April. It was the eighth month of the civil year, and the ſecond of the ſacred, and had only 29 days. On the 23d day of this month the Jews kept a feſtival in memory of the purification of the temple by Judas Maccabæus. (2 Mac. xiii. 51.) On the 25th they mourn the death of Samuel.

Jar. *To jar* is a verb which implies to diſagree, to ſound harſhly and untunably.

Jar, for meaſuring muſical intervals by water. See Hyppasus.

JARA, in *Geography*, a town of Syria, in the pachalic of Damaſcus; 15 miles E. of Safet.—Alſo, a town of Sweden, in the province of Smaland; 10 miles S.W. of Jonkioping.

JARAMEY, an inland town of Africa, in the kingdom of Yani.

JARAMOTH. See Ramoth.

JARANI, a town of Dalmatia; 10 miles S.E. of Macarſca.

JARARA-COAYPITINGA, in *Zoology*, the name of a ſpecies of ſerpent found in America, not much unlike the common viper, and equally venomous. Its tail is of a paler colour than the reſt of the body, and thence it has its name; which, in the language of the natives, expreſſes this property.

JARARA-EPEBA, the name of a ſpecies of American ſerpent, of a brown colour, but variegated by a very beautiful undulated red line, running all along the back like a chain. Ray.

JARARACA, the name of a ſpecies of ſerpent, common in America. It is a very ſhort ſerpent, ſeldom exceeding a foot and a half in length. It has ſome prominent veins on its head, and is of a duſky browniſh colour, variegated with red and black ſpots. It is a very poiſonous ſpecies. The natives uſe for a remedy the root of a plant called caatia, and by the Portugueſe herva de cobros. Ray.

De Laet has deſcribed four different ſpecies of this ſerpent.

JARARACUCU, the name of an American ſpecies of ſerpent. It is of the viviparous kind, and produces a great number of young; thirteen having been found perfectly formed in the body of a female of this kind; it grows to between two and three feet long, and has, like the other poiſonous ſerpents, very large and long teeth, which are hid in the gums, and contain a yellow poiſonous liquor. Theſe it only exerts at the time of biting, and its poiſon is ſo fatal that it will deſtroy a man within four and twenty hours. Ray.

JARBARRY, in *Geography*, a town of Hindooſtan, in Bengal; 20 miles N. of Dinagepour. N. lat. 25° 58′. E. long. 88° 40′.

JARBO, a town of Sweden, in Weſt Gothland; 25 miles N. of Uddevalla.

JARBOAS, a town of Sweden, in Weſtmanland; 45 miles W.N.W. of Stroemſholm.

JARCHI, Solomon Ben, in *Biography*, a famous rabbi, was born at Troyes, in Champagne, in the year 1104. He is known in hiſtory by the ſurnames of Iſaaki, Iſarchi, and Raſchi, and was the ſon of a rich merchant and learned rabbi, named Iſaac, who was alſo at the head of a college founded at Troyes for the inſtruction of the Jews, in the languages, medicine, and theology. Solomon had the beſt education that could be given him, and when he had finiſhed his ſtudies he went on his travels for farther improvement. On his return, and when he had attained to his thirtieth year, he formed a plan, under the direction of his father, of writing a hiſtory of the Jews, from the period of the deſtruction of Jeruſalem. With this view he left his native city in 1133, and ſpent ſeven years in travelling through Italy, Egypt, Greece, Aſia Minor, Paleſtine, Armenia, and Perſia, to collect materials among the Jews themſelves, who had been diſperſed in all parts of the globe. In Egypt he met with the celebrated Maimonides, who adviſed him to relinquiſh the undertaking, and to leave the execution of it to more favourable times. On his return to Troyes, finding that his father was dead, and, perhaps, aware of the difficulties which he had to contend with, he followed the counſel of Maimonides, locked up his collections, and applied himſelf to give an illuſtration and commentary on the collections of Talmudical traditions. This work being received with great applauſe, he next publiſhed "Gloſſes on the Jeruſalem and Babyloniſh Talmuds;" and finally he wrote moral illuſtrations of the bible, which were printed in the great bibles of Venice and Baſil, and were inſerted in De Lyra's great work on the ſacred volume. Jarchi died at Troyes in 1180, in the 76th year of his age. He was buried with every mark of reſpect in the Jewiſh cemetery near that city, and when that nation was afterwards driven out of France, they carried his remains with them into Bohemia, and interred them at the Prague. He is mentioned by Reland as one of the beſt interpreters of ſcripture, who ſays, that when any difficulties occurred to him in the Hebrew text, the illuſtrations of rabbi Jarchi appeared more ſatisfactory to him than thoſe of the greateſt critic, or any other commentator. Moreri. Bayle.

JARDES, or Jardons, in the *Manege*, are callous and hard ſwellings in the hinder legs of a horſe, ſeated on the outſide of the hough, as the ſpavin is on the inſide. Jardons lame a horſe, unleſs you give the fire dexterouſly and betimes.

JARDIN, Karel du, in *Biography*, an agreeable painter of ſcenes in common life, in a ſtyle partaking of Berchem's and Wouverman's manners united. He was born at Amſterdam in 1640, and was a diſciple of N. Berchem; but finiſhed his ſtudies in Italy, where he ſpent the greater part of his life, and died at Venice in 1678.

The compoſitions of this maſter are ſimple. A few figures with a horſe or cattle, and a ſmall landſcape back-ground, generally compriſe the whole; and they are moſt uſually on a ſmall ſcale. His colour is rich and bright; and frequently very agreeable; expreſſing happily the glow and effect of ſun-ſhine; or the duller light of a lowering day. The defect of his works is ſomewhat of hardneſs in the touch, which, however, is very delicate and neat; and has great ſpirit and brilliancy.

JARDINES, Los, in *Geography*, ſmall iſlands and rocks near the ſouth coaſt of Cuba. N. lat. 21° 18′. W. long. 81° 50′.

JARDINS, Mary Catherine des, in *Biography*, a celebrated novel writer, was born at Alençon in 1640. An early adventure in gallantry having obliged her to quit her native town, ſhe went to Paris in her twentieth year, where ſhe ſoon became known as a dramatic writer and noveliſt. She alſo attracted the notice and engaged the affection of captain Villedieu, who was already married, but from whom ſhe took the name of madame de Villedieu, by which ſhe has been chiefly known. The ſudden death of a friend inſpired her with pious ſentiments, which cauſed her to retreat to a convent; but when it was known that her conduct had not been of the moſt correct kind ſhe was diſmiſſed. On her return to the world ſhe became acquainted with the marquis de la Chaſſe, and married him. She died in 1683. Her works were printed in a collective form, in twelve volumes, in the year 1702. They contain a number of novels, or ſhort romances, which were much read, and contributed to ſet aſide the long ſerious romances at that time in faſhion. She is one of thoſe writers who, by aſcribing fictitious adventures to known characters of antiquity, have ſo much contributed to confound truth and falſehood. Bayle.

JARECA, or Yareca, in *Geography*, a town of Syria, in the Deſert; 18 miles N.N.E. of Palmyra.

JARFSO, a town of Sweden, in Helſingland; 36 miles N.W. of Soderhamn.

JARGEAU, a town of France, in the department of the Loiret, and chief place of a canton, in the diſtrict of Orleans, ſituated on the Loire; 9 miles S.E. of Orleans. The place contains 2441, and the canton 7724 inhabitants, on a territory of 150 kiliometres, in 10 communes.

JARGEPOUR, a town of Hindooſtan, in the circar of Cuttack; 35 miles N.E. of Cuttack.

JARGON, in *Mineralogy*. See Zircon and Gems.

JARGONG, in *Geography*, a town of Hindooſtan, in Bengal; 18 miles S.W. of Midnapour.

JARGROD, a town of Poland, in the palatinate of Braclaw; 36 miles S.S.W. of Braclaw.

JARHISAR, a town of Aſiatic Turkey, in Natolia; 40 miles N.W. of Kiutaja. N. lat. 39° 43′. E. long. 30° 3′.

JARJARIA, a town of the Arabian Irak, on the Tigris; 60 miles S.S.E of Bagdad.

JARIBOLUS, Ιαριβῶλος, in *Antiquity*, one of the Palmyrenian gods. This deity, in all appearance, had the ſame attributes with the God Lunus; for *Jari* ſignifies the month over which the moon preſides. Mem. Acad. Inſcrip. tom. iii. p. 177.

JARISZOW, in *Geography*, a town of Poland, in the palatinate of Braclaw; 56 miles S.W. of Braclaw.

JAR-KEVI, a town of Aſiatic Turkey, in Natolia; 30 miles S.W. of Augura.

JARLSBERG, a town of Norway, capital of a diſtrict, abounding in mines, in the dioceſe of Aggerhuus; 5 miles N. of Tonſberg.

JARMAN, a town of Africa, in Sahara. N. lat. 18° 57′. E. long. 6° 26′.

JARNA, a town of Sweden, in Dalecarlia; 35 miles W.S.W. of Fahlun.

JARNAC-CHARENTE, a town of France, in the department of the Charente, and chief place of a canton, in the diſtrict of Cognac, ſituated on the Charente; 6 miles E. of Cognac. The place contains 1725, and the canton 10,420 inhabitants, on a territory of 162½ kiliometres, in 14 communes.

JARNAGES, a town of France, in the department of the Creuſe, and chief place of a canton, in the diſtrict of Bouſſac; 16 miles S of Bouſſac. The place contains 727, and the canton 6118 inhabitants, on a territory of 207½ kiliometres, in 12 communes.

JARNOWICH, or Giornovichi, in *Biography*, one of the moſt agreeable performers on the violin of the preſent age, or perhaps of any age. He delighted, if not aſtoniſhed more, the oftener he was heard. No one had more facility of execution, or executed with more grace the greateſt difficulties. He compoſed concertos, which, without appearing learned, or dividing the attention by the contrivance of the inward parts, cheriſh the melody of the principal violin, and give a relief to the moſt rapid as well as the moſt pathetic periods of the cantilena. But ſuch was the brilliancy of his bow, that he always ſeemed playing with his part. His ſlow movements never border on pſalmodia, but have always a "unity of melody" of the moſt intereſting and engaging kind, ſo complete in taſte and variety, as to ſtand in no need of graces or embelliſhments to make it palatable. In his manner of playing, in the carriage of himſelf and his inſtrument, there was a ſomething for which we have no elegant word; an ignorant and vulgar critic would perhaps call it a *ſlang*. If this performer, while in England, had been leſs capricious, and of a temper more practicable, he might have governed the muſical world as deſpotically as Giardini had done before, and been a much richer man than caprice and extravagance would ever allow him to be. Though the French, with their uſual ingenuity of diſguiſing names, call him Jarnowich, he wrote Giornovichi, being by birth a Sicilian.

This admirable performer, after quitting England, reſided a conſiderable time at Hamburgh, where he was no leſs remarkable for his performances on the violin, than as a ſword's-man, a dancer, a billiard-player, and for feats of activity of all kinds. When in England, at the ſame time as the accompliſhed creole, St. George, he was a match for him with the foils, and more than a match for the fencing-maſters. And being a man of a difficult commerce, and very ſenſible of his ſuperiority in the uſe of arms, he was often captious and inſolent in ſociety, and wiſhed for nothing more than opportunities of manifeſting his talents. He had fought ſeveral duels in France and Ruſſia before his arrival in England; and after quitting our iſland, he was wounded in the arm at Hamburgh, in an affair of honour, ſo ſeverely, that it was thought both his bow-hand and ſword-arm were ſo diſabled, as never more to allow him either to fiddle or fight. And ſome years elapſed before he was again heard of as a muſician. During which tranquil period he ſeems to have ſubſiſted as a gambler, being dextrous at all kinds of games. But in 1804, going again to Ruſſia, accounts came to this country that he died at a billiard table at Peterſburg, the latter end of that year.

Though Jarnowich's taſte, fancy, and performance on the violin were ſo excellent, as a compoſer, he ſeems to have been ſelf-taught, and not a regular bred contrapuntiſt. It has been ſaid, that in his early youth he had been an apprentice to a rope-dancer and tumbler; which will account for his extraordinary agility, feats of activity, and dancing talents. He danced a hornpipe, not only better than any of our ſailors, but as well as Nancy Dawſon, or Slingſby. The reſt of his hiſtory is but little known. He arrived, at an early period of his life, at Paris, and delighted and aſtoniſhed all hearers. In 1780 he had quitted that capital to viſit other countries. M. Laborde, in his "Eſſais ſur la Muſique," tom. iii. publiſhed that year, gives him a great and juſt character for his captivating performance on the violin; but ſeems to over-rate his concertos, when he ſays they were as learned as agreeable.

JARNSKOG, in *Geography*, a town of Sweden, in Warneland; 38 miles N.W. of Carlſtadt.

JARNUS, a town of Egypt; 13 miles N. of Abu-Girgé.

JAROCZOW, a town of the duchy of Warſaw; 20 miles W.N.W. of Kaliſh.

JAROMIRZ, a town of Bohemia, in the circle of Konigingratz; nine miles N. of Konigingratz.

JARON, or JARRON, a town of Perſia, in the province of Farſiſtan, on the road from Iſpahan to Gamron. The houſes are conſtructed of earth, and the moſques are mean. In the town and gardens are many palm-trees, highly eſteemed by the Perſians for their beauty and fruit, and furniſhing a profitable article of trade; 80 miles S. of Schiras. N. lat. 28° 35′. E. long. 52° 42′.

JAROS, a ſmall iſland of the Mediterranean, near the coaſt of France. N. lat. 43° 12′. E. long. 6 25′.

JAROSLAVL, a city of Ruſſia, and capital of a government, deriving its name from it: it is large, well built, and commercial, ſituated on the Volga; containing eighty churches, three convents, above 6000 houſes of wood, and more than 20,000 inhabitants. It abounds with manufactures of Ruſſia leather, in which 6000 artizans are employed; firſt eſtabliſhed by Czar Peter I., and rendered very flouriſhing by Erneſt John, duke of Courland, during his exile in this place; 144 miles N.N.E. of Moſcow. N. lat. 37° 35′. E. long. 30° 14′.

JAROSLAVSKOI, a government of Ruſſia, bounded on the E. by the government of Koſtrom, on the N. by thoſe of Vologda and Novgorod, on the W. by Tverſkoi, and on the S. by Vladimir; about 160 miles in length, and from 30 to 110 in breadth. The capital is Jaroſlavl.

JAROSLAW, a town of Auſtrian Poland, in Galicia; 48 miles W.N.W. of Lemberg.

JAROSOT, a town of Poland, in the palatinate of Kiev; 36 miles W. of Bialacerkiev.

JAROTSIN, a town of the duchy of Warſaw; 14 miles W.N W. of Kaliſh.

JAROU-SANPOO, a branch of the Sanpoo, or Burhampooter river, which riſes in Thibet; 30 miles E. of Darmadijira.

JARPOUR, a town of Hindooſtan, in Baglana; 24 miles E. of Bahbelgong.

JARRA, a town of Africa, in the Mooriſh kingdom of Ludamar; the town is extenſive, the houſes are built of clay and ſtone intermixed, the clay anſwering the purpoſe of mortar; the majority of the inhabitants is compoſed of Negroes, from the borders of the ſouthern ſtates, who prefer a precarious protection under the Moors, which they purchaſe by a tribute, to continuing expoſed to their predatory hoſtilities. The tribute they pay is conſiderable; and though they manifeſt towards their Mooriſh ſuperiors the moſt unlimited ſubmiſſion and obedience, they are treated by them with the utmoſt indignity and contempt. N. lat. 15 5′. W. long. 7° 13′.

JARRAH, a town of Hindooſtan, in Oude; 14 miles S. of Allahabad.—Alſo, a town of Hindooſtan, in the circar of Chandail; 30 miles W. of Saipour.

JARRETIER, in the *Manege*, an obſolete French word, ſignifying a horſe whoſe houghs are too cloſe together; which is now expreſſed in French by *crochu*, *i. e.* crooked or hooked.

JARRIE, LA, in *Geography*, a town of France, in the department of the Lower Charente, and chief place of a canton, in the diſtrict of La Rochelle; ſix miles S.E. of La Rochelle. The place contains 1163, and the canton 9729 inhabitants, on a territory of 157½ kiliometres, in 14 communes.

JARS, GABRIEL, in *Biography*, was born at Lyons in 1732. His father was concerned in the mines of the Lyonnois, and as the ſon diſcovered an early attachment to the art of metallurgy, he was placed in the eſtabliſhment for the conſtruction of bridges and cauſeways, in order to obtain a practical knowledge of the buſineſs of a miner and civil engineer. He was ſoon fixed on as a fit perſon for introducing improvements into the art of working mines in France, and with this view he viſited and ſtrictly ſcrutinized moſt of the mines on the continent, and thoſe in Scotland and England. On his return he ſet about arranging the obſervations which he had been able to make, when a ſudden death in 1769 broke off his deſigns. His works were publiſhed by his brother at Lyons, entitled "Voyages Metallurgiques, ou Recherches et Obſervations ſur les Mines et Forges de Fer, la Fabrication de l'Acier, celle du Fer-blanc, et pluſieurs Mines de Charbon de Terre, &c." in three vols. 4to. They are ſaid to form a complete collection of theoretical and practical metallurgy down to the time in which the obſervations were made. Gen. Biog.

JARUS, in *Botany*, a name by which ſome authors have called the *arum*, or *wake-robin*.

JASAD, in *Geography*, a town of Perſia, in the province of Segeſtan; 50 miles S. of Zareng.

JASENITZ, a town of Pomerania, on the W. ſide of the Oder, near its mouth; 10 miles N. of Stettin.

JASIDÆANS, in the *Hiſtory of Religion.* See Jezides.

JASINE, in *Botany*, a name uſed by the ancients to expreſs a ſmall kind of climbing plant, much reſembling that from which they obtained the drug called *ſcammony*. They, therefore, called this ſometimes the ſmall *ſcammony*, or *ſcammonia parva*. It climbed upon trees, and had ſmall ivy-like leaves. Pliny has deſcribed ſuch a plant as this under the name of *langini;* and it ſeems very probable that this was only a corruption of the word *jaſine*, that author having taken moſt of his accounts from the Greeks, and having frequently miſtaken their names.

JASINGPOUR, in *Geography*, a town of Hindooſtan, in Oude; 30 miles S. of Fyzabad.

JASIONE, in *Botany*, ιασιωνη, the ancient Greek name of ſome wild pot-herb, according to the lexicographers, with which the genus in queſtion has but little connection.—Linn. Gen. 455. Schreb. 596. Willd. Sp. Pl. v. 1. 888. Mart. Mill. Dict. v. 2. Sm. Fl. Brit. 241. Ait. Hort. Kew. ed. 2. v. 1. 343. Juſſ. 166. Lamarck. Illuſtr. t. 724. Gærtn. t. 30.—Claſs and order, *Pentandria Monogynia.* Nat. Ord. *Campanaceæ*, Linn. *Campanulaceæ*, Juſſ.

Gen. Ch. *Cal.* Common Perianth, or rather Involucrum, of many alternate leaves, the inner ones narroweſt, containing numerous flowers on ſhort ſtalks, permanent; proper perianth ſuperior, five-cleft, permanent. *Cor.* of each flower of one petal, regular, in five rather deep, lanceolate, ſpreading ſegments. *Stam.* Filaments five, ſhort, awl-ſhaped; anthers oblong, connected at their baſe, their ſummits ſpreading. *Piſt.* Germen inferior, roundiſh; ſtyle thread-ſhaped, the length of the corolla; ſtigma ſwelling, cloven. *Peric.* Capſule roundiſh, with five angles, crowned with the proper calyx, membranous, imperfectly two-celled, opening by a round orifice at the top. Partition divided from top to bottom. *Seeds* numerous, nearly ovate, affixed to a ſtalked, globular, unconnected receptacle, in the lower part of the capſule.

Eſſ. Ch. Corolla wheel-ſhaped, in five deep linear ſegments. Stigma club-ſhaped, cloven. Anthers connected at their baſe. Capſule inferior, imperfectly two-celled, opening at the top.

Obſ. The central flowers are often abortive, their ſtigma being more tumid and undivided. Linnæus placed this genus in his *Syngeneſia Monogamia*, an order now, by general conſent, aboliſhed.

1. J. *montana.* Linn. Sp. Pl. 1317. Curt. Lond. faſc. 4. t. 58. Engl. Bot. t. 882. A native of dry hillocks and fields throughout Europe. In England it is known by the name of Sheep's Scabious. The *root* is annual. *Herb* roughiſh, pale, with ſeveral *ſtems*, and oblong, waved, narrow *leaves. Flowers* terminal, ſolitary, ſtalked, of a ſky-blue, and very pretty. The genus is nearly allied to *Phyteuma* in habit and characters.

There is ſaid to be a perennial variety, about which we have often enquired in vain.

JASK, in *Geography*, a town of Croatia; 14 miles N. of Carlſtadt.

JASKAS, a town of Sweden, in the government of Abo; 14 miles N.W. of Abo.

JASLO, a town of Poland, in the palatinate of Sandomirz; 72 miles S.S.W. of Sandomirz.

JASLOWIECZ, a town of Poland, in the palatinate of Kaminiec; 41 miles W.N.W. of Kaminiec.

JASLOWITZ, a town of Moravia, in the circle of Znaym; 10 miles S.E. Znaym.

JASMELÆUM, a medicinal oil, called alſo by the Perſians *jaſme;* it is made by putting two ounces of the white flowers of violet into a pint of oil of ſeſamum. It is uſed to anoint the body after bathing, and is in great eſteem among the Perſians for its fragrancy, though it is a ſort of ſmell which many would rather think offenſive.

JASMINE, or Jessamine-*Tree*, in *Botany.* See Jasminum.

Jasmine, *Arabian.* See Nyctanthes.

Jasmine, *Baſtard.* See Cestrum. See alſo Lycium.

Jasmine, *Cape.* See Gardenia.

Jasmine, *Fennel-leaved.* See Ipomoea.

Jasmine, *Ilex-leaved.* See Lantana.

Jasmine, *Perſian.* See Syringa.

Jasmine, *Red.* See Plumeria.

Jasmine, *Scarlet and yellow.* See Bignonia.

JASMINEÆ, a natural order of plants, ſo called from *Jaſminum*, which is one of them. This order is the 37th in Juſſieu's ſyſtem, or the fourth of his eighth claſs, and is equivalent to the 44th of Linnæus, or *Sepiariæ.* For the characters of Juſſieu's eighth claſs, ſee Gentianæ. The order in queſtion is thus characterized.

Calyx tubular. Corolla tubular, regular; (in *Fraxinus* either wanting, or of four petals.) Stamens moſtly two. Style one; ſtigma two-lobed. Fruit either capſular (in the manner of the order of *Acanthi)*, or pulpy; in ſome caſes with two cells and two ſeeds; in others of one cell, with one, two, or four ſeeds. Embryo ſtraight, flat, generally incloſed in a fleſhy albumen. Stem ſhrubby, more rarely arboreſcent, with oppoſite branches. Leaves for the moſt part oppoſite. Flowers either panicled in an oppoſite manner, or corymboſe.

The ſections are two.

1. With a capſular fruit. This contains *Maytenus* of Molina, with *Nyctanthes*, *Syringa*, *Hebe* (which is a *Veronica)*, and *Fraxinus.*

2. With a pulpy fruit. This ſection conſiſts of *Chionanthus*, *Olea*, *Phillyrea*, *Mogorium* (which is properly not diſtinct from *Jaſminum)*, *Jaſminum* and *Liguſtrum.*

The *Jaſmineæ* form an elegant and diſtinct order, valuable for the elegance of their flowers, which, moreover, are uſually very ſweet-ſcented, though in ſome inſtances unpleaſantly ſtrong.

JASMINOIDES. See Lycium.

JASMINUM, in *Botany*, from ιασμη, a *fragrant ointment*, or *perfume*, alluding to the ſweet ſcent of the flowers. Linn. Gen. 9. Schreb. 12. Willd. Sp. Pl. v. 1. 35. Mart. Mill. Dict. v. 2. Ait. Hort. Kew. ed. 2. v. 1. 15. Brown. Prodr. Nov. Holl. v. 1. 520. Juſſ. 106. Tourn. t. 368. Lamarck. Illuſtr. t. 7. Gærtn. t. 42. Claſs and order, *Diandria Monogynia.* Nat. Ord. *Sepiariæ*, Linn. *Jaſmineæ*, Juſſ.

Gen. Ch. *Cal.* Perianth of one leaf, inferior, tubular, oblong, permanent; its margin five-toothed and erect. *Cor.* of one petal, ſalver-ſhaped; tube cylindrical, long; limb flat, in from five to eight deep, ſomewhat elliptical, lobes. *Stam.* Filaments two, ſhort; anthers ſmall, within the tube of the corolla. *Piſt.* Germen ſuperior, roundiſh; ſtyle thread-ſhaped, reaching as high as the anthers; ſtigma two-lobed. *Peric.* Berry double, ſmooth, each of one cell. *Seeds* ſolitary, large, ovate-oblong, convex on one ſide, flat on the other, coated with pulp.

Eſſ. Ch. Corolla ſalver-ſhaped; its ſegments from five to eight. Berry double. Seeds ſolitary, coated.

This delightful genus conſiſts of 21 ſuppoſed ſpecies in Willdenow's Sp. Pl. Linnæus confined it to ſuch as have a five-cleft corolla, he having referred thoſe which have eight ſegments in that part to *Nyctanthes*, for want of attention to the fruit. This in the *Arbor triſtis*, the only true *Nyctanthes*, is capſular, but in all his other ſpecies pulpy; for which reaſon ſir J. Banks and Dr. Solander firſt properly removed all ſuch to the genus before us, of which their manuſcripts contain deſcriptions of many more, hitherto unpubliſhed. Eleven of Willdenow's ſpecies have ſimple leaves, eight ternate, and two pinnate ones.

Among the former are J. *hirſutum* and *pubeſcens*, figured in Sm. Exot. Bot. v. 2. t. 118, and there ſhewn to be one and the ſame plant; in the ſame predicament are *anguſtifolium* and *vimineum*, of which a plate may be ſeen in Rheede Hort. Mal. v. 6. t. 53. So that the number of ſpecies in Willdenow's firſt ſection are diminiſhed to nine, and his whole number to 19. One of the moſt intereſting of this firſt ſection is the Arabian Jaſmine, *J. Sambac*, *Nyctanthes Sambac* of Linnæus, a native of the Eaſt Indies, and very general in our ſtoves, where its elegant white bloſſoms, purpliſh in decay, are abundantly produced, and diffuſe the ſweeteſt poſſible fragrance. A double variety, ſometimes ſeen, is highly valued; ſee Andr. Repoſ. t. 497. A ſtill finer variety is the *Kudda Mulla* of Hort. Malab. v. 6. t. 51, figured alſo in Tilli, Hort. Piſan. t. 30. This laſt, though eaſily propagated, was confined to the gardens of the grand duke of Tuſcany, and not given to any one. Such ſtupid illiberality met with its juſt reward after a time, in the loſs of the plant, which, if diſperſed, might have been preſerved.

In the ſecond ſection are, among others, J. *azoricum*, frequent in green-houſes, valuable for its ſhining broad leaves, and ſweet white flowers:

J. *fruticans*, Curt. Mag. t. 461, native of the ſouth of Europe, hardy with us, bearing yellow but ſcentleſs flowers: and

J. *odoratiſſimum*, Curt. Mag. t. 285, found in Madeira, very commonly kept in green-houſes, for the ſake of its very ſweet and handſome yellow bloſſoms.

J. *officinale*, Curt. Mag. t. 31, our common white jaſmine, a native of the Eaſt, but ſo generally cultivated that it can hardly be found certainly wild; and the moſt ſhowy Catalonian jaſmine, J. *grandiflorum*, are the only ones known with pinnate leaves. This laſt is much more tender than the *officinale*, with larger flowers, elegantly tinged with red underneath. It grows in India, nor is there any good reaſon for the name of Catalonian jaſmine.

JASMINUM, in *Gardening*, a genus containing plants of the hardy and tender, deciduous and evergreen, ſhrubby kinds; of which the ſpecies chiefly cultivated are the common white jaſmine (J. officinale); the common yellow jaſmine (J. fruticans); the Italian yellow jaſmine (J. humile); yellow Indian jaſmine (J. odoratiſſimum); the Spaniſh or Catalonian jaſmine (J. grandiflorum); the Arabian jaſmine (J. Sambac); and the Azorian jaſmine (J. Azoricum.)

This ſort has varieties with white ſtriped leaves, and with yellow ſtriped leaves.

The ſecond ſort is extremely productive in ſuckers from the roots.

Method of Culture.—Of theſe plants the firſt ſort is readily increaſed by layers or cuttings. The young branches ſhould be laid down in the early autumn, and in the following autumn be taken off, and planted where they are to grow. The cuttings of the young ſhoots may be planted either at the ſame time or in the early ſpring, being protected in the firſt caſe, in ſevere weather, in the winter. When they are well rooted, they may be removed, with balls of earth about their roots, to the places where they are to grow up and remain.

And the different varieties are increaſed by budding or grafting them upon ſtocks of the plain or common kind. See BUDDING and GRAFTING.

In reſpect to the common ſorts, they muſt be planted againſt walls, pales, or other fences, that may ſerve as a ſupport. When planted as a ſtandard, it is difficult to train to a proper head, and keep in order, without deſtroying the flowering branches which are the extremities of the ſame year's ſhoots. On this account they ſhould be permitted to take their natural growth in the ſummer, and not be pruned or nailed till towards the latter end of March, when the froſts are over, to prevent their being injured by them.

But the varieties ſhould be planted in a ſouthern aſpect, and a warmer ſituation than the common ſort, eſpecially the firſt, which, in very ſevere winters, ſhould be protected with mats or other means.

The ſecond ſort may be increaſed by layers, or planting the ſuckers taken from the roots, in the ſpring or autumn. The layers may be made as in the firſt ſort.

The third ſort is capable of being propagated either by budding or in-arch-grafting upon ſtocks of the ſecond kind, or by layers of the young tender branches made in the autumn or early ſpring ſeaſons; but the former is the better practice, as producing more hardy plants. It ſhould have a rather warm aſpect, as a ſouth wall, and, in very ſevere winters, have the protection of mats. It requires the ſame ſort of pruning as the firſt ſort.

The four following ſorts are more tender in their nature and habits.

The firſt of them may be increaſed by ſeeds or layers of the young ſhoots. The ſeeds ſhould be ſown in the early ſpring, in pots of freſh light earth, plunging them in a moderate hot-bed, and when the plants are up, removing them into a ſecond hot-bed to forward them, giving them frequently ſlight refreſhings of water and gradually hardening them to the full air. They ſhould be occaſionally watered in the winter, and in the ſpring following be removed into ſeparate pots, the earth being carefully preſerved about their roots. Their firſt growth may be promoted by placing them in a mild hot-bed. They afterwards require a pretty free air and ſlight protection from froſt in winter. They ſhould have the decayed branches pruned out in the ſpring, without the others being ſhortened, as the flowers are produced at the extremities of the branches.

In the latter method the young ſhoots ſhould be laid down in the early ſpring, as about March, being ſlightly nicked underneath at a joint, and often ſlightly watered in dry weather. In the following ſpring they may be taken off, and planted out in pots filled with light earth, ſeparately; being afterwards managed as the others.

They may likewiſe be raiſed by inarch-grafting into ſtocks of the ſecond ſpecies, but the plants produced in this way are not ſo ſtrong as thoſe upon their own ſtocks, and they are apt to ſend out too many ſuckers from the roots.

The ſecond of theſe tender kinds may alſo be raiſed by budding or inarch-grafting upon ſtocks of the firſt ſpecies, which renders it more hardy than its own; but the plants are moſtly brought from Italy, in bunches of four together, and which, after having their roots moiſtened, and the ſhoots and dead parts pruned away, as well as the tops cut down to within a few inches of the grafted parts, may be planted in pots filled with light freſh earth, plunging them in a moderate bark hot-bed, ſhading them from the ſun, and giving them water. When they begin to grow, all the ſhoots below the grafts ſhould be rubbed off, and the top ſhoots cut off, free air being admitted, ſo as to gradually harden them to be ſet out in a warm ſituation. They muſt have the protection of the green-houſe in winter, and be frequently ſparingly watered, a free air being admitted in mild weather.

The third of theſe tender ſorts may be raiſed by layers and cuttings ; but the firſt is the beſt method, as the cuttings require much care to make them ſtrike. The young branches ſhould be laid down in the ſpring, in pots filled with ſoft loamy earth, plunging them in a tan hot-bed, and watering them occaſionally. In the autumn, when they have ſtricken root, they ſhould be taken off, and planted out in ſeparate ſmall pots, plunging them in a hot-bed, due ſhade being given. The cuttings may be planted in pots of the ſame ſort of earth during the ſummer, plunging them in a tan hot-bed, and covering them cloſe with a bell or hand glaſs, due ſhade being given, and occaſional waterings. When they have taken good root, in the beginning of autumn, they may be removed into ſeparate pots, and be managed as thoſe from layers.

Theſe plants ſucceed beſt when kept in the ſtove.

The laſt of theſe tender ſorts may be increaſed in the ſame way as the fourth ſpecies, and requires the ſame management afterwards.

The three firſt ſpecies may be employed as plants of ornament for covering walls, palings, and other naked erections about houſes, as well as occaſionally introduced as ſtandards in clumps, borders, and other parts of pleaſure grounds.

The other ſorts afford variety among other potted green-houſe and ſtove plants. Some may likewiſe be trained againſt warm walls or palings, eſpecially the laſt kind which has a fine fragrance, and at the ſame time a good appearance.

JASMUND, in *Geography*, a peninſula of the iſland of Rugen, which forms, with another peninſula called "Witto," a large bay, fronting the north-eaſt, which, in hazy weather, often proves deſtructive to veſſels. The bay is called "Tromperwyck." N. lat. 54° 35'. E. long. 13° 45'.

JASOUN, a town of Aſiatic Turkey, in the government of Sivas, on the Black ſea ; 75 miles N.E. of Samſoun.

JASPACHATES, in the *Natural Hiſtory of the Ancients*, a name given to ſome varieties of the agate-jaſper, mentioned under No. 5. in the following article.

JASPER, *Jaſpe*, Fr. *Jaſpis*, in moſt other European languages; a mineral ſpecies belonging to the claſs of earthy foſſils, and divided by Werner into ſix ſub-ſpecies diſtinct from each other, both by their oryctognoſtic and geognoſtic characters ; *viz.* 1. Egyptian jaſper; 2. Ribbond jaſper ; 3. Porcelain jaſper ; 4. Common jaſper ; 5. Agate jaſper, and 6. Opal jaſper. They agree in their being opaque or ſlightly tranſlucent at the edges, in hardly ever affecting vivid colours, in their always occurring maſſive and in common external ſhape (except the Egyptian jaſper); in their hardneſs being rather inferior to that of common quartz. The remaining external, in conjunction with the geognoſtic, characters have been thought ſufficient by Werner to divide the jaſpers into the above ſub-ſpecies, which by ſome other writers are conſidered as varieties only. Some jaſpers are nearly related to heliotrope, others approach the nature of indurated clay, argillaceous iron-ſtone, and lithomarge ; the opal jaſper paſſes into the opal.

Almoſt all coloured jaſpers, according to Haüy, are conductors of electricity ; a property obſervable by bringing them into contact with an electrified conductor, when, on the approach of the finger, they emit ſparks.

1. *Egyptian jaſper ; Egyptian pebble. Quartz jaſpe panaché*, Haüy ; *Caillou d'Egypte*, Fr. ; *Egyptiſcher Kieſel, Nilſtein*, Germ.; *Silex Ægyptiacus, Niloticus*, Lat.

Brown and yellow are the predominant colours of this jaſper, and generally ſeveral ſhades of them occur together in the ſame piece. The brown is uſually a deep cheſnut or liver brown, ſometimes approaching to blackiſh brown, and an admixture of red is likewiſe obſervable ; at Baaden a variety is ſaid to occur in which the red predominates. The yellow is moſtly a deep iſabel-yellow, alſo greyiſh yellow ; it likewiſe paſſes into ſeveral ſhades of pale red. Two of theſe colours are generally mixed in ſuch a manner that the one, particularly the brown, forms the ground, while the other repreſents a ſucceſſion of variouſly contorted, concentric, irregular zones or bands, and ſpots which, in conjunction with black dendritical and other delineations, often produce repreſentations of grottos, landſcapes, human figures, and other objects.

It has hitherto been found only in rolled moſtly oblong pieces, and in the form of balls, with uneven ſurface. Theſe have alſo been found hollow, druſed with brown quartz cryſtals ; but ſuch ſpecimens are very rare.

Both externally and internally it is moderately gliſtening ; luſtre more or leſs reſinous. Fracture flat conchoidal. It is pretty eaſily frangible. Its hardneſs is rather leſs than that of quartz. Fragments indeterminately angular and very ſharp-edged ; perfectly opaque, and only ſlightly tranſlucent at the edges. Specific gravity 2.564, Briſſon ; 2.600 Brünnich.

Before the *blow pipe* the Egyptian jaſper is infuſible without addition. When ignited for a conſiderable length of time it loſes its colour.

The proportion of the component parts of this ſubſtance muſt, of courſe, be ſubject to conſiderable variation, according as the brown or yellow maſs predominates. A variety analyzed by Delametherie, yielded

Silica	54
Alumine	30
Oxyd of iron	16

This jaſper is *found* pretty abundantly in Egypt, particularly in the neighbourhood of Cairo and Suez, on the borders of the Nile. According to Dr. Reuſs, it occurs alſo, as rolled pieces, at Koſchatek, in the Bunzlau circle of Bohemia. It is alſo ſaid to be found at Freiſe in Lotharingue.

Of its *geognoſtic* ſituation, no more is known than that it always occurs in rounded pieces, which appear not to owe their origin to rolling, but to be original, and produced by infiltration. It has been ingeniouſly remarked by Mr. Mohs, that the interior of thoſe balls is generally found to agree exactly with their exterior form, in the ſame manner as in ſome hornſtone-balls, in which the nucleus is ſeparated from the ſurrounding coatings by a conformable coating of cryſtallized quartz, &c. If this be the caſe, neither the colour, nor the delineations in the Egyptian jaſper, can be conſidered as derived from without, nor its form as a ſecondary one ; and we may further infer from this, that the balls of this jaſper, (at leaſt thoſe of the brown variety from Egypt,) are formed like agate-balls in rocks belonging to the formation of the amygdaloid. Werner, as we are told by Mr. Jameſon, ſuſpects that it occurs imbedded in a brown ochre of iron. Mr. Patrin is of opinion, that theſe rounded maſſes have originally been ſimple ferruginous geodes, formed in marley ferruginous ſoil, abounding with iron ochre, which has moulded itſelf into oval maſſes compoſed of concentric layers. Theſe layers, in the progreſs of time, will ſhrink both by deſiccation and the effects of the mutual attraction of the ferruginous molecules, which have a perpetual tendency to enter into the cloſeſt poſſible combination. The layers of the geode, by their condenſation, become more or leſs ſeparated from one another, and its centre remains empty, in caſe the whole maſs is compoſed of nothing but pure oxyd of iron ; but when mixed with marle, this latter is continually preſſed towards the centre, where it forms a nucleus more or leſs light coloured, in proportion as it has parted with the iron it contained, and which has united with that of the neighbouring layers. In the ordinary way of occurring, (Mr. Patrin obſerves,) it appears that theſe geodes remain nearly in the ſame ſtate in which they were formed; but in Egypt ſome particular circumſtance has made them undergo a new modification. Decompoſition, or other circumſtances that may have altered the nature of the ſoil that contained theſe geodes, muſt have cauſed the developement of various fluids, which penetrating through the pores of the geode, and combining with the fluids it contained, have formed there the ſiliceous matter in the ſame manner in which water is formed by the combination of hydrogen and oxygen.

Cordier obſerved this jaſper to enter into the compoſition of an Egyptian breccia, made up of a great variety of rounded ſtones ; and it is ſuppoſed that thoſe places where this breccia forms extenſive beds, the greater part of the rolled pieces that are ſeen there, owe their preſent detached ſtate to a diſintegration of ſuch maſſes.

The Egyptian jaſper is much eſteemed on account of its delineations, which are often very ſingular ; and as it is ſuſceptible of a very high poliſh it is cut by lapidaries into thin pieces for ſnuff-boxes, broaches, &c.

2. *Ribbond jaſper*, *Striped jaſper*, Kirw. James. ; *Band jaſpis*, *Band ſtein*, Germ. ; *Quartz jaſpe onyx*, Haüy. *Jaſpe rubané*, *J. en ruban*, Broch, &c. *Jaſpis vittata*, Forſt.

It always exhibits two, three, or more colours together, which are diſpoſed in alternating, ſtraight, ſeldom waved, ſtripes or layers. The colours are yellowiſh, greeniſh, and pearl-grey, yellowiſh, and greeniſh-white, ochrey, and iſabell-yellow, mountain and leek-green, fleſh, cherry, and browniſh-red.

It is always found maſſive, internally it is dull ; the luſtre it occaſionally exhibits proceeding from admixed heterogeneous particles.

Its hardneſs is leſs than that of quartz. It is brittle and eaſily frangible ; fracture conchoidal, but ſometimes approaching to ſplintery or earthy ; alſo a tendency to the ſlaty fracture has been obſerved in ſome varieties. Fragments indeterminately angular, ſharp-edged. Specific gravity from 2.500 to 2.800.

The ribbond jaſper is found in Siberia, particularly in the diſtricts of Koliwan and Catherinebourg ; in Sicily ; Corſica ; Switzerland ; in Germany, at Gnandſtein and Wolflitz near Frohburg, in the Leipzig diſtrict ; at Ilmenau in Henneberg, at Falkenſtein ; on the Hartz, and in the Palatinate. It probably occurs alſo, according to Jameſon, in the Pentland hills near Edinburgh.

The *geognoſtic* relations of this jaſper appear to be ſufficiently diſtinct from that of the others, it forms conſiderable maſſes and beds, with whoſe connection, however, we are as yet unacquainted. The ribbond jaſper of the Hartz, as connected with grauwacke on which it reſts, cannot be doubted to be ſubordinate to the tranſition rocks. Mr. Patrin conſiders this jaſper and all others that occur in beds, and are entirely opaque, to be primitive ; and moſt of the Siberian jaſpers are in that predicament. He refers to the *ſecondary* jaſpers, all thoſe that have a vitreous fracture combined with a ſlight degree of tranſlucidity. But ſeveral circumſtances connected with the geognoſtic occurrence of the different jaſpers, prevent us from admitting this diſtinction.

The fineſt Siberian ribbond jaſper is found, together with other varieties, in the hills that border on the ſouthern part of the Ural mountains, about 100 or 150 leagues northward of the Caſpian ſea, in the neighbourhood of the fortreſs of Orſkaia. The red and green layers of this jaſper being ſo well defined and regular, it is made uſe of for ſeveral purpoſes of ornament, particularly for cameos. It is not found in large maſſes. Patrin informs us, that when ſeen in its native place, it appears to admit of being quarried in blocks of ſeveral feet in ſize ; but as ſoon as the rock is wrought, it ſeparates into ſmall pieces.

3. *Porcelain-jaſper*. *Porcellanite*, Kirw. *Jaſpe porcellaine*, Broch. *Jaſpe porcellanite*, Brongn. *Thermantide porcellanite*, Haüy. *Diaſpro porcellanico*, Nap. *Porzellan-jaſpis*, *Porzellanſtein*, Germ.

Its principal colour is a bluiſh-grey, of various intenſity, generally intermediate between pearl-grey and lavender-blue. It is alſo found yellow, ſuch as ochre and ſtraw, and even pale orange-yellow, which paſſes into brick-red. Clove-brown and liver-brown are likewiſe mentioned among its colours ; as alſo bluiſh-black and mountain-green. Sometimes ſeveral of theſe colours occur together in ſpots, and in flamed and clouded delineations. The bluiſh-grey varieties, however, exhibit generally but one colour, beſides the red and yellowiſh-brown colour on the rifts, and the red or brown coloured impreſſions of various vegetables.

It occurs commonly maſſive, and ſometimes in blunt-edged and rounded rolled pieces, which, in the rents they exhibit, bear evidently the marks of the action of fire.

Internally its luſtre is inconſiderable ; it ſeldom approaches to ſhining.

Its hardneſs is inferior to that of moſt other jaſpers ; it is very brittle : fracture imperfectly conchoidal, approaching to even : fragments indeterminably angular, pretty ſharp-edged ; perfectly opaque ; ſpecific gravity 2.330, Kirwan ; 2.603, Wiedenmann.

By the continued application of intenſe heat, the porcelain-jaſper, according to Wiedenmann, may be fuſed into a black ſcoria. But the yellow variety, operated upon by Klaproth, ſhewed no change either in the clay or charcoal crucible, except that in the former it was ſeen to contract, and its ſurface to become dark ſteel-grey and dull, while in the charcoal crucible a ſmall piece became black and gliſtening, and acquired a yellowiſh-brown ſurface.

The conſtituent parts of the pearl-grey variety, from Stracke, in Bohemia, are ſtated as follows by the late Mr. Roſe, by whoſe death the world has loſt one of the moſt accurate analyſts.

Silica	60.75
Argil	27.25
Magneſia	3.00
Oxyd of iron	2.50
Kali	3.66
	97.16

Karſten Min. Tabellen, p. 25 and 71.

Mr. Lampadius, who examined the lavender-blue variety of porcelain-jaſper, obtained reſults very different from thoſe of the preceding analyſis, *viz.*

Silica	33.50
Argil	58.00
Magneſia	4.00
Oxyd of iron	3.00
	98.50

Samml. Pract. Chem. Ath.

This ſubſtance is found in Bohemia (at Schwintſhitz, Stracke, near Carlſbad, &c.), in Saxony (at Planitz), in the Upper Palatinate, in Heſſia (near Almerode), in Saarbruck (at Dutweiler), in Siberia (at Kuſnezk, in the diſtrict of Koliwan), Iceland, &c. It occurs in conſiderable maſſes, and obviouſly owes its origin to the action of ſubterraneous fire: Werner therefore ranks it with his pſeudo-volcanic, or ſuch foſſils whoſe nature has been conſiderably altered by the proximity of that agent. That it has not been in a ſtate of fuſion is proved by the impreſſions of plants ſo frequently obſerved in it, and which beſpeaks the foſſil to have originally been that variety of ſlate-clay which belongs to the coal formation. We accordingly find it in company with burnt clay, earth-ſlag, &c. in countries which have either formerly experienced the ravages of ſubterraneous fires, or where beds of coal are actually in a ſtate of ignition. It is a fact worthy to be noticed, that at Dutweiler, in the county of Saarbruck, which not long ago experienced the ſpontaneous inflammation of a bed of coal, both porcelain-jaſper, and other pſeudo-volcanic ſubſtances, are ſeen as it were in a progreſſive ſtate: they are more or leſs changed in proportion to their diſtance from the principal ſeat of the ſubterraneous fire; and the vegetable impreſſions which they exhibit are in every reſpect the ſame with thoſe obſerved on the ſlate-clay.

The porcelain-jaſper has obtained its name from its appearance, and the circumſtances connected with its origin. It takes a moderate poliſh, but is not applied for ornamental purpoſes. Indeed, there are ſeldom any large pieces of it found without rifts and fiſſures.

4. *Common jaſper. Gemeiner jaſpis*, Germ. *Diaſpro commune*, Nap. *Quartz jaſpe*, Haüy. *Jaſpe commun*, Broch. *Silex jaſpis vulgaris*, Lat.

Its principal colours are brown, red, and yellow; the brown is yellowiſh, reddiſh, clove, liver, blackiſh-brown, approaching to black; the red is tile, and blood-red of various ſhades, ſeldom fleſh-red; the yellow is moſtly ochre-yellow, which paſſes into greeniſh-yellow; alſo various ſhades of green are obſerved among the colours of the common jaſper, ſuch as mountain, verdigris, and olive-green, but they are leſs frequently met with. Several of theſe colours are ſometimes ſeen together in ſmall irregularly ſtriped, ſpotted, and clouded delineations.

It occurs commonly maſſive, but alſo alternating in thin layers with quartz, &c. and diſſeminated, as in the blood-ſtone; it is likewiſe found in blunt-edged rolled pieces.

Internally its luſtre is intermediate between gliſtening and ſhining; it is rather vitreous.

It is nearly of the ſame hardneſs as the preceding ſubſpecies; it is brittle and eaſily frangible: fracture more or leſs perfectly conchoidal, approaching in ſome varieties to ſplintery, from which it paſſes into fine earthy. Fragments indeterminately angular, pretty ſharp-edged: they are generally opaque, but now and then tranſlucent at the edges. Specific gravity, 2.580 to 2.700, Kirwan; 2.652 to 2.663, Sauſſure; 2.666, Muſchenbroek; 2.692, Blumenbach.

Common jaſper is infuſible without addition before the blow-pipe; it only loſes its colour by the application of intenſe heat; with borax it is diſſolved without ebullition, while ſoda and phoſphoric acid combine with it in an imperfect manner only; when urged by oxygen gas it is converted before the blow-pipe into a white or dark grey globule.

According to Kirwan the common jaſper conſiſts of

Silica	75.00
Argil	20.00
Oxyd of iron	5.00
	100

Mr. Lampadius thinks that he has found that the reddiſh-brown variety is generally coloured by the oxyd of uranium and ſome iron, the proportion of the uranium being about three per cent.

Among the *localities* of the common jaſper are: Saxony (Altenberg, Geiſing, Freiberg, Seiferſdorf, Schneeberg, Eibenſtock, &c.); Bohemia (Jeſhkner mountains, &c.); Sileſia (Bunzlau, Landſhut, &c.); Salzburg; Steurmark; Hungary and Tranſylvania; Italy, particularly Sicily; France; Scotland (according to Jameſon, in the tranſition rocks near Edinburgh), the Shetland iſlands, Norway, &c.

The common jaſper is excluſively a production of veins: it occurs in ſuch as are chiefly compoſed of iron ore, to which indeed it appears to bear great geognoſtic affinity. The ſubſtances with which it occurs together in theſe veins are red and brown iron-ſtone, iron-flint, quartz, opal, lithomarge, &c.; as alſo, ſometimes, galena, pyrites, and vitreous ſilver. But common jaſper is alſo found conſtituting veins for itſelf without any metallic ores, and only accompanied by ſome amethyſt or common quartz, which in this caſe generally occupy the middle of the vein. It likewiſe occurs as a conſtituent part of agate balls in amygdaloid. At Salzburg it is ſaid to have been found in calcareous and clay ſlate rocks, and at Offenbanya, to form the baſis of a particular kind of porphyry; but this latter obſervation ſeems to be founded on error, ſince all the Tranſylvanian varieties of porphyry that have fallen under the obſervation of Werner, and other mineralogiſts well acquainted with the true characters of jaſper, have pronounced them to belong to the clay, horn-ſtone, and pitch-ſtone porphyries.

Moſt varieties of the common jaſper are ſuſceptible of a tolerably good poliſh, whence they are frequently cut by the lapidaries, and formed into ſnuff-boxes, buttons, ſeal-ſtones, (ſee GEMS, *engraved*) &c.; ſome varieties that may be procured in voluminous blocks are wrought into tables, mantle-pieces, ſmall pillars, and other objects of ornamental architecture. The following are moſt frequently ſeen in the hands of the lapidary:

The *red jaſper*, on which we poſſeſs ſome very fine antique engravings. It is found at Giuliano, at San-Stefano, at Cornerata, and at Monte-Vago, in Sicily; and occurs alſo in the vicinity of Geneva, in the valley of Chamouni; at Grenoble, in the department of the Iſere; and at Mont-More, in the department of the High Alps. Canavais, in Piedmont, is ſaid likewiſe to furniſh good red jaſper. This ſhould not be confounded with iron-flint and ſinople, which is a variety of quartz.

The *yellow jaſper*: it is ſeldom found in large pieces, and only uſed for inlaid work, moſaic, &c. The beſt is found at Giuliano, in Sicily; and it occurs alſo in the valley of Chamouni, and between Varet and Grenoble, in the department of the Iſère. This variety is ſeldom found equally tinged, but often traverſed by white and red veins.

Brown jaſper of various ſhades. This is the moſt common, and moſt frequently ſeen converted into objects of ornament, vaſes, pedeſtals, &c. It takes a very fine poliſh.

What the Italians call *Paragone* is, properly ſpeaking, the Lydian ſtone; but the name is now and then applied to a *black* variety of jaſper, much eſteemed by lapidaries for ſeal ſtones, &c. It is ſaid to be found at Giuliano in Sicily. (Alſo a black marble is ſometimes improperly called *Paragone.*)

The exiſtence of a *ſnow white* variety of common jaſper is doubted by ſome. What goes by this name is a white ſtone marked here and there with fine red lines; but as it has been ſeen cut and poliſhed only, its nature is not determined with accuracy. Another white jaſper is mentioned by Herrmann as occurring in more elevated parts of the Altaic mountains, near the ſource of the Korgoo; it is marked with black dendritæ. Specimens before us have the appearance of horn-ſtone.

The galactites of Pliny is, by ſome writers, conſidered as a white jaſper.

5. *Agate Jaſper; Jaſp.agate; Agat Jaſpis*, Germ.

Its colour is fleſh-red, reddiſh-white, and browniſh; alſo yellowiſh-white, which paſſes into iſabell, ſtraw, and greeniſh yellow. Theſe colours form concentric rings, and figures reſembling plans of fortifications, &c.

It occurs maſſive. Has ſcarcely any luſtre. Is rather leſs hard than common jaſper. Its fracture is ſmall and flat conchoidal, approaching to even. The other external characters are thoſe of the preceding ſpecies.

The agate-jaſper is only found in agate veins, and in agate balls occurring in amygdaloid and porphyry rocks.

It is cut and poliſhed.

6. *Opal Jaſper, Quartz reſinite commun*, Haüy.

Its principal colours are ſhades of red; fleſh-red, ſcarlet-red, brick-red, blood-red, cherry-red, browniſh-red; it alſo occurs reddiſh and yellowiſh-brown, and ſeldom ochre-yellow; theſe colours exiſt variouſly mixed, as ſpots and veins in the ſame piece; ſometimes they are uniform.

It occurs maſſive.

Internally its luſtre is more or leſs ſhining, and intermediate between vitreous and reſinous.

It is nearly of the ſame hardneſs as the preceding ſubſpecies, brittle, and eaſily frangible. Fracture large or ſmall flat-conchoidal. Fragments indeterminately angular, ſharp-edged, ſcarcely tranſlucent at the edges.

The preceding characters agree partly with thoſe of the opal; and indeed the geognoſtic relation of the opal-jaſper is perfectly the ſame as that of the opal. It is moſtly found nidulating in porphyry, ſometimes in veins, and in both caſes it is conſtantly accompanied by common opal.

Its principal locality is Kaſchau, Tockay, in Hungary, and it is alſo found near Conſtantinople, and in the mountains of Kolywan, in Sibiria.

JASPONYX. See JASPER, No. 2.

JASQUE, in *Geography*, a town of Perſia, in the province of Mecran, which gives name to a cape in the gulf of Ormuz. N. lat. 25° 40′. E. long. 59° 4′.

JASSARI, a town of Sweden, in the Lapmark of Kimi, in the gulf of Bothnia; 50 miles N.N.E. of Kimi.—Alſo, a river of Sweden, which runs into the gulf of Bothnia, at the above-named town.

JASSELMARE, a country of Hindooſtan, bordering on the lower part of the courſe of the river Puddar, and on the ſandy deſert, which, as well as Nagore and Bickaneer, form a number of petty rajahſhips, and are underſtood to be moſtly inhabited by Rajpoots.

JASSENES MARMOR. See MARMOR.

JASSI, in *Geography*, a town of Turkiſtan, on the Sirr; 140 miles W. of Taraz.

JASSINGPOUR, a town of Hindooſtan, in Oude; nine miles E. of Sultanpour.

JASSUM-KALASI, a town of Aſiatic Turkey, on the W. coaſt of Natolia; 40 miles W. of Moglah.

JASSY, a city and capital of Moldavia, ſuppoſed to have been garriſoned in the time of the Romans; having a citadel and ſome fortifications. It is the ſee of an archbiſhop, and the inhabitants are chiefly Greeks; 200 miles E of Otchakov. N. lat. 47° 10′. E. long. 27° 44′.

JASTIAN, in the *Greek Muſic*, a name given by Ariſtoxenus to a mode more generally called by other authors *Ionian*. See MODE *and Muſic of the Ancients.*

JAT, in *Geography*, a town of Sweden, in the province of Smaland; 20 miles S. of Wexio.

JATOE, a town on the iſland of Borneo; 120 miles N. of Nagara.

JATRALIPTES, in *Ancient Medicine*, and the *Gymnaſium*, derived from ἰατρος, *phyſician*, and ἀλειφω, *I anoint*, an appellation given to the perſons who ſuperintend the uſe of oils and unguents in the gymnaſium, as well as to thoſe who directed unctuous applications to the ſick. Pliny inveighs againſt the luxurious extent to which the uſe of theſe perfumed ointments had been carried in his time, when the application of them employed as many people as the management of the baths. Under the jatraliptes were the *unctores*, who applied the ointment; the *fricatores*, who rubbed or curried the ſkin with the ſtrigil, or other inſtruments of a ſimilar kind; the *dropaciſtæ*, or *aliparii*, whoſe buſineſs it was to remove the hair, either by extraction or depilatory applications; and, laſtly, the *tractatores*, who were employed in gently moving and ſqueezing, or kneading all the limbs, to render them ſupple, and at the ſame time to give a pleaſing ſenſation. The jatraliptes was alſo called *aliptes;* both which terms were ſometimes alſo uſed to denote the maſters of the exerciſe, ſuch as the *gymnaſtes* and *pædotriba*. The external application of oil, for the cure of diſeaſes, became a diſtinct branch of the medical art, and was called

JATRALIPTIC MEDICINE. This was firſt introduced, according to Pliny, by Prodicus, a native of Selymbria, and a diſciple of Hippocrates. The volumes, which treat expreſsly of its precepts, are loſt; but we find the anointing of the body with oil recommended, among other remedies, in various diſeaſes; as fevers, puſtular eruptions, gout, palſy, lethargy, tetanus, hydrophobia, cholera, melancholy, dropſy, profuſe ſweating, and itch. In ſurgery, it was ſuppoſed to allay irritation in thoſe who had undergone ſevere operations, to reſolve indurations, and to remove the pain and ſwelling attending luxations. See Le Clerc, Hiſt. de la Med. part 3. lib. i.—Pliny Nat. Hiſt. lib. xiii. cap. 1. and 3. Lib. xv. cap. 4. &c. Celſus, *paſſim*. Profp. Alpin. de Med. Ægyptorum, lib. iii. cap. 15.—Alſo, Mr. Hunter's learned Eſſay on the External Uſe of Oil in the Edin. Med. and Surg. Journal, vol. ii. p. 185, for April, 1806.

JATROPHA, in *Botany*, apparently from ιατρος, a *phyſician;* the phyſic-nut. This is a virulent tribe of plants, whoſe oily ſeeds, at leaſt their cotyledons, are either eatable and wholeſome, or ſimply purgative, like thoſe of its near ally the *Ricinus* or *Palma-Chriſti.*—Linn. Gen. 503. Schreb. 655. Willd. Sp. Pl. v. 4. 557. Mart. Mill. Dict. v. 2. Juſſ. 389. Lamarck. Illuſtr. t. 791. Gærtn. t. 108. (Manihot; Tourn. t. 438.)—Claſs and order, *Monoecia Monadelphia*. Nat. Ord. *Tricoccæ*, Linn. *Euphorbiæ*, Juſſ.

Gen. Ch. Male, *Cal.* Perianth ſcarcely manifeſt. *Cor.* of one petal, funnel-ſhaped; tube very ſhort; limb in five deep, roundiſh, ſpreading, convex ſegments, concave underneath. *Stam.* Filaments ten, awl-ſhaped, approaching each other in the middle, the five alternate ones ſhorter, all erect, ſhorter than the corolla ; anthers roundiſh, verſatile. *Piſt.* a ſlight rudiment in the bottom of the flower.

Female, *Cal.* none. *Cor.* roſaceous, of five petals. *Piſt.* Germen ſuperior, roundiſh, with three furrows ; ſtyles three, cloven ; ſtigmas ſimple. *Peric.* Capſule roundiſh, three-lobed, three-celled ; each cell with two valves. *Seeds* ſolitary, roundiſh, large.

Eſſ. Ch. Male, Calyx inconſtant. Corolla of one petal, funnel-ſhaped. Stamens ten, alternately ſhorter and longer.

Female, Calyx none. Corolla of five petals, ſpreading. Styles three, cloven. Capſule of three cells. Seeds ſolitary.

Obſ. J. *urens* is ſaid to have but nine ſtamens. Willdenow reckons 17 ſpecies of this genus, of which about eight were known to Linnæus, though not very perfectly. For examples of *Jatropha* may ſerve

J. *pandurifolia*. Andr. Repoſ. t. 267. Curt. Mag. t. 604. (J. acuminata ; Venten. Jard. de la Malmaiſ. t. 52)—A native of Cuba, remarkable for its fiddle-ſhaped leaves, and beautiful deep ſcarlet flowers.

J. *Curcas*. Jacq. Hort. Vind. v. 3. t. 63 ; a native of South America, ſometimes kept in the ſtoves of botanic gardens.

J. *Manihot*, whoſe root makes the Caſſava bread in the Weſt Indies, being, though a virulent poiſon, rendered ſweet and harmleſs by waſhing its grated ſubſtance.

All theſe are ſhrubs. The *leaves* of the whole genus are ſtalked, alternate, generally lobed, and often palmate. *Flowers* corymboſe.

JATS, Jates, or *Jetes*, a tribe of Hindoos, who long ſince the death of Aurungzebe erected a ſtate in the provinces of Agra and Delhi. They appeared at firſt no otherwiſe than as banditti, but at laſt formed a regular ſtate, and fixed their capital at the city of Agra, and appear to have poſſeſſed a tract of country, along both ſides of the Jumnah river, from the neighbourhood of Gwalior to that of Delhi ; in length about 160 miles and 50 broad. Col. Dow, in 1770, eſtimated their revenue (perhaps extravagantly) at 200 lacks of rupees, and their force at 60 or 70,000 men. This nation is traced by P. Wendell from the countries lying between the S.E. confines of Moultan and Gohud. Tamerlane, it is certain, made war on a people, called the "Getes," in his march from Batnir to Samanah. Nudjuff Cawn, at a late period, diſpoſſeſſed the Jats of their whole country, except the confined territory of Bhartpour. Madajee Sindia has, in turn, ſtripped Nudjuff Cawn's ſucceſſors of theſe conqueſts, which are now ſcarcely worth poſſeſſing, although a few years ago, under Soorage Mull, they ranked among the moſt flouriſhing provinces of Hindooſtan. The Jats no longer exiſt as a nation : all that remains to Runjet Sing, the ſon of Soorage Mull, being the fort of Bhartpour, or Burratpour, ſituated about 45 miles on the weſt of Agra, with a ſmall territory of four or five lacks of rupees. The rajah of Gohud is of the Jat tribe, but unconnected with Rumjet Sing. Rennell's Memoir.

JATTENDALS, a town of Sweden, in Helſingland ; 16 miles N. of Hudwickſwall.

JATTIR, in *Scripture Geography*, a city of Dan (Joſh. xv, 48.), afterwards given to the Levites of Kohath's family. (Joſh. xxi. 14.) Euſebius ſays, that it is ſituated in the diſtrict of Daroma, towards Malatha, about 20 miles from Eleutheropolis.

JATTRA, in *Geography*, a town of Bengal ; 15 miles N. of Midnapour.

JATTS, a ſmall iſland in the Atlantic, near the coaſt of Guinea. N. lat. 11° 48′. W. long. 15° 50′.

JAU de st. Elias, a town of Brazil, on the river Negro ; 70 miles W. of Fort Rio Negro.

JAVA, one of the largeſt iſlands conſtituting the Archipelago in the Eaſt Indian ſea, about 650 Britiſh miles in length, and in medial breadth about 100 miles, ſituated between 5° 45′ and 8° 48′ S. lat., and 105° and 114° 40′ E. long. This iſland lies nearly in the direction of E. and W. and to the S. and W. its ſhores are waſhed by the ſouthern Indian ocean. On the N.W. lies the iſland of Sumatra, from which it is ſeparated by the ſtraits of Sunda ; to the N. Borneo, from which it is ſeparated by the Java ſea ; to the N.E. at a conſiderable diſtance, Celebes ; to the E. Bali, divided from it by a narrow paſſage, called the ſtraits of Bali. This iſland is the ſouthernmoſt of thoſe four large iſlands, the other three being Sumatra, Borneo, and Celebes, which were formerly known by the appellation of the Sunda iſlands ; and when the Dutch company firſt eſtabliſhed themſelves here, Java was divided into three large empires, *viz.* Bantam, Jaccatra, and the empire of the Soeſoehoenam, which laſt was the moſt extenſive, and comprehended full two-thirds of the whole iſland, Cheribon being feudatory to it. But it is at preſent divided into five ſtates or empires, *viz.* Bantam, Jaccatra, Cheribon, the empire of the Soeſoehoenam, and that of the Sultan ; which altogether contain 123 provinces, or governments, the kingdom of Bantam being conſidered only as one. The four firſt of theſe are ſo dependent on the Dutch, as to be under engagements to deliver their produce to the Dutch, and not to ſell any of it to any other nation. Each province, or government, conſiſts of a certain number of "tjatjars," or families, the number of which, throughout the whole of Java, including Bantam, amounted, in the year 1777, to 152,014. Theſe families are eſtimated to conſiſt of 912,084 perſons ; and if to theſe we add the inhabitants of the principality of Madura, which, though a ſeparate iſland, is always conſidered as connected with Java, and contains 10,000 families, or 60,000 perſons, the whole population of Java and Madura will amount to 972,084 perſons. Huyſen, however, gives the population of Java, excluſive of Madura, as follows : *viz.* in the kingdom of Bantam, 5000 families, in Jaccatra 33,914, in Cheribon 15,000, in the Mataram, or empire of Java Proper, 94,200, making in all 148,114 families, which, allowing ſix individuals to each family, will give 888,684 for the whole number of inhabitants ; but from more recent accounts he infers, that the population of Java is 1½ or 2 millions of people. Theſe ſtatements do not include the inhabitants of *Batavia* ; which ſee. A chain of high mountains, commencing to the E., in the province of Balambouang, and running through it to the W., but decreaſing in height, divides Java, longitudinally, into two parts, of which the northern portion is the largeſt and the beſt. The north coaſt has every where a low and woody foreland, with ſome hills, particularly W. of Bantam, where the high land ſtretches down to the ſea-coaſt. This iſland has ſeveral deep bays on the north ſide, as thoſe of Bantam, Batavia, Cheribon, Samarang, Joana and Sourabay, which afford every where good anchorage. The ſouth coaſts are much leſs known than thoſe on the north. In the good monſoons, the ſky is almoſt always clear, except near the time of the breaking up of the monſoons, when many and violent thunder ſtorms rapidly ſucceed each other. In the bad monſoons, the weſt winds, which then prevail, bring with them heavy rains and violent thunder-ſtorms, without much alteration in the temperature ; the thermometer, in the warmeſt part of the day, generally ſtanding at between 82° and 88°. The effect of this degree of heat is much moderated by the alternate land and ſea breezes, which blow every day in regular rotation. The barometer ſeldom varies more than two or three lines. Thunberg mentions ſeveral volcanoes in this iſland, one of which had overwhelmed with aſhes a great number of coffee plantations. Java is watered by a great number of rivers, which deſcend from the chain of mountains above-mentioned, but none of them are navigable for large veſſels. The ſoil is every where a reddiſh granulated clay, which in the dry ſeaſon is ſo hard, as to be incapable of cultivation without much moiſtening, but with little labour it is extremely fertile. Ploughing is performed with buffaloes, which abound in this iſland. In general agriculture no manure is uſed; but the gardens are moiſtened with water in which oil-cakes have been ſoaked, and which renders the ſoil rich and fat. The only method which the farmer takes with his land conſiſts in burning upon it all the weeds and rubbiſh which it produces; and when one piece of ground ceaſes to yield ſufficient crops, recourſe is had to another; and the firſt is ſuffered to lie fallow for ſeveral years, after which it again recovers its fertility. The articles produced in this iſland are much more valuable than thoſe of all the neighbouring countries; of theſe the firſt article is rice, which not only ſupplies the inhabitants but provides for the eaſtern provinces and the iſland of Ceylon: this rice is of two kinds, one ſort being ſet nearly under water and another ſort planted in the rainy ſeaſon, on high ground and upon the mountains; the former, however, is the beſt, and bears the higheſt price. The pepper of Java is alſo a profitable article to the Dutch company, and ſo is the ſugar, the beſt of which is from the province of *Jaccatra*, which ſee. Coffee is likewiſe a product very advantageous to the company, the greateſt quantity being furniſhed by the provinces of Jaccatra and Cheribon. Cotton is alſo a production of Java of great value. Java alſo yields to its poſſeſſors the article of ſalt. The N. E. coaſt of the iſland, and part of the diſtrict of Cheribon, afford a very large quantity of timber, logs, beams, boards, &c. which not only ſupplies Batavia for various purpoſes, but admits of an annual exportation of a conſiderable quantity to ſeveral of the out-factories, and in particular to the Cape of Good Hope. Indigo, though it be not an original production of Java, has been cultivated with tolerable ſucceſs ſince the Dutch company have been eſtabliſhed here. Turmeric, long pepper, and cubebs, are alſo productions of this iſland. This iſland abounds with fruit-bearing trees, ſuch as the cocoa-nut palm, the Suri tree, which yields the palm-wine or toddy, china-oranges of a larger and ſmaller ſize, the tamarind-tree, the ſhaddock, the durioon or derioon-tree, the fruit of which reſembles the bread-fruit, and which is conſidered as diuretic, ſudorific, and ſerviceable in expelling wind, the Surſak-tree, the mango-tree, the mangoſtan, lemon and lime-trees, pine-apples, and many others.

The native inhabitants, called Javaneſe, whether they belong to the kingdom of Bantam, or to any other part of Java, are of a middling ſize, generally well proportioned, of a light brown or yellow complexion, with a broad forehead, and flattiſh noſe, curving downwards at the tip. The hair is black, and always kept ſmooth and ſhining by the uſe of cocoa-nut oil. They are in general proud and indolent, as well as cowardly. Their principal weapon is a kind of dagger, called a "kris," which is often poiſoned, and cauſes immediate death. Arrogant towards their inferiors, they are no leſs cringing with reſpect to their ſuperiors, from whom they expect any favour. Their dreſs conſiſts in a piece of cotton, wrapped round the waiſt, and drawn between the legs, ſo as to be faſtened behind. They are otherwiſe naked, except that they wear a ſmall cap on the head. Thoſe of ſuperior rank wear a wide Mooriſh coat of flowered cotton, or other ſtuff, and in general turbands. They ſuffer no hair but that of the head to grow. The dreſs of the women is little better than that of the men, except that it is more cloſe and covers more of the body; the hair of the head, worn long, is turned up, and twiſted round the head like a fillet, faſtened with long bodkins of various materials, and adorned with flowers. Men and women are fond of bathing. Children of both ſexes are entirely naked till about eight or nine years of age. Twelve or thirteen is their age of puberty. The Javaneſe are polygamiſts, and beſides their wives, who are as many as they can maintain, they take their female ſlaves for concubines. The women are more comely than the men; they are extremely jealous: and puniſh thoſe whom they ſuſpect of inconſtancy and infidelity by the adminiſtration of emaſculating drugs. Their habitations, rather huts than houſes, are conſtructed of ſplit bamboo, interlaced or matted, plaiſtered with clay, and covered with the leaves of the cocoa tree. The entrance is low, and they have neither door nor ſhutter. The whole houſe conſiſts uſually of one apartment, in which huſband, wife, and children, and alſo their poultry, of which they keep a great number, lie together on the ground. Their chief food is boiled rice, with a little fiſh, and their drink is water. They take a little arrack when they can obtain it, and are almoſt always chewing betel or pinang; and likewiſe a ſort of tobacco, produced here, and therefore denominated Java tobacco. This they ſmoke through pipes made of reed. They ſometimes put opium into their pipes with the tobacco, in order to invigorate their ſpirits; but the continual uſe of it rather deadens them. They have neither tables nor chairs; but ſit upon the ground, on mats, with their legs croſſed under them. They make no uſe of knives, forks, or ſpoons, but eat with their fingers. They have a certain kind of muſical inſtrument, called "gomgome," conſiſting in hollow iron bowls, of various ſizes and tones, upon which a perſon ſtrikes with an iron, or wooden ſtick, and which emit ſounds like a ſet of bells. They are very fond of cock-fighting, for which they keep a peculiar breed. The tax upon their game-cocks forms part of the revenue of the province of Jaccatra. One of their favourite diverſions, at which they are very dextrous, is a kind of tennis-play; in which they ſtrike the ball, which is of the ſize of a man's head, hollow, and made of matted reeds, with their feet, knees, or elbows. Their manner of ſalutation conſiſts in touching the forehead with the right hand, accompanied by a ſlight inclination of the body. The Mahometan religion, introduced into Java by the Arabians, is predominant over the whole iſland; though it is ſaid, that far inland, over the mountains, towards the S. ſide of the iſland, there are ſtill ſome of the aboriginal idolatrous natives. Moſques are erected all over the iſland, and there is a famous one near Cheribon. They are very particular and nice about the tombs of their ſaints, and will ſuffer nothing unbecoming to be done upon or near them. They do not bury their dead in coffins, but ſimply wrap them in a piece of white linen, and having depoſited them in the grave, place two ſtones upon it, one at the head, and one at the feet. Theſe ſtones, they believe, are to ſerve as ſeats for the two angels, who, after their death, examine into their conduct, while in this world. They have both male and female phyſicians, who are ſaid to perform wonderful cures by means of their knowledge of the medicinal and vulnerary herbs. Much friction of the affected parts is one of their chief means of cure. This is done with two fingers of the right hand, which are preſſed down by the left, and paſſed continually downwards, after having firſt anointed the part with water mixed with fine ground wood, or with oil. The coin of Java is of lead, like that of Sumatra and Borneo. The language of Java is the Malay, or a dialect ſomewhat akin to it. The original inhabitants of the country are not ſuffered to be made ſlaves, but are a free people, governed by their own emperors, kings, and governors. The capital of Java is *Batavia;* which ſee.

Java *Head*, the weſtern point of the iſland of Java. S. lat. 6° 47'. E. long. 107° 40'.

Java, *Little.* See Bali.

Java *Sea*, that part of the Eaſt Indian ſea, which lies between the iſland of Java to the ſouth, Sumatra to the weſt, the iſlands of Banca, Billiton, and Borneo to the north, and the iſland of Celebes to the eaſt.

JAVAT, or Tschavat, a town of Perſia, in the province of Schirvan, at the union of the Aras and the Kur; 45 miles S. of Scamachie. N. lat. 39° 55'. E. long. 48° 10'.

JAVELIN, a kind of ſpear, or half-pike, uſed by the ancients both on horſeback and on foot.

It was five feet and a half long; and the ſteel wherewith it was headed, had three ſides, or faces, which all terminated in a point.

The javelin match was one of the Gymnaſtic exerciſes among the ancients, and conſiſted either in throwing a ſtone, or a dart, or ſomething elſe, with the moſt addreſs, and to the greateſt diſtance. Plato (De Leg. l. viii.) admitted two ſorts of "Jaculations," the firſt called τοξικην, and the other ακοντισμα; and Galen informs us, that Apollo and Eſculapius were the inventors of them. The Latins tranſlated the firſt by the word "Sagittatio," and the ſecond by that of "Jaculatio." In thoſe exerciſes they equally employed either a bow or a ſling, or another inſtrument, which they made uſe of for hanging to the arrow a thong which they held in their hand, to take the more ſteady aim.

JAVENBY, in *Geography*, a town of Sweden, in Weſt Bothnia; eight miles S. of Pitea.

JAUER, a principality of Sileſia, bounded on the N. by the principalities of Glogau and Sagan, on the E. by Lignitz and Schweidnitz, on the S. by Bohemia, and on the W. by Bohemia and Luſatia. It is mountainous and covered with wood; and it yields pit-coal and mill-ſtone. The mountains contain various ores, with numerous mines of iron and copper. The warm baths of its mineral ſprings are much frequented. It has 12 towns, and ſeveral large villages, which contain 200 families and upwards; and among their inhabitants are artificers, particularly weavers, whoſe manufactures are purchaſed for exportation. Its earthenware is much eſteemed. Jauer, its capital, is ſituated 16 miles N. of Schweidnitz. N. lat. 51°. E. long. 16° 18'. Its other principal towns are Hirſchberg, Lowenberg, and Bunſlau, which give names to diſtricts.

JAVERDA, a town of Hindooſtan, in Dowlatabad; 10 miles S. of Calberga.

JAUJA, a city of Peru, famous for its manufacture of woollen cloths, and mines of ſilver.

JAVIE, La, a town of France, in the department of the Lower Alps, and chief place of a canton, in the diſtrict of Digne. The place contains 130, and the canton 2401 inhabitants, on a territory of 75 kiliometres in 10 communes.

JAUJESMOW, a town of Hindooſtan, in Oude; 15 miles N. of Corah. N. lat. 26° 25'. E. long. 80° 46'.

JAULDOE, a town of Bengal; 142 miles N.W. of Calcutta. N. lat. 23 23'. E. long. 86 7'.

JAULNO, a town of Hindooſtan, in the circar of Aurungabad; 28 miles N.E. of Aurungabad.

JAUMS, among *Carpenters*, denote the door-poſts, as alſo upright poſts at the end of window-frames.

Jaums, among *Bricklayers*, &c. the upright ſides of chimnies, from the earth to the mantle-tree.

JAUNDICE, in *Medicine*, from the French *jauniſſe*, (which again is from *jaune*, *yellow*,) a diſeaſe which is principally characterized by a yellowneſs of the ſkin over the whole body, and of the coats of the eye.

The appellation of *Aurigo* has been alſo given to this diſeaſe, from *aurum*, *gold*, in alluſion to the yellow colour of the ſkin. The Romans called it *morbus regius*, or the royal diſeaſe, and *morbus arcuatus*, or *arquatus*, the origin of which names has afforded matter of diſpute to the etymologiſts, who have not come to any ſatisfactory concluſion on the ſubject. Celſus believes that it was called *regius*, becauſe it requires *rich* or *royal* fare to cure it. And the term *arcuatus* is ſaid to have originated from the various colours of the ſkin reſembling thoſe of the rainbow. By the Greeks it was denominated ικτερος, *icterus;* whence alſo *icteritia*. Sauvages has adopted this laſt as the title of the ſixth order, of his tenth claſs of diſeaſes, underſtanding by "icteritiæ" (couleurs depravées) morbid changes of the complexion, and denoting jaundice by the term *Aurigo.* See his Noſol. Method. —Alſo, Van Swieten Comment. Aph. 918.—And Celſus, lib. iii. cap. 24.

Jaundice is marked by a yellow colour of the whole ſurface of the body, which is firſt ſeen, and is moſt conſpicuous, in the tunica conjunctiva, or white part of the eyes, and at the roots of the nails. The urine is thick, of a deep yellowiſh brown colour, and tinges linen and other white ſubſtances, immerſed in it, of a yellow hue. The bowels are often coſtive, but ſometimes looſe; and the ſtools are commonly of a very pale and clay-like appearance both in conſiſtence and colour, from the abſence of bile, and have not the uſual fæculent ſmell. This diſeaſe is accompanied with a ſenſe of much laſſitude and languor, and a great inaptitude to exertion; with lowneſs of ſpirits, and a feeling of pain and tenſion, or weight and oppreſſion about the præcordia; there is alſo frequently much anxiety, and ſome degree of difficulty of breathing, as well as a troubleſome ſenſe of itching over the ſkin, unattended by any eruption. Many ſymptoms of indigeſtion are generally preſent; ſuch as nauſea, vomiting, flatulency, and eructations, and loſs of appetite: ſolid food taſtes bitter in the mouth of ſome patients; and in ſome ſtates of the diſeaſe hiccup occurs, and occaſional paroxyſms of rigour or chillineſs. The pain is ſometimes extremely acute in the epigaſtrium, or pit of the ſtomach, or in the right hypochondrium, eſpecially during the paſſage of a gall-ſtone. The ſtate of the pulſe varies much; in general it is ſomewhat quicker than natural; but in ſome caſes, and particularly under the circumſtance juſt mentioned, it is ſlower. There is a popular notion that all objects appear of a yellow colour to patients labouring under jaundice; and, indeed, Galen, Hoffmann, Boerhaave, and Sydenham, all aſſert that they have occaſionally witneſſed that circumſtance. But, on the other hand, Dr. Heberden, and other phyſicians of much obſervation and experience, have never found ſuch a change of viſion in any patient, nor have we ever met with any living practitioner by whom it had been detected. It is not, indeed, an impoſſible caſe, particularly where the diſeaſe has been of very long continuance and great intenſity; when, ſhould the cornea or humours of the eye become impregnated with bile, the light would paſs through a yellow medium, and objects thus be tinged of that colour. But theſe parts are not uſually found impregnated with bile.

The ſymptoms of jaundice originate from the mixture of bile with the circulating blood. In its ordinary ſtate the blood contains no bile, nor any other of the ſecretions, ſuch as urine, ſaliva, &c.; but the bile is generated from the blood, by a different combination of its parts, which is produced by the action of the veſſels of the liver. When thus generated or ſecreted, as the term is, the bile is conveyed to the inteſtines by a duct which opens into the *duodenum*, or upper part of the alimentary canal. Branching from the middle of this duct, however, is another duct, which leads to the gall-bladder, into which the bile regurgitates. This is called the *cyſtic* duct; and that part of the duct of the liver above the branching off of the cyſtic duct, is called ſimply the *hepatic* duct: but the part below, or between this and the inteſtine, being the common channel for the bile from the liver, and for that which had regurgitated into the gall-bladder, is called the "common biliary duct," or *ductus communis choledochus*. Thus much it ſeemed neceſſary to ſtate, in order that our future obſervations may be underſtood. For a minute account of the ſtructure of the parts, ſee LIVER.

Now, after the bile is ſecreted, if the hepatic, or the common duct be obſtructed, ſo that the paſſage of the bile into the inteſtine be prevented, it is forced back into the liver, and is taken up by the abſorbent veſſels, and carried into the maſs of the circulating blood, in the ſerum of which it is diſſolved, and thus gives it its own yellow colour. The blood, thus tinged, carries the dye with it to every part of the body, and hence the general hue of jaundice is produced. It would ſeem, however, that the bile, in a liver diſtended by obſtruction of the ducts, is not only taken up by abſorption, but is alſo forced into the mouths of the hepatic veins, according to the obſervations of Dr. Saunders and Dr. Powell. For both theſe gentlemen have witneſſed the preſence of bile in the thoracic duct on diſſection; and Dr. Saunders found the ſerum of the hepatic veins in a dog, in which jaundice had been a ſhort time before produced by a ligature on the common biliary duct, evidently more loaded with the colouring part of bile, than that ſerum in the other veins of the body. (See Saunders's Treatiſe on the Structure, Economy, and Diſeaſes of the Liver. Powell's Obſ. on the Bile and its Diſeaſes, &c. p. 56.) When the bile reaches the circulation, the intenſity of tinge which different parts receive will be in proportion to their vaſcularity, and the quantity of colouring matter thus carried to them; or to the natural hue of the part being more or leſs calculated to ſhew it, as in the eye and white of the nails. All the ſolid parts of the body, except the medullary ſubſtance of the brain, as ſome have affirmed, even the bones themſelves, the fat and the cartilages, have been obſerved to be deeply tinged of a yellow colour. The ſecreted fluids are generally alſo deeply tinged. In caſes of ſome duration, the perſpirable matter is coloured, ſo likewiſe is the ſaliva, which has a very bitter and bilious taſte: but the urine is much more highly impregnated with bile, and more ſpeedily than any other of the ſecretions. Indeed the milk is the only exception which is made by authors; for the affection is ſuppoſed to extend even to the ſemen. (Van Swieten.) As we have already ſtated, however, poetic licence ſeems to have got the ſtart of obſervation, in affirming that the bilious tinge extends to the humours of the eye, which has not been detected by modern inquirers.

> "Lurida præterea ſpectant quæcunque tuentur
> Arquati,"
>
> Lucret. lib. iv. v. 333.

is probably without any foundation, as well as Shakſpeare's aſſertion to the ſame purport. (See Heberden, Med. Tranſ. vol. ii. p. 132.) The fluids, which are often preternaturally collected in the cavities of the body, as in thoſe which conſtitute the varieties of dropſy, and thoſe which are accumulated in bladders upon the ſurface, in conſequence of the application of bliſters, or other acrid matters, to the ſkin, are alſo found tinged with bile; and ſo likewiſe is that fluid which, under ſome circumſtances, is collected in the ventricles, and which, in other reſpects, differs materially from the effuſions into other cavities. Powell, loc. cit.

It is generally ſtated that coſtiveneſs attends the jaundice, in conſequence of the want of bile, which is believed to be the principal ſtimulus to the inteſtines. But Dr. Heberden juſtly remarked, that icteric patients are often diſpoſed to have a purging, and that certainly neither of theſe ſtates is peculiar to the diſeaſe: and Dr. Powell obſerves, that the greater number of patients, whom he has attended, have been rather purged than otherwiſe. He remarks, that the degree of the coſtiveneſs militates much againſt the notion, that it originates in a deficiency of bile in the inteſtines. "Suppoſing for a moment," he ſays, "that bile is the ſtimulus imagined, it acts with a definite force, exemplified in the daily occurrence of ſtools: now, under theſe circumſtances, any common purgative ſtimulates the inteſtines ſtill more, and produces more copious evacuations; but where bile is abſent and there is coſtiveneſs, even the ſtrongeſt purgatives fail of their effect, though, as far as their ſtimulating power goes, they muſt infinitely ſurpaſs any quantity of the bile itſelf. If, too, this deficiency was the ſole occaſion of ſo unpleaſant a ſymptom, it might be thought that the bile of animals might be advantageouſly employed for its removal: but even this does not anſwer, nor has a ſcruple of inſpiſſated ox-bile ſtimulated my own inteſtines to more frequent or copious diſcharges. Upon the whole, I think that coſtiveneſs ought not, in this caſe, to be attributed to abſence of bile, and that bile is certainly not the ſtimulus which has been imagined." (P. 87.) This reaſoning is by no means concluſive; but it puts the matter in a probable light.

Cauſes of Jaundice.—The cauſes which obſtruct the paſſage of the bile out of the liver, are to be found in the various circumſtances which can *obſtruct*, *compreſs*, or *diminiſh the calibre* of the biliary ducts, particularly of the ductus communis. Under theſe three heads we ſhall treat of the individual cauſes of the diſeaſe for the ſake of diſcrimination.

I. *Of Obſtruction in the Biliary Ducts*, or of the cauſes which plug up thoſe paſſages. The ductus communis is liable to obſtruction from two cauſes, namely, from gall-ſtones, biliary *calculi*, or concretions, as they have been termed, and from a morbid inſpiſſation or denſity of the bile.

1. *Gall-ſtones* are generally formed in the gall-bladder, and acquire their chief bulk there; but from what cauſe theſe cryſtallizations take place we are altogether unable to ſtate. While they remain in the gall-bladder they are perfectly harmleſs; and when they are very ſmall they readily paſs with the cyſtic bile. The principal inconvenience, then, ariſes upon the accident of their being carried from the cyſt into the narrow ducts. Biliary concretions are very frequently found in the gall-bladder, in the diſſections of dead bodies, when no ſymptom has appeared during the life of the perſon to excite a ſuſpicion of their exiſtence.

When a gall-ſtone is impacted in the duct, a pain, which is often moſt acute and ſevere, ſo as to be hardly ſupportable, but ſometimes moderate, is produced, and is often accompanied by ſhiverings, which afterwards occaſionally recur. The pain is ſeated at the pit of the ſtomach, and ſeems generally to be confined to that point of the epigaſtric region which correſponds to the ſituation of the opening of the common duct into the duodenum, and from this part it appears to dart through to the back: the pulſe at the ſame time continues nearly as ſlow as is natural, and has none of the hardneſs attendant on inflammation. By an attention to the ſeat of the pain and this natural ſtate of pulſe, Dr. Heberden obſerves, that it is not difficult to foretel the outward yellowneſs in many caſes, ſome days before it appears. The breath, during the continuance of the pain, becomes ſhort and hurried; there is great general anxiety and reſtleſsneſs, ſometimes amounting to delirium, and at laſt great depreſſion and fainting; the ſtomach is affected by nauſea and reaching; and there are often irregular ſpaſmodic twitches in various parts of the body. There are often profuſe ſweats, which are, however, ſometimes abſent; and they do not depend at all upon the ſhiverings, for they are ſometimes preſent, when no ſhivering has occurred. Theſe ſymptoms do not continue long in all their violence; for although the patient, during the paſſage of a gall-ſtone, is never free from ſome pain, yet it increaſes, by paroxyſms, to a ſtate of acute ſuffering, and ſubſides again into one of comparative eaſe, during which there is a ſenſe of deep-ſeated ſoreneſs and fulneſs of the epigaſtric and right hypochondriac regions. The greateſt relief from pain is experienced by bending the body forward upon the knees, in which poſition the relaxation of the abdominal muſcles leaves the affected parts ſubjected to the leaſt preſſure. Another fit, perhaps of equal or greater violence than the firſt, then comes on, and alternates with another remiſſion; this may occur ſeveral times in an hour; but ſometimes the duration of the paroxyſm is much longer.

At ſome early period of theſe attacks, the jaundice makes its appearance; and it continues for a conſiderable time after the violent ſymptoms have diſappeared. When the concretion has paſſed, however, and the more urgent ſymptoms have ceaſed, the yellowneſs may ſoon be perceived to diminiſh in its intenſity; but before it can entirely diſappear, it requires that the whole quantity of the tinged ſerum be removed by a gradual operation of the excretory glands, and a freſh ſupply in a natural ſtate be introduced.

The duration of the attack, including the whole time of the paſſage of the concretion, is as various as its intenſity; ſometimes a few hours, ſometimes ſeveral days, or even weeks elapſe, before it is expelled. In the former caſe, the paſſage is often ſo rapid as not to allow time for the jaundice to take place. The number and ſize of the concretions alſo vary much; ſometimes the gall-bladder is filled with them; at other times there are not more than one or two: ſometimes they are ſmall and angular; at others large, and have a more regular ſurface. They have been ſometimes ſeen nearly of the ſize and figure of the gall-bladder itſelf, ſo as almoſt to fill the whole cavity. Theſe large concretions are leſs frequently the cauſe of jaundice than ſmaller ones; for, from their bulk, there is but little probability of their entering the *ductus cyſticus*, and afterwards of obſtructing the *ductus communis*: it is from calculi of ſmaller dimenſions that ſuch obſtructions generally ariſe. It appears, however, that calculi of conſiderable bulk muſt have paſſed; for the *ductus communis* has been found, on diſſection, enlarged to an inch in diameter; an inſtance of which was met with by Dr. Heberden. But concretions have paſſed during life of ſuch a bulk as to occaſion a doubt whether they eſcaped into the inteſtines by the natural canals, or made their way thither by a preternatural paſſage; as by the adheſion of the gall-bladder, in conſequence of inflammation, to the duodenum or colon, after which ulceration had occurred, and opened a communication. Dr. Cheſton, of Glouceſter, ſome years ago met with a caſe where a gall-ſtone of unuſual magnitude paſſed during life, and the patient recovered. Some years afterwards ſhe died of another complaint; and on examination, it appeared that this large gall-ſtone had made a preternatural paſſage through the gall-bladder into the inteſtine. Mr. Cline has an inſtance of the ſame kind in his collection of anatomical preparations, at St. Thomas's hoſpital.

It would be foreign to the purpoſe of this article to enter into a minute account of the varieties of appearance, and the chemical properties of the different biliary concretions. Upon theſe topics the reader will find ſome obſervations under the head of BILIARY *Calculi*; and he will find a moſt ample inveſtigation of the whole ſubject, in Dr. Powell's "Obſervations on the Bile and its Diſeaſes," from page 105 to 133.

The chief circumſtance which ſeems to give riſe to the formation of theſe concretions in the gall-bladder and bile ducts, is a life of indolence and inactivity; it matters not whether it may have been paſſed amid the luxuries of wealth, or the hardſhips of poverty; and if the diſorder be more common in the former ſituation, it is perhaps becauſe neceſſity compels the ſubjects of the latter to more perſonal exertion. Hence theſe concretions are comparatively more frequent in women than in men; thoſe men who are engaged in literary purſuits are very liable to them; and in either ſex they are moſt common after the active period of life is paſt. Haller noticed the frequency of their occurrence in criminals, whoſe death had been preceded by long confinement. (Opuſcula Patholog.) They are often found in the gall-bladders of oxen, which have been ſtalled during the winter months; and Dr. Powell believes that they occur in a larger than common proportion of maniacs who have been long confined. Dr. Saunders explains this influence of a ſedentary life on the bilious ſecretion, by obſerving that the excretory powers of the liver depend but little upon any action which the biliary ducts can perform, as they poſſeſs a very ſmall degree of irritability; but are aſſiſted principally by the agency of the diaphragm and abdominal muſcles, and the periſtaltic motion of the inteſtines; and more eſpecially from the agitation which the hepatic ſyſtem undergoes during bodily exerciſe. The want, therefore, of a degree of exerciſe, ſufficient to aſſiſt the biliary ducts in their excretory function, muſt neceſſarily lay an ample foundation for morbid affections of the bile. And the neceſſity of this external aid to the perfect action of the liver, ſeems more obvious from the circumſtances of its venous circulation, which is always more languid than in thoſe ſecretory organs, where the fluids are kept in a ſtate of more rapid motion by arterial impulſe.

It is commonly ſuppoſed that the biliary concretions are protruded from the ducts by the contractile power of the ducts alone. The truth of this opinion, however, Dr. Pemberton has queſtioned; and he maintains, that the gall-ſtone is propelled by the accumulating bile behind it, which at the ſame time puſhes it forward and diſtends the duct. For, in the firſt place, the duct, he affirms, is always found contracted before the gall-ſtone; whereas, if the concretion were protruded by the contractile power of the duct, it ought to be contracted *behind* it. In the ſecond place, opium and blood-letting are employed as relaxants and antiſpaſmodics, and ſucceſsfully: but this relaxation would rather retard than expedite the paſſage of the calculus, if its protruſion were the reſult of the contractile power. The conſideration is, therefore, of practical importance. See Pemberton on Diſ. of Abdominal Viſcera, p. 55, *et ſeq.*

It may be added, that exceſſive vomiting and violent exerciſe, which have given riſe to jaundice, operated probably

bly by forcing concretions from the gall-bladder into the ducts: and that there is an inſtance on record, in which jaundice aroſe from the ſeeds of gooſeberries, which were found in the extremity of the common duct, as it enters the duodenum. Saunders.

2. The canal of the ductus communis choledochus may be obſtructed or plugged up by the ſecretion of bile of a *morbid denſity* and tenacity, or by the *inſpiſſation of it* in the gall-bladder. Dr. Saunders, ſpeaking of the appearances that have been obſerved on diſſection, ſays, "the bile has been found of a very viſcid and pitchy conſiſtence, eſpecially in the gall-bladder; paſſing from the cyſtic to the common duct, and thereby perhaps reſiſting the paſſage of the more fluid hepatic bile, which would otherwiſe flow freely into the duodenum." The colour of this denſe and inſpiſſated bile is ſtill yellow, according to Dr. Powell, who ſtates, that it does not ſeem to block up the large ducts, nor their entrance into the duodenum, but rather accumulates in the liver itſelf, the deviation from a ſtate of fluidity rendering its paſſage through the ſmaller canals difficult. He conceives that this ſtate of the ſecretion is connected with the uſe of ſpirits. Loc. cit. p. 75 and 145.

II. *Compreſſion of the Biliary Ducts.*—The paſſage of the bile into the inteſtines may be alſo impeded by the various circumſtances under which the common duct, or the hepatic duct is placed in a ſtate of compreſſion; of theſe we may mention the following:

1. *Poſture.*—All perſons, who are engaged in ſedentary occupations, yield very generally to a curved poſture, which, independently of the more remote effects of ſuch modes of life, has ſeemed ſufficient to produce jaundice. It is a well known fact, at leaſt, that under ſuch circumſtances the diſeaſe is particularly frequent. Dr. Powell remarks, that in the neceſſary attention to anatomical diſſection, which is given by young men in their preparation for the profeſſion of phyſic, it is by no means uncommon to find attacks of jaundice, and that too at ſo early a period of their confinement, as can ſcarcely admit of the ſuppoſition that this was the chief exciting cauſe; and in ſome caſes of literary ſtudy the ſame fact is obſerved: now the only circumſtance in common in theſe two ſituations, is the flexure of the body forwards. In ſuch a poſture, the gall-ducts are obviouſly liable to ſuffer conſtant compreſſion between the liver and the inteſtines and other adjoining parts.

2. This compreſſion may be alſo occaſioned by the gravid uterus, in *pregnancy*, towards the latter periods of which jaundice occaſionally occurs. Dr. Powell, however, is inclined to refer the jaundice, produced under ſuch circumſtances, to the plethoric ſtate of the liver, in which the accumulation of blood in that viſcus itſelf is the cauſe of the compreſſion of the ducts; more eſpecially becauſe blood-letting, and other evacuations remove it.

3. *Tumours* of the liver and of the neighbouring viſcera are among the common cauſes of the moſt permanent and ſevere jaundice. A mere congeſtion of blood or turgeſcence of the veſſels throughout the liver, as juſt hinted, from whatever cauſe produced, may be eaſily ſuppoſed to preſs upon and block up the biliary ducts, and thus occaſion the abſorption of that bile, to the ſecretion of which it miniſters. Thus *hepatitis*, or inflammation of the liver, is ſometimes accompanied by jaundice; and would probably be more frequently ſo accompanied, were it not in general confined to a ſmall part of the viſcus, or to its inveſting membrane. Thus, after the intermittent fevers of this country, and the analogous remittents of warmer climates, a jaundice often comes on towards the concluſion; which has been conſidered as forming no very unfavourable prognoſtic; for there does not generally appear to be any other diſeaſe of the liver, in ſuch caſes, than an increaſe of its ſize, with great accumulation of blood through its ſubſtance. Dr. Powell mentions the caſe of a woman who died of conſumption, and whoſe lungs were found to be almoſt one maſs of ulcerated tubercle; within the laſt three days of her life, jaundice had come on to a very intenſe degree. But, on diſſection, the ducts were found free, and the gall-bladder empty, and no external tumour was diſcovered; but in the liver there ſeemed to be a great accumulation of blood; it was much increaſed in ſize, had a looſe texture, and was in every part deeply tinged with bile. Loc. cit. p. 72-3.

Scirrhous tumours of the contiguous parts, as of the head of the pancreas, of the pylorus, and even of the liver itſelf, ſcrofulous enlargements of the lymphatic glands in the capſule of Gliſſon, and ſteatomatous ſwellings of the omentum, are often ſo ſituated as to obſtruct mechanically the paſſage of the bile into the inteſtines; tubercles of the liver have ſometimes alſo operated as extraneous cauſes, and, from their local ſituation, ſtopped the natural courſe of the bile. But the liver is often much enlarged by collections of large tubercles, which yet leave, in their interſtices, a perfect freedom for the action of the veſſels and the paſſage of the biliary ducts; and ſcirrhus of the liver is not uſually a general diſeaſe, but is confined to particular ſpots, which are often out of the way of the biliary paſſages; ſo that it has often been found, on diſſection, to have made conſiderable progreſs without inducing jaundice.

4. Diſtenſion of the large inteſtines by air, which conſtitutes the diſeaſe called *tympanites*, is often accompanied by jaundice. Such a diſtenſion, ariſing to a certain point, muſt impede the influx of the bile into the duodenum, both by its preſſure upon this bowel itſelf, and upon the biliary ducts; and the jaundice ſeems to take place, under ſuch circumſtances, only when the diſtenſion is very conſiderable, and is therefore to be deemed a very unfavourable ſymptom. In a caſe, mentioned by Dr. Powell, the accumulation of air was ſo great, that, very ſpeedily after the appearance of jaundice, the *cæcum* was burſt by it, and the patient of courſe deſtroyed.

III. *The calibre of the biliary ducts being diminiſhed*, independently of internal ſtoppage or external preſſure, jaundice will equally enſue. Two cauſes of this kind are mentioned by medical writers; but it is probable that neither of them are of very common occurrence.

1. *Spaſm* of the common duct, or a ſpaſmodic conſtriction of the duodenum itſelf, and conſequently a cloſing of the aperture of the duct, are particularly mentioned by Dr. Cullen among the cauſes of jaundice, and Dr. Powell deems the fact well eſtabliſhed, although it has often been denied. In ſome way or other, however, jaundice frequently concurs with diſeaſes that are called ſpaſmodic. Thus it is ſaid by Sydenham to come on occaſionally during hyſterics; and it has been obſerved to follow violent fits of anger, and other emotions of the mind. Dr. Heberden denies the accuracy of Sydenham's obſervation, in reſpect to hyſteria, both from his own obſervation, and the authority of many other practitioners. With reſpect to the influence of the paſſions, Dr. Saunders remarks that anger not only augments the quantity of bile ſecreted very conſiderably, but likewiſe vitiates it: hence it is, that, being carried into the duodenum in large quantities, and regurgitated into the ſtomach, it produces the ſame effects as an emetic: and hence

probably the term *choleric*, as applied to paſſionate people. If the *ductus communis* do not tranſmit it as faſt as it is ſecreted, and the gall-bladder is ſo full that it cannot receive the exceſs; then it will be forcibly returned upon the hepatic ſyſtem, and, by entering the blood-veſſels, produce jaundice. (Saunders, p. 235.) Some have ſuppoſed that, during the general commotion of the paſſions, a gall-ſtone may have been puſhed from the bladder into the duct, and thus produced jaundice; but the whole attack has often been too tranſitory, and too free from the general ſymptoms of the paſſage of a gall-ſtone, to allow of ſuch a ſuppoſition. (Powell, p. 70.) The ſymptoms of ſpaſm, affecting the parts in queſtion, are, however, generally conſidered as being ſimilar to thoſe of the paſſage of a concretion. (Pemberton, loc. cit. p. 49.) So that, on the whole, the explanation which Dr. Saunders has given, of the influence of the paſſions in producing a temporary jaundice, appears to be the moſt probable.

2. *A thickening of the coats* of the biliary ducts, by which their calibre muſt be diminiſhed, is mentioned among the leſs common cauſes of jaundice. (See Morgagni De Cauſis, et Sedibus Morborum, Epiſt. xxxvii. art. 10. who mentions an inſtance of the total obliteration of the common duct.) Dr. Saunders remarks that this contraction of the canal of the duct, is produced by the extenſion of diſeaſed ſtructure, originally produced in the ſtomach by the abuſe of ſpirituous liquors, to the biliary ducts. "In the diſſection of thoſe who have been intemperate dram-drinkers, the diſeaſed ſtructure may be traced," he ſays, "from the ſtomach along the courſe of the ductus communis, and I have frequently ſeen theſe ducts ſo contracted and thickened, that they could not tranſmit bile." A ſimilar effect, from inflammation of the liver extending to the gall-bladder and ducts, which often lays the foundation of an incurable jaundice, has been obſerved by Dr. Pemberton: the inflammation of the duct may be removed, he obſerves, but the thickening remains, a permanent evil. Dr. Darwin, however, imagines, that a temporary jaundice may be occaſioned by an inflammatory thickening of the membrane lining the ducts, analogous in its kind to that of the membrane of the noſe in catarrh, and which, like it, ſoon ceaſes, and the jaundice will go off. (Zoonomia, vol. ii. p. 138.) The truth or falſity of this opinion it is not in our power to aſcertain.

In addition to the ſeries of cauſes already detailed, ariſing from obſtruction to the paſſage of the bile into the duodenum, it has farther been a queſtion, whether any obſtruction to its diſcharge from the bowels, after it has cleared its appropriate ducts, may not likewiſe occaſion its abſorption into the ſyſtem, and therefore produce jaundice. It would appear, from an experiment of M. Portal, that this may happen. He paſſed a ligature round the inteſtine of dogs, a little below the opening of the ductus communis choledochus, and obſerved that, in five or ſix hours afterwards, their eyes acquired a yellow tinge; and upon examining the lacteals, he found them filled with bile. (Mem. de l'Acad. des Sciences, ann. 1777.) In ſome of the caſes of obſtinate coſtiveneſs accompanied by jaundice, that are on record, it is probable, therefore, that the jaundice was a ſymptom, rather than a cauſe, of the coſtiveneſs.

This ſeems to be the caſe, in the ſlight jaundice of infants, which ſpeedily vaniſhes when the bowels are unloaded.

Dr. Powell mentions a paralyſis of the gall-bladder as one of the cauſes of jaundice. In this caſe, as in the urinary bladder, the powers of contraction are loſt from over-diſtenſion, and the accumulation of bile is ſaid to have become ſo great, as to produce a tumour externally, with an evident fluctuation, which has induced the ſurgeon to puncture it, under an idea that the collection was *pus*. It is not eaſy to conceive how jaundice ſhould be induced, under theſe circumſtances, except by abſorption from the inner ſurface of the gall-bladder itſelf.

The prognoſis, in jaundice, muſt be obviouſly very different in different inſtances, according to the nature of the obſtruction upon which it depends. In jaundice ariſing from gall-ſtone, or ſpaſm, the prognoſtic is favourable; for, in the latter caſe, the ſpaſm will aſſuredly ceaſe; and, in the former, if the ſtone is ſmall enough to enter the duct, it is moſt likely that it will paſs its whole length, inaſmuch as the canal at the entrance is of leſs diameter, than when it unites with the hepatic duct to form the ductus communis choledochus. If, therefore, jaundice has ariſen ſuddenly in young and vigorous habits (even though accompanied with much pain), and is unattended with fever, and other unfavourable circumſtances to be mentioned, it is ſeldom of long duration, and may be effectually removed. The itching of the ſkin, which ſometimes ſubſides after a few days, Dr. Pemberton obſerves, often returns a day, or even two days, before other evident proofs of the removal of the obſtruction; ſo that he conſiders ſuch a recurrence of the itching as a favourable ſymptom. A bilious diarrhœa coming on, implies the removal of the obſtruction, and muſt therefore be regarded as concluſive with reſpect to the recovery of the patient. A ſmall variation of the yellowneſs cannot be relied upon as a ſymptom of convaleſcence; ſince the colour of the eye and ſkin often undergoes ſlight changes, even during the time when the obſtruction remains the ſame. Pemberton, loc. cit. p. 61.

Among the unfavourable ſymptoms may be reckoned a continuation of the intenſeneſs of the yellow colour in the eye, the pain of the ſtomach remaining equally acute, and confined to the ſame ſpot, and an increaſe of nauſea, while the ſtools and urine continue to retain the unnatural colours before-mentioned. The appearances are very unfavourable, if, with the violent pain, there is alſo a quick pulſe, loſs of fleſh and ſtrength, with occaſional watchfulneſs and melancholy; under theſe circumſtances, the patient becomes ſubject either to profuſe ſweating or hæmorrhagy. Theſe ſymptoms generally mark the preſence of ſome fixed diſeaſe in the viſcera, and the diſeaſe frequently terminates in a confirmed dropſy of the belly.

It muſt not be omitted, that jaundice is a diſeaſe into which the patient is very liable to relapſe, after every appearance of recovery.

Diagnoſis.—It is extremely important, with a view to the proper treatment of jaundice, to diſtinguiſh from which of the cauſes of obſtruction before-mentioned the biliary ducts are impeded. Our concluſions as to the event of the diſeaſe muſt alſo depend entirely upon our knowledge of the nature of the obſtruction. We have in ſome meaſure anticipated the diagnoſtic ſymptoms, in treating of the cauſes; but it cannot be too carefully obſerved, that where gall-ſtone, or ſpaſm of the ducts, is the cauſe of the jaundice, there is moſt acute pain in the pit of the ſtomach, attacking ſuddenly, commonly remitting and recurring in paroxyſms, and often accompanied by vomiting; but at the ſame time the pulſe continues in its natural ſtate, both in reſpect to ſlowneſs and ſoftneſs, which implies the abſence of inflammation. When ſhiverings occur, it may be obſerved that they come on *after* the pain has continued ſome time, and do not precede the pain, as is the caſe with thoſe ſhiverings which attend inflammation.

Jaundice ariſing from compreſſion of the biliary ducts, by tumours of the neighbouring organs, may be diſtinguiſhed by the pain not having come on ſuddenly; by its being leſs acute and varying little in degree; by the circumſtances of the general health, when the jaundice has been preceded by other diſeaſes of long continuance, by waſting of the fleſh and ſtrength, and is accompanied by ſoreneſs or obvious hardneſs in the hepatic or epigaſtric region, and by an increaſed velocity of the pulſe, and when it occurs in the middle or advanced period of life. Even when the jaundice has ſubſiſted long without any intermiſſion, (Dr. Cullen remarks,) and without any pain in the epigaſtrium, an external compreſſion is to be ſuſpected. When to theſe circumſtances a diſpoſition to dropſy is added, there can remain no doubt as to the exiſtence of morbid enlargement of ſome of the viſcera, and of the incurable nature of the diſeaſe.

The *chloroſis*, to which young women are extremely ſubject, puts on, to a ſuperficial obſerver, the appearance of jaundice; and, indeed, the whole body aſſumes, in ſome caſes of this diſorder, ſo much of a yellow colour, as might lead a leſs careleſs obſerver to ſuſpect the preſence of bile. But in all ſuch caſes, the original whiteneſs of the eye remains, or is even increaſed to a pearly whiteneſs, and the urine remains of its natural colour, aſſuring us that the circulating fluids hold no bile in ſolution.

Cure of Jaundice.—As the cure of jaundice conſiſts eſſentially in removing the obſtruction to the free egreſs of bile from the liver, the treatment muſt vary according to the nature of the obſtructing cauſe; and while meaſures are adopted, with a view to remove theſe cauſes, other collateral indications, ſuch as the alleviation of pain, the diminution of inflammation, if any be preſent, and the ſupport of the patient's ſtrength, will require to be fulfilled.

When the ſymptoms lead us to infer, that the jaundice ariſes from the impaction of a gall-ſtone in the duct, the object of remedies will be to facilitate its paſſage into the inteſtinal canal. We know of no certain and immediate means of expediting the paſſage of biliary concretions, which is generally a work of time, depending upon the gradual dilatation of the biliary duct. It proceeds, however, faſter or ſlower upon different occaſions; and therefore the jaundice, after a various duration, often ceaſes ſuddenly and ſpontaneouſly. This circumſtance has given riſe to a belief in the efficacy of a number of remedies, many of which are perfectly inert, and others cannot be ſuppoſed to exert any effect upon the paſſage of a gall-ſtone. Some of theſe, indeed, ſeem to have been recommended for the cure of jaundice, in conſequence of their *yellow* colour; ſuch as ſaffron, the yolk of raw egg, &c.; in the ſame way as the root of madder, which is *red*, has been popularly uſed as an emmenagogue. Of ſuch remedies it is unneceſſary to give any farther account.

But although no immediate evacuation of the obſtructing cauſe be within the power of medicine, yet that proceſs may be facilitated by thoſe means, which are known to abate increaſed action of muſcular fibres, and to diminiſh irritability; *i. e.* by anti-ſpaſmodic and narcotic medicines. Opium is one of the moſt effectual medicines of this claſs; and the benefit, reſulting from its adminiſtration, ſeems to confirm the theory upon which it has been recommended. It fulfils the two-fold indication of relaxing the ſpaſm of the ducts, and alleviating the urgent pain. It is not enough, however, to adminiſter ſmall or even ordinary doſes of this medicine, which, in proportion to the ſeverity of the pain, will produce the leſs effect. The quantity of opium, as Dr. Pemberton enjoins, ought to have no limit but the abſolute alleviation of the pain; and till that object is attained, the patient ſhould take a grain of ſolid opium, or twenty-five drops of the tincture of it every hour. (Pemberton, loc. cit. p. 52.) Or, as is recommended by Dr. Powell, which we believe to be more efficient, he ſhould take a large doſe, ſay two or three grains, in the firſt inſtance, and follow this up by ſmaller doſes, at ſhort intervals, which will prolong the powers of the medicine, and ſometimes the concretion will paſs, while the patient is under its influence. (Powell, p. 155.) A doſe of fifty drops or a drachm of tincture of opium, in a glyſter, will frequently produce immediate relief.

The ſpaſmodic conſtriction of the duct, and the exceſſive pain attendant upon it, may be alſo alleviated, and the paſſage of the concretion facilitated, by the uſe of warm fomentations, applied to the region of the ſtomach and liver, and ſtill more effectually perhaps by immerſion in a warm bath; the temperature of the bath ſhould, however, be properly regulated, as well as the continuance of the immerſion. As the object, in this caſe, is to obtain the ſoothing and relaxing effects, and not the corroborant operation, of the warm bath, its temperature ſhould be from 100° to 110° of Fahrenheit's thermometer, either on the firſt immerſion, or by the application of ſubſequent heat; and the immerſion ſhould be continued till an incipient faintneſs is produced, which, whether it take place after a longer or a ſhorter time, is the beſt criterion to regulate its duration; for where this has not enſued, the bath has not appeared to produce any beneficial effect. Powell.

Several phyſicians, and Dr. Cullen among the reſt, have conſidered the action of vomiting as the moſt probable means of aſſiſting the paſſage of a gall-ſtone through the biliary duct. This action, Dr. Cullen ſays, "by compreſſing the whole abdominal viſcera, and particularly the full and diſtended gall-bladder and biliary veſſels, may contribute, ſometimes gently enough, to the dilatation of the biliary duct." (Firſt Lines, § 1825.) Hence *emetics* have been frequently recommended for the cure of jaundice ariſing from gall-ſtones. Dr. Heberden, apparently by a dereliction of his uſual rational caution, while he admits that vomiting is often an urgent ſymptom of jaundice, from biliary concretion obſtructing the duct, and that the action may even be ſuppoſed to contribute to lacerate the duct, if the concretion be ſtrongly impacted in it; yet he maintains that experience had taught him that vomiting, excited while the pain was intenſe, rather quieted than aggravated the pain, and never brought it on. (Medical Tranſact. of the Coll. p. 160.) He conſiders it, therefore, as a judicious practice, whether the patient have a vomiting or not, to order an emetic, either at firſt, or as ſoon as the intenſeneſs of the pain has been alleviated, and occaſionally to repeat it, watching at the ſame time its operation, and checking it by an opiate, if the ſtraining continue too long, or be too violent. It is true, that no decided injury is ſtated to have been produced by ſuch an exhibition of emetics; yet the theory of their operation, by mere mechanical concuſſion, ſeems very problematical, and experience, on the whole, does not atteſt any very clear proofs of their efficacy. Dr. Cullen admits that gentle emetics alone ſhould be given; and ſuggeſts that, where, by the long continuance of the jaundice, it may be ſuſpected that the ſize of the concretion then paſſing is large; or more eſpecially when pain attending the diſeaſe gives apprehenſion of inflammation, it may be prudent to avoid vomiting altogether. On the whole, the practice muſt be deemed precarious where the diſeaſe is ſevere, and uncalled for where it is mild. When the obſtruction is occaſioned by inſpiſſated bile or mucus about the mouth of the duct, vomiting might remove this, and thus cure the diſeaſe; but a purgative, which is leſs precarious in its operation, is perhaps equally efficacious.

The uſe of *purgatives*, indeed, has been recommended by ſome writers, with a view to aid the expulſion of gall-ſtones from the biliary duct; but the moſt experienced agree that little benefit can be expected to accrue from the uſe of cathartics (except when the bowels are very coſtive), until the concretion ſhall have eſcaped into the inteſtine. There cannot be a doubt, however, that ſlight caſes of jaundice, depending perhaps upon the clogging of the aperture of the duct with inſpiſſated bile, or a very ſmall calculus, are ſpeedily removed in many caſes by cathartics. From the notion that conſtipation aroſe from a deficiency of bile in the inteſtines, the *bitter* purgatives were particularly recommended in jaundice; ſuch as aloes, infuſion of chamomile with tincture of aloes, or colomba with rhubarb and ſoap, &c. As ſoon as the pain is relieved by the remedies already enumerated, and more eſpecially when the relief is complete and ſudden, implying the eſcape of the concretion into the duodenum, it would ſeem to be advantageous to preſerve an open ſtate of the bowels for ſome days, not only for the purpoſe of carrying the concretion out of the body, but to aſſiſt in expediting the diſcharge of the bile tinging the ſerum of the blood, and the healthful renewal of the latter. The choice of the purgative for this purpoſe would ſeem to be not very material; caſtor oil, moderate doſes of calomel ſucceeded by neutral ſalts or rhubarb, &c. repeated every third day, may anſwer the propoſed end.

When there is complete evidence, from the colour of the ſtools, &c. that the obſtruction is removed from the gall-duct, little farther aid from medicine, than the means juſt ſtated, would ſeem to be requiſite. Perhaps, however, the reſtoration of the functions of the ſtomach and adjoining organs may be accelerated by the adminiſtration of ſome aromatic bitter, ſuch as an infuſion of caſcarilla or gentian; or of the abſorbent or antacid medicines, when heart-burn or pain of ſtomach remains.

Such is the treatment to be adopted, whether the jaundice ariſe from ſpaſm merely, or from gall-ſtone, or inſpiſſated bile, ſtopping the duct. Except in the caſe of gall-ſtone, the diſeaſe will ſoon diſappear. But in the latter inſtance, it often happens that the concretion, either from its magnitude or from its angular form, produces inflammation of the duct. It then becomes a more ſerious complaint, and requires the uſe of blood-letting, bliſters, and purgatives, as in other viſceral inflammations. The ſupervention of inflammation is principally marked by the increaſe in the velocity and hardneſs of the pulſe. The tendency to inflammation, indeed, in ſtrong and plethoric habits, from ſuch an irritation in a membranous part as the paſſage of a biliary concretion excites, is ſo great, that experienced phyſicians recommend the employment of blood-letting, by way of precaution, in perſons of moderate vigour, even before the pulſe is quickened, or febrile ſymptoms have ſupervened; and deem it abſolutely requiſite, when the pain is ſevere and the ſlighteſt degree of feveriſhneſs is preſent. (Cullen, loc. cit. § 1824.) One full bleeding, produced from a large orifice in a vein, to the extent of 18 or 20 ounces, in a ſtrong perſon, will be more efficacious than twice the quantity taken at repeated times.

It muſt here be obſerved, that various attempts have been made to diſcover medicines which might act upon the biliary concretions as ſolvents, while they remain in the gall-bladder or biliary ducts. Several ſubſtances have been found to diſſolve the moſt common ones when directly applied out of the body, eſpecially ether, oil of turpentine, ſpirit of wine, and the alkalies; and the combination of the two former, as well as ſolutions of eſſential oils in alcohol, have been adminiſtered internally both in France and this country, and their efficacy ſtrongly atteſted. (See two papers on this ſubject, by M.M. Durande and Maret, in Les Nouveaux Memoires de l'Acad. de Dijon. tom. i. and iii. &c. White's Eſſay on Diſeaſes of the Bile.) But it is to be recollected, that it is altogether impracticable to make a direct application of theſe ſubſtances to calculi in the biliary paſſage; and we have no facts to prove that they can be carried into the gall-bladder, through the medium of the circulating-blood, ſo little changed as to preſerve any ſenſible degree of ſolvent power. Dr. Saunders, however, affirms that the alkalies have been found by experience, when taken for ſome continuance, to be ſucceſsful againſt biliary concretions; and it has been generally ſtated, that ſtalled oxen get rid of their biliary calculi when turned out to graſs in the ſpring, which, if it be true, implies the poſſibility of ſome change being effected upon calculi already formed. This ſtatement induced ſome practitioners, who aſcribed the effect to the new food which the cattle obtained, to give *graſs*, or the juice of it, to their human patients affected with jaundice. Van Swieten affirms that he cured a poor labourer by preſcribing a decoction of graſs, ſweetened with honey, for his common drink. (Comment ad Aph. 950.) But theſe practitioners did not recollect that a free muſcular exerciſe in the open air was an important point in the alteration of the circumſtances of the cattle juſt mentioned; and whether we look to the ſedentary habits of thoſe who are more particularly diſpoſed to jaundice, or to the beneficial effects of exerciſe, eſpecially on horſeback, which experience has aſcertained, in preventing the ſtagnation and viſcidity of the bile (ſee Saunders, p. 255. Powell, p. 161.), we ſhall not be diſpoſed to ſend our jaundiced brethren *to graze* for the recovery of their health.

Acids were long ago conſidered as beneficial in many caſes of jaundice (Baglivi, Prax. Med. lib. i. cap. 9.); and the diluted *nitric acid* has recently been recommended in ſome diſeaſes of the liver. Dr. Powell was hence induced to adminiſter this acid to a patient who was ſubject to frequent attacks of jaundice from biliary concretions; and during the uſe of the acid for eight months he continued free from the diſeaſe. The writer of this article was induced to adminiſter the nitric acid from the ſame conſiderations, and has witneſſed the moſt decided efficacy of the remedy in ſeveral inſtances in which the diſeaſe ſpeedily yielded to its influence again and again, after returning on deſiſting from its uſe. In one caſe, a young lady has experienced from it an invariable cure, and from the diſpoſition to a recurrence of the jaundice has found it expedient to employ it almoſt conſtantly. It may be taken in the proportion of a drachm of the diluted nitric acid to a pint of diſtilled water, or of any vegetable infuſion, daily.

In that ſtate of the liver which produces jaundice towards the end of intermittent fevers, mercury is the beſt and only remedy; and calomel, in ſmall doſes, is the form under which, in this, and ſome other hepatic diſeaſes, it ſeems to act moſt powerfully. Where ſcirrhus of the ſubſtance of the liver, or of the neighbouring organs, operates mechanically by its preſſure upon the ducts, and occaſions jaundice, it is more likely to prove the ſource of permanent miſchief than any other cauſe, and our means of relieving it are leſs effectual. In the true tubercle of the liver, which begins with induration, and afterwards paſſes on to ulceration, the efficacy of any medicine is very doubtful; even mercurials, when given in large quantities, and under any form, have not ſeemed to produce any decided advantage. They are abſolutely injurious, according to the obſervation of Dr. Saunders, when ſymptomatic fever takes place. The chalybeate waters are recommended by the laſt mentioned phyſician, as giving that tone and energy to the ſyſtem ſo very defective in caſes of jaundice.

When jaundice ariſes from a general congeſtion of the veſſels of the liver, general blood-letting, or, if the circumſtances of the conſtitution and ſtrength of the patient forbid that, local bleeding by leeches, or cupping-glaſſes after ſcarification, or the application of bliſters to the hypochondrium, will be uſeful, together with the exhibition of purgatives; and if it be admitted, that torpor of the inteſtinal canal, and a retention of bile or an accumulation of mucus in the duodenum can ſufficiently obſtruct the departure of the bile, and thus occaſion jaundice, as it ſeems to do in young children, the employment of any active purgative will be adequate to its removal. Calomel and jalap are particularly well ſuited to this indication.

JAUNDICE, *Black*, was diſtinguiſhed from the jaundice, properly ſo called, or *yellow* jaundice, by the ancients, when the ſkin of the patient became of a dark green hue. They conceived it to be occaſioned by a mixture of melancholy, or black bile, with the blood, and to originate from diſeaſe in the ſpleen, which they conceived to be the organ in which the black bile was generated, or from corruption and putrefaction of the yellow bile. It appears to have been nothing more than an intenſe degree of the ordinary jaundice, when the ſkin becomes of a dark or bronze hue, to which this appellation was applied.

Horſes are ſubject to jaundice as well as men. The farriers commonly call it the *yellows*, and divide it, as we do the jaundice, into two kinds, the yellow and the black. The yellow kind is known by the creature's white of his eyes turning to a yellowiſh colour, and his tongue and lips alſo partaking of the ſame tinge, but in a ſmaller degree. In the black kind all theſe parts are tinged with a duſkiſh or blackiſh colour. The common cure among the farriers is by means of an ounce of mithridate diſſolved in two quarts of ſtrong beer, and given to the horſe warm; and repeating this doſe once in twelve hours, as long as the diſtemper continues.

JAUNDICE-*Bird*, *icterus*, in *Ornithology*, a name by which ſeveral of the old authors have called the galbula, a bird of the turdus kind, very beautifully coloured all over with a gold yellow, but with black wings. See ORIOLUS *Galbula*.

JAW, in *Anatomy*, the bone in which the teeth are lodged: there are two, an upper and a lower one. Theſe are deſcribed in CRANIUM. The joint and muſcles of the lower jaw are conſidered under DEGLUTITION.

JAW, *Diſlocations of.* See LUXATION.

JAW, *Fractures of.* See FRACTURE.

JAW, *Locked.* See TRISMUS and TETANUS.

JAWATA, in *Geography*, a town of Japan, in the iſland of Niphon; 90 miles W.N.W. of Meaco.

JAWBERRYA, a town of Bengal; 21 miles N.W. of Calcutta.

JAWOR, a town of Lithuania, in the palatinate of Novogrodek; 48 miles S.S.W. of Novogrodek.

JAWOROW, a town of Poland, in New Galicia, celebrated for its warm baths; 25 miles W. of Lemberg.

JAXARTES. See SIHON.

JAY, GUY-MICHAEL LE, in *Biography*, a learned advocate of the parliament of Paris, who flouriſhed in the 17th century, was at an early age profoundly ſkilled in the Oriental languages, and formed, at that period, the noble deſign of publiſhing a polyglott at his own expence. He carried the plan into execution, but it was with the expenditure of all his property. He might have reimburſed himſelf, and have alſo received an ample compenſation for his long and almoſt unremitting labours, if he would have accepted the patronage of cardinal Richlieu, who was ambitious of a ſimilar reputation to that obtained by Ximenes, for patronizing the Spaniſh Polyglott, but M. le Jay choſe to reſerve to himſelf all the glory of the undertaking. On account of his poverty he embraced the eccleſiaſtical life, and obtained a ſmall deanery, but his income was very inadequate to his wants, till cardinal Mazarin made him a magnificent preſent of nineteen thouſand livres. The king likewiſe granted him letters of nobility, and a brevet of counſellor of ſtate as rewards of his learning, zeal, and diſintereſtedneſs. He died in the year 1675. His Polyglott is in ten volumes, folio: it contains the Syriac and Arabic verſions, with their Latin tranſlations, and the Hebrew Samaritan text of the Pentateuch, with the Samaritan tranſlation of the ſame in Samaritan characters. The high price at which this Polyglott was offered for ſale in England, induced Walton to publiſh a ſimilar work, which is more complete and commodious, though not ſo handſome, as M. le Jay's. Moreri.

JAY, in *Geography*, a townſhip of America, in Kennebeck county, and ſtate of Maine, thus named in honour of John Jay, governor of the ſtate of New York. It lies on both ſides of Great Amereſkoggen river, and includes the great bend which, from an eaſterly and weſterly courſe, ſuddenly turns ſoutherly in this townſhip, and paſſes into Livermore, containing 430 inhabitants. The Indian name of this place was "Roehomekoe."

JAY, in *Ornithology*, is the Engliſh name of the CORVUS *glandarius*; which ſee.

JAYA, in *Hindoo Mythological Romance*. Jaya and Vijaya were two of the daughters of Dakſha, ſon of Brahma. When Rama went forth to the wars of Lanka, the gods and demigods endowed and armed him with their potencies and weapons. Theſe two ſiſters "of ſlender waiſt," as they are deſcribed in the Ramayan, brought forth a hundred weapons "miſſive and manual," wherewith to arm Rama and his compeers in their arduous conflicts with Ravana, the tyrant of Lanka.

JAYADEVA, in *Biography*, a celebrated Hindoo poet, whoſe lyrics, entitled "Gita Govinda," introduced to the literature of Europe by the elegant pen of the lamented ſir William Jones, ſeem to give him a claim to an elevated rank in that ſpecies of compoſition. The "Gita Govinda" is a paſtoral drama, exhibiting the loves of Kriſhna (under the name of Govind) and his miſtreſs Radha; and although apparently a mere voluptuous rhapſody of paſſion, and that not always devoid of groſſneſs, embelliſhed by exquiſite touches of poetry, it is contemplated in a very different light by the enthuſiaſts of the Gokalaſtha ſect, or the excluſive adorers of Kriſhna. Theſe perſons can diſcover in the "Songs of Jayadeva," as the poem is called, a ſyſtem of emblematical theology: the loves, apparently carnal, of Kriſhna and Radha, mean, they ſay, the reciprocal attraction between the divine goodneſs and the human ſoul; and in this manner the voluptuouſneſs of the poem is explained and loſt. Others of a more ſober caſt paſſionately admire the practical beauties of the Gita Govinda, without admitting it to be a compoſition excluſively ſpiritual. It is certain that a figurative mode of expreſſing the fervour of devotion obtained extenſive prevalence in very early times. Among the Jews, Mahometans, and Hindoos, ſtriking examples can at once be pointed to; not to mention in this place the doctrines promulgated in the ſame glowing ſtile by the illuſtrious Grecian travellers, Pythagoras and Plato, who, it may be ſafely aſſerted, derived many of their tenets, as well as peculiarity of expreſſion, from the myſtics of India and Perſia. See *Myſtical* Poetry.

Jayadeva is believed to have lived anterior to the Chriſtian era, and to have been born at the town of Cenduli, in Kalinga; but as there is a town of a ſimilar name in Berdwan, the natives of it claim the glory of citizenſhip with the fineſt lyric poet of India, and celebrate in his honour an annual jubilee, paſſing a whole night in repreſenting his drama, and ſinging his beautiful ſongs.

JAYADEVI, the conſort of Viſhnu, in an equivocal incarnation under the form of Jina or Jaina, as appears in ſome Hindoo writings. She is repreſented preaching to the females of Kari or Benares, the Jaina doctrine, that "all true religion conſiſted in killing no creature that had life;" a hereſy, according to Brahmanical authors, which gained ſo much ground, as to render an incarnation of Sina the avenger expedient to reſiſt it. This incarnation, they ſay, accordingly took place, in the perſon of a learned bigot named *Sankara*, which ſee.

JAYES, in *Geography*, a town of Hindooſtan, in Oude; 30 miles N. of Manickpour.

JAYGONG, a town of Bootan; 25 miles N. of Beyhar.

JAYNA, a canton, pariſh, and river on the S. ſide of the iſland of St. Domingo; between this river and the Nigua is encloſed an extenſive and fertile plain, which was formerly an abundant ſource of riches to the coloniſts. The quantity of pure gold that was dug from its cavities, its ſugar, cocoa, indigo, and other plantations, paid duties to a greater amount than thoſe now paid by all the Spaniſh part of the iſland. The inhabitants are wholly employed in the breeding of cattle or the waſhing of gold ſand. Indigo grows wild here. Towards the ſource of this river, which at 250 miles from its mouth is not fordable, but croſſed in canoes and ſkins, were the celebrated gold mines of St. Chriſtopher's, near which Columbus erected the fort of that name. On this river there are alſo rich ſilver mines. The eſtabliſhments in the plain of St. Roſe, and thoſe on the Jayna, are reckoned to contain 2000 perſons.

JAYNAGUR, a town of Bengal, ſix miles N.E. of Mahmudpour. N. lat. 23° 28′. E. long. 89° 46′.—Alſo, a town of Bengal; 42 miles N. of Ramgur. N. lat. 24° 21′. E. long. 85° 53′.—Alſo, a town of Hindooſtan, in Bahar; 15 miles N.N.E. of Durbungah. N. lat. 26° 33′. E. long. 86° 20′.

JAYPOUR, a town of Hindooſtan, in the county of Oriſſa; 192 miles W.S.W. of Cattack. N. lat. 19° 5′. E. long. 82° 48′.

JAYSPIZ, a town of Moravia, in the circar of Znaym; 10 miles N. of Znaym. N. lat. 48° 57′. E. long. 15° 53′.

JAZAR, or Jazer, in *Scripture Geography*, a city beyond Jordan, given to Gad, and afterwards to the Levites. (Joſh. xxi. 36. xiii. 25.) It lay at the foot of the mountains of Gilead, near the brook Jazar, which diſcharges itſelf into the Jordan.

JAZIRA, *Deſert of*, a tract of Aſiatic Turkey, extending along the Euphrates from Balis to Anbar. See Gezira.

JAZYGES, in *Ancient Geography*, a people of Scythia, or Sarmatia. Of theſe there were the *Jazyges Mæotæ*, who occupied the northern coaſt of the Palus Mæotis, and were deſtroyed in the 13th century by the kings of Poland; and alſo the *Jazyges Metanaſtæ*, who inhabited the angular territory formed by the Tibiſcus with the Danube. They lived in the vicinity of Dacia, and are called by Pliny "Sarmates." The *Jazyges Baſili*, or royal, were people of Sarmatia, joined by Strabo to the Jazyges on the coaſt of the Euxine ſea. Theſe advanced in proceſs of time to the banks of the Danube, and penetrated to the other ſide of the Sarmatian mountains. They have been ſometimes confounded with the Getæ and Dacians, on account of the reſemblance that ſubſiſted between them in their manners and mode of government. Ptolemy ſpeaks only of the Jazyges Metanaſtæ, who were probably more conſiderable than any of the other Jazyges; and whoſe country was bounded on the N. by European Sarmatia, S. E. by the Sarmatian mountains, as far as mount Carpathus, and W. and S. by that part of Germany which extends from the Sarmatian mountains to the Danube, near Carpis, and thence by a part of this river to the Tibiſcus; and E. by Dacia, from which it is ſeparated by the Tibiſcus. Towards the decline of the empire, this country was occupied by the Vandals, and afterwards became a part of the empire of the Goths. About the year 350 they were expelled by the Huns. It has ſince formed part of Hungary and of Gallicia, and probably alſo of Bannat-Temeſwar.

IBAGUE, in *Geography*, a town of New Granada, in the province of San Juan de los Llanos; containing about 400 inhabitants, one half of them being Indians.

IBALI, a town of European Turkey, in Macedonia, ſituated near Drino Nero; 60 miles W.N.W. of Akrida.

IBAR, or Hibar, a river of European Turkey, which runs into the Morava; 20 miles N. Precop.—Alſo, a town of Servia; 20 miles N. of Novi-Bazar.

IBARRA, Joachim, in *Biography*, born at Saragoſſa in 1725, became printer to the king of Spain, and died in 1785. He carried the typographic art to a degree of perfection which had been unknown in that country. He produced very fine editions of the bible, the Mozarabic Miſſal, Mariana's Hiſtory of Spain, Don Quixotte, and Gabriel's Spaniſh Tranſlation of Salluſt.

Ibarra, in *Geography*, a town of South America, in the province of Quito; 45 miles N.N.E. of Quito. N. lat. 0° 25′. W. long. 77° 40′.

IBAROTI, a town of South America, in Paraguay; 130 miles E. of Aſſumption.

IBAS, in *Biography*, biſhop of Edeſſa, who flouriſhed in the fifth century. He was a Syrian by nation, and appears to have been elected to the ſee of Edeſſa about the year 436. While he was a preſbyter of that church, he wrote a letter concerning the council of Epheſus, and the condemnation of Neſtorius, in which he was thought to favour the Neſtorian doctrine. He was ſeveral times tried upon this charge, and obtained verdicts of acquittal. He was frequently haraſſed, and ſent from one place of confinement to another, till, in the year 451, the council of Chalcedon pronounced his ſentiments orthodox, and decreed that he ſhould be reſtored to the dignity of which he had been deprived. Moreri.

IBBERVILLE, in *Geography*, a river, or a kind of natural canal of Weſt Florida, which joins the Miſſiſippi when it overflows, and forms a communication for veſſels drawing three or four feet, from the Miſſiſippi to the gulf of Mexico, eaſtward, through the lakes Maurepas and Pontchartrain. Its junction with the Miſſiſippi is at the town of Manſhack, in N. lat. 30° 17′.

IBBETSON, Cape, a cape on the N.W. coaſt of Pitt's Archipelago. N. lat. 54° 4′. E. long. 229° 31′.

IBBETSONIA, in *Botany*, ſo named by Dr. Sims in Curtis's Magazine, p. 1259, after an ingenious writer on the ſtructure and phyſiology of plants, in Nicholſon's Journal, Mrs. Agnes Ibbetſon. It is, however, the *Cyclopia* of Ventenat, a genus previouſly publiſhed by that author, and cited by Mr. Brown in the third volume of Mr. Aiton's Hortus Kewenſis, not yet finiſhed.—The plant in queſtion is *Sophora geniſtoides* of Linnæus and Thunberg, *Podalyria geniſtoides* of Willdenow, Sp. Pl. v. 2. 502, and *Gompholobium maculatum* of Andr. Repoſ. t. 427.

IBBOT, Benjamin, in *Biography*, an Engliſh divine, was born at Beachamwell, in Norfolk, in 1680. After he had received the elements of a learned education he was entered of Clare-hall, Cambridge, where he took his degree of B. A. in 1699, and in the following year he removed to Corpus-Chriſti college, and was made a ſcholar of that houſe. He was, in 1707, taken into the family of archbiſhop Tenniſon as librarian, and ſoon after the prelate made him his chaplain. After this he obtained conſiderable preferment in the church, and in 1716 he was appointed one of the chaplains in ordinary to king George I., and when his majeſty viſited the univerſity of Cambridge, in the following year, his chaplain was created doctor of divinity by the royal mandamus. Shortly after he was appointed aſſiſtant preacher to the celebrated Dr. Samuel Clarke, and preſented to the rectory of St. Paul's, Shadwell. In 1724 he was preſented to a prebend at Weſtminſter, and died in the following year. Two volumes of his ſermons were publiſhed for the benefit of his widow by Dr. Clarke in the year 1726: and ſoon after his "Courſe of Sermons preached at the Lecture founded by the Honourable Robert Boyle." Theſe are regarded as maſterly replies to Mr. Collins's "Diſcourſe on Free-Thinking."

IBEIT, in *Geography*, a town of Africa, and capital of a diſtrict, in Kordoſan; 140 miles W. of Sennaar. N. lat. 13° 20′. E. long. 31°.

IBEK, in *Biography*, the ſlave of Schehabeddin, ſultan of India, uſurped the throne on the death of his maſter, and added to his dominions many provinces of Hindooſtan. An account of his conqueſts was written in a volume, entitled "Tage al Mather." D'Herbelot. Bibl. Orient.

IBERA, in *Ancient Geography*, a town of Spain, ſeated on the Iberus or Ebro, which is repreſented by Livy (l. xxiii. c. 28.) as a very rich city, when the Romans took it.

IBERIA, Ιβηρια, a name given by the generality of Greek writers to Spain, either from a colony of Iberians, a people bordering on mount Caucaſus, planted there; or from the river Iberus, the Ebro of the moderns, one of the moſt famous rivers of this country. However, the ancients, who lived before Polybius, by Iberia underſtood only that part of Spain extending from the Pyrenees to Calpé, or the ſtraits of Gibraltar, and terminated by the Mediterranean; the other part being unknown to, and conſequently having no name among the Greeks and Romans. The true and proper Iberia is ſuppoſed to have been originally that part of Spain called Celtiberia (which ſee), from a body of Celts who ſettled in it, bounded by the Iberus, the Pyrenees, and the Mediterranean. See Hispania.

Iberia was alſo a country of Aſia, between the Euxine and Caſpian ſeas. According to Ptolemy, it was bounded on the N. by a part of Sarmatia, on the E. by Albania; on the S. by the Greater Armenia; and on the W. by the Colchide. See Georgia.

IBERIS, in *Botany*, Ιβερις, a name in Dioſcorides, for ſomething of the creſs kind, and therefore not unſuitably retained for this genus.—Linn. Gen. 335. Schreb. 438. Willd. Sp. Pl. v. 3 452. Mart. Mill. Dict. v. 2. Sm. Fl. Brit. 692. Juſſ. 240. Lamarck. Illuſtr. t. 557. Gærtn. t. 141. Claſs and order, *Tetradynamia Siliculoſa*. Nat. Ord. *Siliquoſæ*, Linn. *Cruciferæ*, Juſſ.

Gen. Ch. *Cal.* Perianth inferior, of four obovate, concave, ſmall, ſpreading, equal, deciduous leaves. *Cor.* Petals four, unequal, obovate, obtuſe, ſpreading, with long upright claws; the two external ones much the largeſt, of equal ſize; the two inner very ſmall and reflexed. *Stam.* Filaments ſix, awl-ſhaped, erect, the two lateral ones ſhorteſt; anthers roundiſh. *Piſt.* Germen ſuperior, roundiſh, compreſſed; ſtyle ſimple, ſhort; ſtigma blunt. *Peric.* Pouch erect, nearly orbicular, compreſſed, notched, ſurrounded with an acute border, two-celled; partition lanceolate; valves boat-like, compreſſed, keeled. *Seeds* few, nearly ovate.

Eſſ. Ch. Corolla irregular; its two outermoſt petals largeſt. Pouch emarginate, with ſeveral ſeeds.

This genus is ſingular in its natural order for the unequal petals, conſtituting an irregular flower, and affording a moſt deciſive eſſential character. Reichard obſerves that in I. *rotundifolia* the petals are nearly equal; but we find them by no means ſuch as to invalidate this character.

The ſpecies are eighteen in Willdenow, moſtly herbaceous, half of them annual or biennial, ſome few of the reſt rather ſhrubby. We have two in England, I. *amara*, Engl. Bot. t. 52, found in chalky fields but rare, diſtinguiſhed by its brilliant white flowers, which ſometimes procure it a place in the flower-garden; and I. *nudicaulis*, Engl. Bot. t. 327. Curt. Lond. faſc. 6. t. 42, found here and there on gravelly ground in the ſpring. Both theſe are annual.

I. *ſempervirens* and I. *umbellata* are very frequently cultivated for ornament. The former is perennial and rather ſhrubby, conſpicuous for a profuſion of white bloſſoms, and well calculated to adorn rock-work; the latter, figured in Curt. Mag. t. 106, is a hardy annual, with purple flowers of various dyes.

I. *linifolia* is very nearly allied to the latter, of which indeed Linnæus at one time reckoned it a variety.

IBERUS, in *Ancient Geography*. See Ebro.

IBETI, in *Geography*, a town of Turkiſh Armenia; 33 miles S.S.W. of Akalziké.

IBEX, in *Zoology*, the name of an animal of the goat kind. (See Capra *Ibex*, &c.) This name is alſo given to ſome ſpecies of *Antelope*; which ſee.

IBIBIBOCA, the name of a ſpecies of ſerpent called by the Portugueſe *cobra de coral*. It is about two feet in length, and of the thickneſs of a man's thumb; and tapers off at the tail to a thinneſs, till at laſt it ends in a ſharp point. Its belly is all over white, and very bright and gloſſy; and its head is covered with white ſcales of a cubic figure, and with ſome black ones towards the edges. Its body is variegated with black, white, and red. It is a very ſlow mover; but is of a very terrible and poiſonous kind. Ray.

IBICARAM, a name given by Piſo to a ſpecies of *Cæcilia*; which ſee.

IBIJARA, the name of an American ſpecies of ſerpent, called alſo *bodty*, and by the Portugueſe *cega*, *cobre vega*, and *cobra de las cabeças*. It is of the amphiſbena kind, and is generally ſaid to have two heads, one at each end; but this is wholly erroneous. The head and tail are of the ſame ſhape, and of equal thickneſs, and the creature will ſtrike equally with either; and, as it is ſaid, its poiſon is equally contained at both. It is a ſnake of the ſmaller kind, being of about a foot long, and as thick as one's finger. It is white in colour, and as ſhining and gloſſy as glaſs; and is very elegantly marked with rings and ſtreaks of a brown or copper colour. Its eyes are ſmall, and ſcarcely conſpicuous, looking only like dots made by the point of a needle; it lives under ground, and feeds on ants and other ſmall inſects. It is often thrown up in digging; and the Portugueſe ſay, it is a creature whoſe poiſon is beyond the reach of all the known remedies. Ray.

IBIJAU, in *Ornithology*. See CAPRIMULGUS *grandis*.

IBIPITANGA, in *Botany*. See PLINIA.

IBIRA, a name given by ſome authors to the tree which produces the cubebæ, or cubebs of the ſhops.

IBIRACOA, in *Zoology*, the name of a ſpecies of ſerpent found in the Weſt Indies; whoſe bite is always attended with very terrible effects. It is of a variegated colour, mottled with black, white, and red.

IBIS, in *Ornithology*, the name of an Egyptian bird, ſaid by ſome to be a ſpecies of *Ardea* or *Heron*; by others of *Tantalus*; and by others of *Numenius*, or *Curlew*. See each of theſe articles, and alſo HASSELQUIST. It is ſaid to be peculiar to Egypt, and is there very ſerviceable in deſtroying the ſerpents, locuſts, and other devouring inſects; and hence it was, that, in early ages, they had divine honours paid them. Such is the account given by Herodotus, Diodorus Siculus, and Cicero.

It is remarkable with regard to this bird, that although it lives principally about the Nile, yet it never enters the water, nor can it ſwim. The uſe of glyſters is ſaid to have been learned from the ibis, and not from the ſtork. It generally builds its neſts upon the palm-trees, to avoid the cats. Aldrovandus relates, that the fleſh of the ibis is red, like a ſalmon's, that it is ſweet, that its ſkin is very hard, and ſmells like wild fowl. This ſubject has been treated at large by M. Savigny, in his "Hiſt. Nat. et Myth. de l'Ibis," Paris 1805, 8vo. He firſt traces the deſcription from the ancients, who mention the white ibis and the black, though the latter be not ſtrictly black, but of a deep brown colour, with beautiful metallic reflections. But if the bitumen employed in embalming was too much heated, the feathers of the white ibis became black. That the ibis devoured ſerpents is a mere imagination of the ancients. Like the other birds of its kind, even the red curlew of Cayenne, and the white of Carolina, it could only have devoured worms, little fiſh, and aquatic inſects. At preſent the white ibis is not regarded as reſident in Egypt. According to the report of the inhabitants, theſe birds arrive when the Nile begins to increaſe, probably the real cauſe of the ancient veneration; their number augments as the river riſes, and diminiſhes with its decreaſe, after which they return to Abyſſinia. They would appear to reſide in Egypt about ſeven months, at leaſt in the Delta. The black, or rather brown ibis, arrives and returns later than the white. According to this account the ibis generally arrives in Egypt in June, and retreats in October, though ſome may linger till December.

IBITIN, in *Zoology*, the name of a very large and dangerous ſerpent in the Philippine iſles. This animal twiſts its tail round the trunk of a tree, and ſtrikes its prey, as men, deer, &c. which it entirely devours, and then ſqueezes itſelf againſt the tree, in order to digeſt what it has eaten.

IBITUPOCA, in *Geography*, a town of Brazil, in the province of Minas Geraes; 32 miles S. of Villa Rica.

IBOPETUBA, a ſmall iſland in the Atlantic, near the coaſt of Brazil. S. lat. 25° 33'.

IBRAHIM, in *Biography*, ſultan of the Turks, ſucceeded his brother Amurath or Morad IV. in 1640, being then in his twenty-third year. He had been long a priſoner at the inſtance of Morad, who would have put him to death had he not been prevented by his mother; and ſuch was the ſtate of his mind, that he refuſed admiſſion to the great officers of the government when they came to announce his brother's death, and his own acceſſion to the throne, nor could he be prevailed on to open the doors of his dungeon till the dead body of Morad was laid in his view. Ibrahim was ill fitted for the cares of a crown, and reſigned the duties of his ſtation to his miniſters, contenting himſelf with trifling amuſements and groſs voluptuouſneſs. One of the firſt events of his reign was the capture of Azof, the principal poſt of the Coſſack pirates who infeſted the Black ſea: by which meaſure their depredations were repreſſed, and the navigation rendered clear to Conſtantinople. An attempt was made upon the iſland of Candia, but it was not ſucceſsful. The laſcivious deſires of Ibrahim were the cauſe of his death: he had violated the chaſtity of the beautiful daughter of the Mufti, who, reſolved upon revenge, took ſuch means as to effect the end. He ordered the ſultan to appear before him, which he refuſed: he then declared him an infidel, and incapable of exerciſing the authority of government. The janizaries took the part of the head of the church, and he was almoſt immediately ſtrangled. This was in the year 1649: he left ſeveral ſons, of whom three ſucceſſively filled the throne. Mod. Univer. Hiſt.

IBRAHIM AL-SHIRAZI, a celebrated Muſſulman doctor, a native of Shiraz, the capital of Fars, or Perſia properly ſo called. It is not known at what period he flouriſhed, but he ſuſtains a very high rank among the expounders of the law, and was author of many works in Arabic, very highly eſteemed. The principal of theſe are "An Exhortation to the Study of Juriſprudence;" "The Exemplar," an illuſtration of the principal articles, or, as the Mahometans call them, the foundations of the law. He is ſuppoſed to have been the author of a work on the art of ſcholaſtic diſputation, with the Arabic title, ſignifying "The Search after Truth."

IBRAHIM AL-MEROUZI, a celebrated Muſſulman doctor, who derived his ſurname from the city of Merou, in the province of Koraſan, where he was born. He wrote many pieces in the Arabic language, which are greatly valued; and among others a commentary on the "Mozni," conſiſting of an abridgment of Muſſulman law. At Bagdat, where he reſided, he was conſulted as an oracle in all matters relating to juriſprudence. In advanced life he removed from Bagdat to Cairo in Egypt, where he died in the year of the hegira 340.

IBRAHIM BEN IBRAHIM MEHERAN, one of the celebrated doctors of the ſect of Schafêi, was author of many works of high reputation, of which the chief is a defence of the Muſſulman law againſt the objections of thoſe unbelievers and Atheiſts deſcribed under the Arabic title, ſignifying "Men without Religion." He died in the year 418 of the hegira. A more full account of the perſons juſt mentioned may be found in Herbelot's Bibl. Orient.

IBRAHIM EFFENDI, a native of Poland, who was raiſed by his courage and talents to the principal dignities in the Ottoman empire. He eſtabliſhed the firſt printing-preſs in Turkey. The earlieſt work which he produced was on the military; he afterwards publiſhed the "Account of an Expedition againſt the Afghans;" "A Turkiſh Grammar;" and "A Hiſtory of Turkey."

IBRAHIM, in *Geography*, a mountain of Arabia, in Yemen; 40 miles S. of Chamir.

IBRAHIM *Baſſa*, a river of Syria, anciently *Adonis*, (which ſee),

ſee), that runs into the Mediterranean, about five miles S. of Gibelet.

Ibrahim *Lik*, a town of the Arabian Irak, on the Tigris; 80 miles N. of Bagdad.

IBRAIM, a town of Hungary; 14 miles N.N.E. of Nanas.—Alſo, a river of Perſia, which runs into the Perſian gulf, ſix miles S.W. of Mina.

IBRAS, a town of Lithuania, in the palatinate of Brzeſc; 40 miles S.W. of Pinſk.

IBRIGI, a town of European Turkey, in Romania; 16 miles N.N.W. of Gallipoli.

IBRIM, a town of Africa, in the northern part of Nubia, ſubject to the Turks; 120 miles S. of Syene. N. lat. 22°. E. long. 32° 40′.

IBRIS, a ſmall iſland of Scotland, in the Frith of Forth; three miles N.W. of North Berwick. N. lat. 56° 5′. W. long. 2° 51′.

IBUM. The rabbins give this name to the ceremony of a brother's marrying his ſiſter-in-law, the widow of his brother, deceaſed without children, by virtue of the Moſaic law mentioned in Deut. xxv.

IBURAR, in *Geography*, a town of Aſiatic Turkey, in Caramania; 16 miles N. of Alanieh.

IBURG, a town of Weſtphalia, in the biſhopric of Oſnabruck, having formerly a citadel, which was the epiſcopal palace; 10 miles S. of Oſnabruck.

IBYCUS, in *Biography*, one of the nine celebrated Greek lyrics. Some ſay he was the ſon of a native of Reggio, but born in Meſſina. He was likewiſe a great muſician, and inventor of the inſtrument called Sambuca, of four ſtrings of acute ſound; and according to Euphorion in Athenæus, of the Troglodites, from its reſemblance to the ſambuca, which was triangular. The military inſtrument mentioned by Polybius, lib. viii. was called *ſambuca*.

Ibycus flouriſhed in the 60th olympiad, and the 214th year of Rome. He was author of various works, of which Henry Stephens has collected fragments. The unfortunate Ibycus being attacked by thieves, and begging in vain that they would ſpare his life, when on the point of receiving the blow which left him for dead, he cried out to a flock of cranes that was hovering over him, to bear witneſs againſt his murderers. Some time after, theſe aſſaſſins being in a market, and having ſpied a flock of cranes, ſaid to each other, laughing, there go the witneſſes againſt us for the death of Ibycus. This ſpeech being reported to the magiſtrates, the thieves were put to the torture, when they confeſſed the fact and were hung. Hence came the proverb *Ibyci Grues*, againſt villains whoſe crimes were accidentally diſcovered. The following verſe of Auſonius on the ſubject is well known:

> "Ibycus ut periit, vindex fuit altivolans Grus."
> Plato, Plutarch, Athenæus.

IBYNUS. Pere Parran ſpeaks of Ibynus as one of the beſt writers on muſic among the ancients before Boethius, St. Baſil, St. Hilary, St. Auguſtine, St. Ambroſe, St. Gelaſius, &c. Where the good father Parran found this author we know not, as we have never met with his book or his name in our reſearches after the Materia Muſica.

IBYRIESKI, in *Geography*, a town of Lithuania; 32 miles E. of Koniecpole.

IÇA, or Yça, or *Valverde*, a town of Peru, in the audience of Lima, and one of three towns, which give name to a province called "Iça Piſco and Naſca." It is ſituated in a valley, and its principal commerce conſiſts in glaſs, wine, brandy, &c.; it contains about 6000 ſouls; 140 miles E.S.E. of Lima. S. lat. 13° 50′. W. long. 75° 28′.

Iça, *Piſco and Naſca, juriſdiction of*, a province of Peru, in the audience of Lima, comprehending about 140 miles along the coaſt of the Pacific ocean, interſected with ſandy deſerts. The oil and wine yielded by this province are excellent, and ſupply the other provinces; and where the land is capable of being watered, it produces corn, maize, and a variety of excellent fruits. The inhabitants near the coaſt are employed in catching fiſh, which they cure and ſend in great quantities into the inland country.

ICACO, in *Botany*. See Chrysobalanus.

ICADES, the name of an ancient feaſt, celebrated every month by the Epicurean philoſophers, in memory of their maſter Epicurus.

The day on which it was held was the twentieth day of the moon, or month, which was that whereon Epicurus was born, and hence came the name *icades*, from εικας, of εικοσι, *twenty*.

They adorned their chambers on this day, and bore his image in ſtate about their houſes, making ſacrifices, &c.

ICARIA, in *Ancient Geography*, an iſland of the Ægean ſea, ſituated W. of the iſle of Samos, E. of that of Delos, and S.S E. of that of Chios.

ICARIAN Sea, that part of the ſea of the Archipelago into which Icarus fell. Thus Diodorus and Ovid deduce its name. "Icarus Icarias nomine fécit aquas." But the learned Bochart ſays, that this part of the Ægean ſea was ſo called upon account of the iſle Icaria, or Icaure, which, in the Phœnician language, imports "fiſhy."

ICARIUM, an iſland of the Perſian gulf, over-againſt the mouth of the Euphrates. Here, according to Strabo, were a temple and oracle of Apollo. Arrian calls it Icaros, Pliny, Ichara, and Ptolemy, who places it on the coaſt of Arabia Felix, calls it Ichara and Icaros.

ICARUS, a river of Aſia, in Scythia, which flowed into the Oxus, according to Pliny.

Icarus, in *Fabulous Hiſtory*, the ſon of Dedalus, who was ſhut up by the king of Crete, with his father, who had favoured the amours of the queen in the labyrinth. As Dedalus knew all its mazes, he found no great difficulty in extricating himſelf; and having gotten a ſhip which Paſiphae had provided for him, he fixed ſails to it, the uſe of which was not then known in Greece, and thus was able to outſtrip Minos's galley which purſued him with oars. His ſon Icarus, having arrived in an iſland very remote from the continent, and endeavouring to land too precipitately, fell into the ſea and was drowned; or, not having ſkill enough to manage his barge, as we learn from Pauſanias (in Bœot.), periſhed near the iſland of Samos. The poets veiled this eſcape under the ingenious fiction of wings, the invention and uſe of which are aſcribed to Dedalus; thus Horace, (Od. l. i.) ſpeaks of them:

> "Expertus vacuum Dædalus aera
> Pennis non homini datis."

The young and adventurous Icarus, it is ſaid, diſregarded the wiſe counſel of his father, who recommended him not to ſoar too high, leſt the heat of the ſun ſhould melt the wax with which his wings were faſtened, while he himſelf flew near the ſurface of the water, and even took care, as Diodorus Siculus remarks, to moiſten his wings from time to time, leſt they ſhould be over-heated; and fell into the ſea.

ICCIUS Portus, or Itius *Portus*, the harbour of Gaul, whence Cæſar embarked his troops for the invaſion of England. Some have referred this harbour to Bologna, others to Witſand, and others to Calais.

ICE, a brittle tranſparent body, formed of ſome fluid, frozen or fixed by cold.

The ſpecific gravity of ice to water is as eight to nine; or the ſpecific gravity of water being 1, that of ice is .93; hence, being lighter than water, it floats upon it. The ſpecific gravity of ice was tried by Dr. Irving, in Phipps's voyage to the north pole; who found, that when a piece of the moſt denſe ice which he could meet with was immerſed in ſnow-water, the thermometer 34°, fourteen fifteenth parts ſunk under the ſurface of the water: in brandy juſt proof, it barely floated; in rectified ſpirits of wine, it fell to the bottom at once and diſſolved immediately. This rarefaction of ice has been ſuppoſed to be owing to the air-bubbles produced in ice while freezing; theſe, being conſiderably large in proportion to the water frozen, render the ice ſo much ſpecifically lighter. Accordingly, it is ſaid, that a conſiderable quantity of air is lodged in the interſtices of water, though it has not there any elaſtic property, on account of the diſunion of its particles; but theſe particles coming cloſer together, and uniting as the water freezes, light, expanſive, and elaſtic air-bubbles are thus generated, and increaſe in bulk as the cold grows ſtronger; whence of courſe the ice grows lighter, and theſe air-bubbles acquiring an elaſtic force burſt to pieces any veſſel in which the water is cloſely contained. But ſnow-water, or any water long boiled over the fire, affords an ice more ſolid than ordinary, and with fewer bubbles. Pure water, long kept in vacuo, and frozen afterwards there, freezes much ſooner, on being expoſed to the ſame degree of cold, than water unpurged of its air and ſet in the open atmoſphere. And the ice made of water thus diveſted of its air will expand in freezing; though it is much harder, more ſolid and tranſparent, and more ponderous than common ice.

But M. de Mairan, in a diſſertation on ice, more juſtly attributes the increaſe of the bulk of the water under this form, principally to a different arrangement of its parts: the icy ſkin on water, being compoſed of filaments which are found to be joined conſtantly and regularly at an angle of 60°, and which, by this diſpoſition, occupy a greater volume than if they were parallel. He found the augmentation of the volume of water by freezing, and in different trials a 14th, an 18th, and a 19th; but when the water was previouſly purged of air, only a 22d part. Beſides, ice, after its formation, continues to expand by cold; a piece of ice, which was at firſt only a fourth part ſpecifically lighter than water, on being expoſed ſome days to the froſt, became a 12th part lighter; and thus he accounts for the burſting of ice in ponds. See CONGELATION, FREEZING, and FREEZING *Mixture*.

To make the moſt perfect ice, we ſhould take the pureſt water, and perfectly purge it of its air by the air-pump; then freeze it in the ſevereſt froſt, by means of Mr. Fahrenheit's contrivance. Thus we obtain an ice of the greateſt hardneſs, denſity, purity, tranſparence, and gravity.

It appears by an experiment of Dr. Hooke, in 1663, that ice refracts the light leſs than water; whence he infers, that the lightneſs of ice, which cauſes it to ſwim in water, is not produced merely by the ſmall bubbles which are viſible in it, but that it ariſes from the uniform conſtitution or general texture of the whole maſs. This fact was afterwards confirmed by M. de la Hire. Hooke's Exper. by Derham, p. 26. Acad. Par. 1693. Mem. p. 25.

Dr. Wollaſton has fully confirmed the obſervation of Dr. Hooke by means of an accurate inſtrument which he has contrived for determining the refraction of different ſubſtances; ſo that ice muſt be conſidered as the leaſt refractive of any known ſubſtances that are not aeriform. The refractive power of ice is ſtated by Dr. Wollaſton, and by Dr. Young, by calculation, from halos, at 1.31. (See REFRACTION.) The capacity for heat of water to ice is as 1.000 to .900; and the heat, in a given meaſure, is as 1.000 to .840.

Ice is known to evaporate as well as water, and ſome ſay in an equal, others, in a greater degree. See EVAPORATION.

In the mountains of Swiſſerland there are immenſe maſſes of ice, which, by the tradition and hiſtories of the country, muſt have lain there many centuries. At certain times there happen cracks in theſe, and by theſe cracks the vaſt thickneſs of the maſſes may in ſome meaſure be gueſſed at; ſome of them being three or four hundred ells deep, and yet none of them ever having gone through the whole thickneſs.

The vaſt bodies of ice met with in the northern ſeas, near Hudſon's bay, are ſurpriſing; ſome of them being immerſed a hundred fathoms or more under the ſurface of the ocean, and a fifth or ſixth part above, and three or four miles in circumference. See Phil. Tranſ. N° 465. ſect. 2.

Theſe floating mountains of ice owe their vaſt bulk and durable nature to a cauſe not conſidered by many; that is, to their not being common ice, but the ice of ſea-water; many experiments proving, that in acid and ſpirituous liquors, when the froſt has power over them, the watery parts only are affected, and the ice is taſteleſs, while the liquor remains concentrated, and much ſtronger than before at the bottom or in the centre. It was generally ſuppoſed that the ſaline liquors, and conſequently ſea-water, were affected by freezing in the ſame manner; that is, its watery part alone was frozen, and the ſalt ſeparated from the part ſo congealed: but Dr. Liſter alleges, that the ice formed of ſea-water is really ſalt, and does contain ſea-ſalt; and finally that it is, by means of this ſalt contained in it, rendered more durable than common ice. If a phial of ſalt-water be expoſed to the air in froſty weather till flakes of ice are found in it, and then brought into a warm room, thoſe flakes will remain even in that place a long time undiſſolved; and if they are taken out and expoſed at a ſmall diſtance to the fire, they will not run into water as common ice would, but they will by degrees evaporate, and there will be left only a little white ſalt.

Since ſea-water, when frozen, thus forms a very durable ice, it appears eaſy to conceive, that the immenſe maſſes of ſuch ice found in the northern ſeas ſhould continue undiſſolved through the whole year, and at the return of the freezing ſeaſon remaining of the ſame bigneſs as at firſt, they muſt of conſequence then become much bigger by the freezing of more ice about them; and thus continuing to loſe very little, and that only by accidents, and annually to increaſe a great deal, it is not wonderful that they become ſo large. Phil. Tranſ. N 167. 836. See *Sea*-WATER.

But there have been different opinions with regard to the origin of thoſe vaſt piles of ice, reſembling whole iſlands, in the northern regions. Some aſcribe them to ſnow, which falling in great abundance in theſe cold climates, and melting in the ſea, accumulates gradually, till thoſe huge heaps are at length formed: but the more common opinion is, that this ice is formed from the freſh waters which flow from the neighbouring lands. It is certain that great quantities of floating ice are diſcharged by the river Oby, and kept in a ſtate of conſtant agitation by it. Bartoli has written an Italian treatiſe expreſsly on ice and coagulation. And the Acta Eruditorum furniſh us with an account of a French author on the ſame ſubject. See COAGULATION, COLD, and CRYSTALLIZATION.

The formation or coagulation of ice-iſlands has not yet been thoroughly inveſtigated. Captain Cook (Second Voyage, vol. ii. p. 240.) objects to the opinion of thoſe who aſcribe them to the freezing of the water at the mouths of large rivers, or great cataracts, where they accumulate till they are broken off by their own weight. He ſays that no ice was found incorporated with earth, or any of its produce, which muſt have been the caſe, if it had been coagulated in land-waters. He doubts whether there be any rivers in the countries to which he refers: "it is certain," he ſays, "that we ſaw not a river or ſtream of water on all the coaſt of Georgia, nor on any of the ſouthern lands. Nor did we ever ſee a ſtream of water run from any of the ice-iſlands. How are we then to ſuppoſe that there are large rivers? The vallies are covered, many fathoms deep, with everlaſting ſnow; and, at the ſea, they terminate in icy cliffs of vaſt height. It is here where the ice-iſlands are formed; not from ſtreams of water, but from conſolidated ſnow and ſleet, which is, almoſt continually, falling or drifting down from the mountains, eſpecially in the winter, when the froſt muſt be intenſe. During that ſeaſon, the ice-cliffs muſt ſo accumulate as to fill up all the bays, be they ever ſo large. This is a fact which cannot be doubted, as we have ſeen it ſo in ſummer. Theſe cliffs accumulate by continual falls of ſnow, and what drifts from the mountains, till they are no longer able to ſupport their own weight; and then large pieces break off, which we call "ice-iſlands." Such as have a flat even ſurface muſt be of the ice formed in the bays and before the flat vallies: the others, which have a tapering unequal ſurface, muſt be formed on, or under the ſide of a coaſt compoſed of pointed rocks or precipices, or ſome ſuch uneven ſurface. For we cannot ſuppoſe that ſnow alone, as it falls, can form, on a plain ſurface, ſuch as the ſea, ſuch a variety of high peaks and hills, as we ſee on many of the ice iſles. It is certainly more reaſonable to believe that they are formed on a coaſt whoſe ſurface is ſomething ſimilar to theirs. I have obſerved that all the ice-iſlands of any extent, and before they begin to break to pieces, are terminated by perpendicular cliffs of clear ice or frozen ſnow, always on one or more ſides, but moſt generally all round. Many, and thoſe of the largeſt ſize, which had a hilly and ſpiral ſurface, ſhewed a perpendicular cliff or ſide from the ſummit of the higheſt peak down to its baſe. This to me was a convincing proof that theſe, as well as the flat iſles, muſt have broken off from ſubſtances like themſelves; that is, from ſome large tract of ice."

"Theſe ice cliffs," captain Cook apprehends, "extend a good way into the ſea, in ſome parts, eſpecially in ſuch as are ſheltered from the violence of the winds. It may even be doubted if ever the wind is violent in the very high latitudes. And that the ſea will freeze over, or the ſnow that falls upon it, which amounts to the ſame thing, we have inſtances in the northern hemiſphere. The Baltic, the gulf of St. Lawrence, the ſtraits of Belle-Iſle, and many other equally large bays, are frequently frozen over in winter. Nor is this at all extraordinary; for we have found the degree of cold at the ſurface of the ſea, even in ſummer, to be two degrees below the freezing point; conſequently, nothing kept it from freezing but the ſalt it contains, and the agitation of its ſurface. Whenever this laſt ceaſeth in winter, when the froſt is ſet in, and there comes a fall of ſnow, it will freeze on the ſurface as it falls, and in a few days, or perhaps in one night, form ſuch a ſheet of ice as will not be eaſily broken up. Thus a foundation will be laid for it to accumulate to any thickneſs by falls of ſnow, without it being at all neceſſary for the ſea-water to freeze. It may be, by this means, theſe vaſt floats of low ice are, in the ſpring of the year, formed, and which, after they break up, are carried by the currents to the north."

The northern ice extends about 9° from the pole; the ſouthern 18° or 20°; in ſome parts even 30°; and floating ice has occaſionally been found in both hemiſpheres as far as 40° from the poles, and ſometimes, as it has been ſaid, even in latitude 41° and 42°. Between 54° and 60° ſouth latitude, the ſnow lies on the ground, at the ſea ſide, throughout the ſummer. The line of perpetual congelation is three miles above the ſurface at the equator, where the mean heat is 84°; at Teneriffe, in latitude 28°, two miles; in the latitude of London, a little more than a mile; and in latitude 80° north, only 1200 feet. At the pole, according to the analogy deduced by Mr. Kirwan, from a compariſon of various obſervations, the mean temperature ſhould be 31°. In London, the mean temperature is 50°; at Rome and at Montpelier, a little more than 60°; in the iſland of Madeira, 70°; and in Jamaica, 80°. See Congelation, Cooling, and Temperature.

Sir Robert Barker has particularly deſcribed the proceſs of making ice in the Eaſt Indies, where, during his time, he has never ſeen any natural ice. For this purpoſe they dig, on a large open plain, three or four pits, about thirty feet ſquare, and two deep each; the bottoms of which they cover about eight inches or a foot thick with ſugar-cane, or the ſtems of the large Indian corn, dried. On this bed are placed in rows a number of ſmall ſhallow unglazed earthen pans, formed of a very porous earth, a quarter of an inch thick, and about an inch and a quarter deep; which, at the duſk of the evening, they fill with ſoft water that had been boiled. In the morning, before ſun-riſe, the ice-makers attend at the pits, and collect what was frozen in baſkets, which they convey to the place of preſervation. This is generally prepared on ſome high dry ſituation, by ſinking a pit fourteen or fifteen feet deep, lining it firſt with ſtraw, and then with a coarſe kind of blanketing. The ice is depoſited in this pit, and beat down with rammers, till at length its own accumulated cold again freezes it, and forms one ſolid maſs. The mouth of the pit is well ſecured from the exterior air with ſtraw and blankets, and a thatched roof is thrown over the whole. The quantity of ice formed by the method above deſcribed, depends on a light atmoſphere, and clear ſerene weather. Phil. Tranſ. vol. lxv. pt. ii. art. 22. See Cooling, and Cooling *of Liquors*.

Ice-*bergs* are large bodies of ice filling the vallies between the high mountains in northern latitudes; the face of which towards the ſea is nearly perpendicular, and of a very lively light green colour. Some of theſe are at leaſt three hundred feet high.

Ice, *Blink of the.* See Blink *of the Ice.*

What is called the ice-blink in Greenland is an amazing congeries of ice, at the mouth of an inlet, the ſplendour of which is diſcerned at the diſtance of many leagues. It is ſaid to extend in magnificent arches for about 24 miles.

Ice-*boat*, in *Nautical Affairs*, is a kind of barge, having a ſquare and very ſloping head, made very ſtrong and ſhod with iron, which is drawn along canals by ſeveral horſes, during froſts, to break the ice, when it is not too thick to be thus broken, and there is a proſpect of its not forming again. A light kind of flat-bottomed boat has ſometimes been uſed *on* the ice, for the purpoſe of reſcuing ſkaiters and others, where the ice has broken in, and ſuch are alſo called ice-boats, of which a model by count Berſhtold is preſerved in the Repoſitory of the Society of Arts in the Adelphi. Claſs iv. N° 134, which is deſcribed vol. x. p. 277 of the Society's Tranſactions.

Ice-*borne*, in *Geology*, is employed to deſcribe the manner in which large fragments of rocks have been tranſported, to places far diſtant from their native ſituations, on maſſes of ice, floating on the ocean, before it had been reduced to its preſent limits: according to the theory of Mr. Jameſon, Geognoſy, vol. iii. p. 33. Mr. Playfair ſuppoſes, in his illuſtration of the Huttonian theory, § 348, that glaciers or inclined planes of ice, exiſting on the ſurface of the earth, previous to the excavation of vallies, were the means of tranſporting many of ſuch blocks, thoſe of granite in particular; an opinion ably combated by M. De Luc, in his Geology, § 234: but whoſe explanation of this important and very common phenomenon, *viz.* that they were projected into the air, from chaſms, or fiſſures in the earth, extending down to certain great ſubterranean caverns, by the force of vaſt currents of air and water iſſuing therefrom, ſeems (ſays Mr. Farey) leſs probable, than that recently offered by himſelf, *viz.* that the extraneous blocks of ſtone, and all other alluvial matters found on mountains and hills, were tranſported during the diſturbed and reverſed action of gravity, occaſioned by the perigeic viſits of a former ſatellite. See Philoſophical Magazine, vol. xxxvi. p. 6.

ICE-*cream*, *Method of making.* Take a ſufficient quantity of cream, and, when it is to be mixed with raſpberry, or currant, or pine, a quarter part as much of the juice or jam as of the cream; after beating and ſtraining the mixture through a cloth, put it with a little juice of lemon into the mould, which is a pewter veſſel, and varying in ſize and ſhape at pleaſure; cover the mould, and place it in a pail about two-thirds full of ice, into which two handfuls of ſalt have been thrown; turn the mould by the hand-hold with a quick motion to and fro, in the manner uſed for milling chocolate, for eight or ten minutes; then let it reſt as long and turn it again for the ſame time; and having let it to ſtand half an hour, it is fit to be turned out of the mould, and to be ſent to table.

Lemon juice and ſugar, and the juices of various kinds of fruits, are frozen without cream, and when cream is uſed, it ſhould be well mixed.

ICE-*houſe*, in *Gardening*, a ſort of building ſunk in the ground for the purpoſe of preſerving ice for uſe during the ſummer ſeaſon, when the weather becomes hot.

Situation.—The proper ſituation for an ice-houſe, is that of a dry ſpot of ground; as wherever there is moiſture the ice will be liable to diſſolve; of courſe in all ſtrong ſoils, which retain the wet, too much care cannot be taken to make drains all round the houſes to carry off moiſture; as when this is lodged near them, it will occaſion a damp, which is always prejudicial to the keeping of ice in them.

The aſpect of ice-houſes ſhould be towards the eaſt or ſouth-eaſt, for the advantage of the morning ſun to expel the damp air, as that is more pernicious than warmth; for which reaſon, trees in the vicinity of an ice-houſe tend to its diſadvantage.

The beſt ſoil for an ice-houſe to be made in is chalk, as it conveys away the waſte water without any artificial drain; next to that, looſe ſtony earth, or gravelly ſoil.

The places ſhould likewiſe be elevated, that there may be deſcent enough to convey off any wet that may happen near them, or from the ice melting; and alſo as much expoſed to the ſun and air as poſſible; not under the drip, or in the ſhade of trees, as is too often the practice, under the ſuppoſition, that if expoſed to the ſun, the ice will melt away in ſummer, which never can be the caſe where there is ſufficient care taken to exclude the external air, as the heat of the ſun can never penetrate through the double arches of the buildings, ſo as to add any warmth to the internal air; while, when entirely open to the ſun and wind, all damps and vapours are readily removed.

Shape.—The external form of the building may be according to the fancy of the owner; but for the well, into which the ice is put, a circular form is the moſt convenient; the depth and diameter of it being proportioned to the quantity of ice wanted; but it is always beſt to have ſufficient room, as when the houſe is well built it will keep the ice two or three years: and there will be this advantage in having it large enough to contain ice for two years' conſumption, that if a mild winter ſhould happen, when there is no ice to be had, there will be a ſtock to ſupply the want in the houſe already.

Where the quantity wanted is not great, a well of ſix feet diameter, and eight feet deep, will be large enough, but for a large conſumption, it ſhould not be leſs than nine or ten feet diameter, and as many deep: where the ſituation is either of a dry chalky, gravelly, or ſandy kind, the pit may be made entirely below the ſurface of the ground; but in ſtrong loamy, clayey, or moiſt ground, it will be better to raiſe it ſo high above the ſurface, as that there may be no danger from the wetneſs of the ſoil about it.

At the bottom of the well there ſhould be a ſpace about two feet deep left, for receiving any moiſture which may drain from the ice, and a ſmall underground drain ſhould be laid from this, to carry off the wet; over this ſpace ſhould be placed a ſtrong grate of wood, to let the moiſture fall down which may at any time happen, from the melting of the ice. The ſides of the well muſt be walled up with brick or ſtone at leaſt two feet thick; but if it be thicker it will be better, as the thicker the walls are made, the leſs danger there is of the well being affected by external cauſes. When the wall of the well is brought within three feet of the ſurface, there muſt be another outer arch or wall begun, which muſt be carried up to the height of the top of the intended arch of the well; and if there be a ſecond arch turned over from this, it will add to the goodneſs of the houſe; but this muſt depend on the perſon who builds going to the expence. When not, the plate into which the roof is to be framed muſt be laid on this outer wall, which ſhould be carried high enough above the inner arch to admit of a door way in, to get out the ice. Where the building is to be covered with ſlate or tiles, there ſhould be a thickneſs of reeds, ſtraw, or other ſimilar materials laid under, to guard againſt the effects of the ſun and external air; where they are laid two feet thick, and plaſtered over with lime and hair, there will be no danger of the heat penetrating in ſuch a way as to prove injurious.

The external wall of the houſe need not be built circular, but of any other form, as ſquare, hexangular, or octangular; and where it ſtands much in ſight may be ſo contrived as to make it a pleaſing object to the ſight.

But ice-houſes may be built in ſuch a manner as to have alcove ſeats in the front, having paſſages to get out, and put in the ice behind them; or the entrance may be behind, to the north; ſmall paſſages being left next the ſeats, through which to enter to take out the ice, a large door being contrived with a porch wide enough for a ſmall cart to back in, to ſhoot down the ice upon the floor near the mouth of the well, where it may be well broken before it is put down. The aperture of this mouth of the well need not be more than two feet and a half in diameter, which will be large enough to put down the ice, a ſtone being left to ſtop it with, which muſt be cloſed up as ſecurely as poſſible after the ice is put in, and all the vacant ſpace above and between this and the outer door be filled cloſe with barley ſtraw, or other ſimilar materials to exclude the external air from entering.

The door to enter by for taking out the ice ſhould be no larger than is abſolutely neceſſary for the coming at the ice, and muſt be ſtrong and cloſe to exclude the air, and at five or ſix feet diſtance from this another door ſhould be contrived which ſhould be cloſely ſhut before the inner door is opened, whenever the ice is taken out of the houſe.

When the houſe is thus finiſhed, it ſhould have time to dry before the ice is put into it; as when the walls are green the damp of them frequently diſſolves the ice. And at the bottom of the well, upon the wooden grate, ſome ſmall faggots ſhould be laid; and if upon theſe a layer of reeds be placed ſmooth for the ice to reſt upon, it will be better than ſtraw, which is commonly uſed.

Proper ſort of Ice.—In the choice of the ice, the thinner it is the better it may be broken to powder; as the ſmaller it is broken the better it will unite when put into the well. In putting it in, it ſhould be rammed cloſe, and a ſpace left between it and the wall of the well, by ſtraw being placed for the purpoſe, ſo as to give paſſage to any moiſture that may be collected by the diſſolving of the ice on the top or otherwiſe.

In putting the ice into the houſe, ſome mix a little nitre with it, to make it congeal more fully; but this is not neceſſary.

As the ice becomes ſolid in the well, an iron crow is neceſſary to take it up with.

The ice-houſe is, as has been ſeen, capable of being made an ornamental building; but this is ſeldom done; it being generally placed in a ſequeſtered ſpot, on the ſide of a hill or ſloping ground, the baſe of which is lower than the bottom of the well, the outſide being well banked up with earth, to keep out all external air and heat, and neatly covered with turf or thatch.

To conſtruct an ice-houſe, firſt chooſe a proper place at a convenient diſtance from the dwelling-houſe or houſes it is to ſerve: dig a cavity (if for one family, of the dimenſions ſpecified in the deſign) of the figure of an inverted cone, ſinking the bottom, concave, to form a reſervoir for the waſte water till it can drain off; if the ſoil requires it, cut a drain to a conſiderable diſtance, or ſo far as will come out of the ſide of the hill, or into a well, to make it communicate with the ſprings, and in that drain form a *ſlink* or *air-trap*, marked *l* (*Plate* XX. *Miſcellany*, *fig*. 5.) by ſinking the drain ſo much lower in that place as it is high, and bring a partition from the top an inch or more into the water, which will conſtantly be in the trap, and will keep the well air-tight. Work up a ſufficient number of brick piers to receive a cart-wheel, to be laid with its convex ſide upwards to receive the ice; lay hurdles and ſtraw upon the wheel, which will let the melted ice drain through, and ſerve as a floor. The ſides and dome of the cone are to be nine inches thick, the ſides to be done in ſteened brickwork, *i. e.* without mortar, and wrought at right angles to the face of the work; the filling-in behind ſhould be with gravel, looſe ſtones, or brick-bats, that the water which drains through the ſides may the more eaſily eſcape into the well. The doors of the ice-houſe ſhould be made as cloſe as poſſible, and bundles of ſtraw placed always before the inner door to keep out the air.

Deſcription of the parts referred to by the letters:

a The line firſt dug out.
b The brick circumference of the cell.
c The diminution of the cell downwards.
d The leſſer diameter of the cell.
e The cart wheel, or joiſts and hurdles.
f The piers to receive the wheel or floor.
g The principal receptacle for ſtraw.
h The inner paſſage, }
i The firſt entrance, } each of theſe paſſages has a ſeparate door.
k The outer door, }
l An air-trap.
m The well.
n The profile of the piers.
o The ice filled in.
p The height of the cone.
q The dome worked in two half-brick arches.
r The arched paſſage.
s The door-ways inſerted in the walls.
t The floor of the paſſage.
u An aperture through which the ice may be put into the cell; this muſt be covered next the crown of the dome, and then filled with earth.
x The ſloping door, againſt which the ſtraw ſhould be laid.

The ice, when to be put in, ſhould be collected during the froſt, broken into ſmall pieces, and rammed down hard in the ſtrata of not more than a foot, in order to make it one complete body; the care in putting it in, and well ramming it, tends much to its preſervation.

In a ſeaſon when ice is not to be had in ſufficient quantities, ſnow may be ſubſtituted.

Ice may be preſerved in a dry place under ground, by covering it well with chaff, ſtraw, or reeds. Phil Tranſ. N° 84. p. 140. See Snow.

Great uſe is made of chaff in ſome places of Italy to preſerve ice: the ice-houſe for this purpoſe need only be a deep hole dug in the ground on the ſide of a hill, from the bottom of which they can eaſily carry out a drain, to let out the water which is ſeparated at any time from the ice, that it may not melt and ſpoil the reſt. If the ground is tolerably dry, they do not line the ſides with any thing, but leave them naked, and only make a covering of thatch over the top of the hole; this pit they fill either with pure ſnow, or elſe with ice taken from the pureſt and cleareſt water; becauſe they do not uſe it as we do in England, to ſet the bottles in, but really mix it with the wine. They firſt cover the bottom of the hole with chaff, and then lay in the ice, not letting it any where touch the ſides, but ramming in a large bed of chaff all the way between: they thus carry on the filling to the top, and then cover the ſurface with chaff, and in this manner it will keep as long as they pleaſe.

When they take any of it out for uſe, they wrap the lump up in chaff, and it may then be carried to any diſtant place, without waſte or running. Phil. Tranſ. N° 8. See Ice.

Ice, *Palace of*, a palace built of ice by the empreſs Anne of Ruſſia, on the bank of the Neva in 1740, 52 feet long, which, when illuminated, had a ſurpriſing effect.

Ice-*plant*, in *Botany*. See Mesembryanthemum.

ICELAND, in *Geography*, the largeſt iſland in Europe next to Great Britain, is ſurrounded by that part of the northern ſea which geographers have called the Deucaledonian ocean. Its length, from the moſt weſtern cape to the moſt eaſtern, is about 260 Britiſh miles, and its breadth from north to ſouth about 200 miles. Mallet indeed reckons its length from eaſt to weſt at about 112 Daniſh miles (12 to a degree), and its mean breadth 50 of thoſe miles. The number of its inhabitants is eſtimated at about 50,000, or one to the ſquare mile. Nature herſelf hath marked out the diviſion of this iſland. Two long chains of mountains run from the middle of the eaſtern and weſtern coaſts, riſing by degrees till they meet in the centre of the iſland, from whence two other chains of ſmaller hills gradually deſcend till they reach the coaſts that lie N. and S.; thus making a primary diviſion of the country into four quarters (fierdingers), which are diſtinguiſhed by the four points of the compaſs towards which they lie. The whole iſland can be conſidered only as one vaſt mountain, interſperſed with long and deep vallies, concealing in its boſom heaps of minerals, of vitrified and bituminous ſubſtances, and riſing on all ſides out of the ocean in the form of a ſhort blunted cone. Earthquakes and volcanoes have through all ages deſolated this unhappy iſland, "while it abounds in ſulphur and ſubterranean fires, and volcanoes appear in every quarter. It would be too bold a theory (ſays Pinkerton), to ſuppoſe that ſo wide an expanſe was ejected from the ſea; not to mention that the ſurturband, or carbonated wood, found at a great depth, evinces a moſt remote vegetation. The higheſt mountains clothed with perpetual ſnow are ſtyled "Yokuls;" and of theſe Snæfial, hanging over the ſea in the S.W. part of the iſland, is eſteemed the higheſt, being computed at 6860 feet. The mountains are ſaid to be chiefly ſand-ſtone, pudding-ſtone, with petro-ſilex, ſteatite, and argillaceous ſchiſtus. The calcareous ſpar of Iceland is celebrated ſince the days of Newton for its double refraction: calcedony, zeolite, lava, pumice, black obſidian, and malachite, or copper ſtalactites, are among its mineral productions." Of *Hecla* we have already given an account under that article. The mountains of Krabla, near Mywatn, in the N.W., and of Kattlegia, were more known than Hecla by their eruptions in the 18th century. The mountains of Iceland exhibit indications of their containing iron, copper, and ſilver ore. In this iſland there are no ſalt ſprings, but ſalt has been found at the foot of the volcanoes or burning mountains. Woods rarely occur, but many large trees are driven hither by the ſea, eſpecially on the N. coaſt, where, for want of ſhipping to export it for ſale, it is ſuffered to lie and rot. Shrubs, on which grow all ſorts of berries, as juniper-berries, black-berries, &c. are burnt in great abundance every year for charcoal, uſed by the natives in their forges. On ſome of the mountains, many of which, conſiſting merely of rocks and ſand, are barren, there are plains of ſeveral miles in extent covered with verdure and producing fine graſs; between other mountains diſperſed over the iſland, there are vallies which afford plentiful nouriſhment for cattle. The fineſt paſtures are in the northern parts of the iſland, where the graſs ſprings rapidly and to a great height. The cattle are generally driven among the mountains to graze, where they find good paſture; but the graſs that grows near the habitations of the Icelanders is reſerved for winter fodder. Iceland, though a very mountainous country, is interſected with roads which are paſſable for horſes; and carriages, which were formerly uſed, being now laid aſide, ſome hundreds of pack-horſes paſs annually over the mountains from the north to the trading places in the ſouth parts of the iſland; and theſe are loaded with butter, woollen manufactures, &c. which are bartered for other commodities. The boiling ſprings of Iceland preſent a ſingular phenomenon; that of Geyſer to the N. of Skallholdt is the moſt remarkable, riſing from an aperture 19 feet in diameter, and ſpringing at intervals to the height of 50 or even 90 feet. The chief rivers of Iceland are in the eaſt; the Skalfande, the Oxarfird, and the Brua, all flowing from the S. to the N. ſome are white with lime, and others ſmell of ſulphur. The common fuel of the country is turf, ſome of which emits a ſtrong ſulphureous ſmell; and even fiſh-bones are burnt in ſome parts of the iſland. Iceland affords a great variety of ſalubrious and medicinal herbs; bread is little known among the common people, who cannot purchaſe that which is imported into the harbours; but ſubſiſt chiefly on freſh and dried fiſh, and alſo on milk, oatmeal, and fleſh. In times of ſcarcity they are conſtrained to prepare flour of various plants deſcribed by Von Troil; and their common drink is milk, and alſo a liquor called "Syra," which is four whey, kept in caſks and left to ferment: beer being ſcarce. Bears are frequently driven to this iſland with the large flakes of ice from Greenland; but they are deſtroyed by the inhabitants; ſo that the only wild beaſts to be ſeen in the iſland are brown and white foxes. The horſes are ſmall, but ſtrong and mettleſome; and thoſe that are broken for the ſaddle excepted, they lie in the open air through the year, and ſubſiſt in winter on the fodder which they can ſcrape from under the ice and ſnow. Sheep are numerous, ſo that a ſingle perſon poſſeſſes a flock of three, four, or five hundred. In winter they are driven to ſhelter at night, and alſo in very ſevere weather during the day. Their large caves afford convenient places of reſort. In winter the ſheep are occaſionally turned out, when the weather is fair and mild, to pick up what they can find under the ſnow; and if at ſuch times they are ſurprized by a great fall of ſnow, they form themſelves into a compact body, laying their heads together in the centre; and thus arranged they are covered with ſnow, and benumbed with cold, ſo as to be unable to extricate themſelves without the aſſiſtance of their owner. In this ſeaſon of hunger and diſtreſs, they have been ſometimes known to eat one another's wool. Goats in this iſland are few. Some of the Iceland oxen and cows have no horns; and in the ſouthern parts they are fed with fiſh bones, and the water in which the fiſh was boiled. Here are no hogs; few cats; but dogs are numerous. Poultry and tame foul are ſcarce, the feeding of them being dear; ſwans, wild geeſe, and ducks are plentiful; and among the latter we may mention the eider, the eggs and feathers of which are ſo much valued. Snipes, woodcocks, &c. are alſo found in this iſland. The birds of prey are the eagle, hawk, raven, and falcon, the latter being reckoned the beſt in Europe. The rivers, lakes, and bays, with the other parts of the ſea, ſupply the natives with various ſorts of fiſh in great abundance. The cod-fiſhery near Iceland begins at the point of Brederwick, and ends at that of Langerneſs, running by Cape North and the iſle of Grims, and has occupied more than 200 Dutch veſſels and about 80 French. The Icelanders are naturally robuſt and vigorous; but their ſtrength is ſoon exhauſted by the hardſhips they endure at ſea in their fiſheries; ſo that about the age of fifty years they are generally afflicted with diſorders of the breaſt and lungs, and few attain to advanced age. In the middle of the 14th century this iſland was greatly depopulated by a peſtilence called the "Black death," and in 1784 a dreadful mortality carried off 19,488 horſes, 6800 beeves, 129,947 ſheep, if the account given by Catteau (vol. i.) be not exaggerated. The exports from Iceland are principally dried fiſh, ſalted mutton, beef, butter, train-oil, tallow, coarſe and fine jackets of wadmul, woollen ſtockings and gloves, red wool, ſheep-ſkins, fox-tails of various colours, feathers, and particularly eider-down, quills, falcons, and hawks. The imports to Iceland are chiefly iron, horſes' ſhoes, timber, meal, bread, brandy, wine, tobacco, coarſe linen, a few ſilken ſtuffs, and domeſtic utenſils. The firſt inhabitants of Iceland were a colony of Norwegians, who, to withdraw themſelves from the tyranny of Harold Harfagre, retired thither in the year 874. The government was an ariſtocratic republic for about 387 years, till in 1261 it ſubmitted to Norway. The preſent inhabitants, being of Norwegian extract, have few peculiar manners; but retain more of the ancient dreſs and cuſtoms of their

their anceſtors. The Icelandic language is the moſt ancient and venerable, and of courſe the pureſt dialect of the Gothic. It has engaged the attention of many profound ſcholars, who have conſidered it as the parent of the Norwegian, Daniſh, and Swediſh, and in a great degree of the Engliſh, though this laſt may probably be more connected with the Friſic, and other dialects of the north of Germany. In the ancient Icelandic the Lord's prayer is as follows:

"Fader nor ſom eſt i Himlum. Helgad warde thitt nama. Tilkomme thitt Rikie. Skie thin vilie ſo ſom i Himmalam ſo och po ordauné. Wort dachlicka Brodh gif os i dagh. Ogh forlat os uora Skuldar ſo ſom ogh vi forlate them os Skildighe are. Ogh inled os ikkie i Freſtalſan. Utan frels os ifra ondo. Amen."

In Iceland, extraordinary as it may ſeem, letters flouriſhed in a very high degree from the 11th to the 14th century; and independent of the fabulous ſagas, which were very numerous, the ſolid and valuable works then produced in that iſland might fill a conſiderable catalogue. From Iceland we derived the "Edda" (which ſee), and our knowledge of the ancient Gothic mythology. From Iceland the Swedes, Norwegians, Danes, and Orcadians, drew their chief intelligence concerning their ancient hiſtory: Snorro in particular being ſtyled the Herodotus of the North: and the Landnama, or book of the origins of Iceland, is an unique work, diſplaying the names and property of all the original ſettlers, and the circumſtances attending the diſtribution of a barbaric colony. There ſtill exiſts in Iceland a bath, built by Snorro, in the 13th century; but the edifices being of timber, no remains of them exiſt.

In this iſland there are properly no towns; nevertheleſs the houſes of the Iceland company, ſuppreſſed on account of its commercial monopoly in 1759, at the twenty-two ports or harbours, of which there are three or four at each harbour, have been dignified with the appellation of towns; though they are only trading places. We have already ſaid that Iceland conſiſts of four quarters, ſeparated from one another by ridges of mountains. The north quarter conſtitutes the dioceſe of Holun, containing 140 churches. The other three quarters are included in the dioceſe of Skalholt, to which belong 163 churches. Theſe two biſhoprics are only valued at 150*l.* each. The religion of this iſland as well as of the Daniſh dominions to which it belongs, is the Lutheran. Iceland was converted to Chriſtianity at the ſame period with Norway, in the reign of Olaf I. There are two Latin ſchools maintained at the royal expence in Iceland. The winter ſeaſon in this iſland is unexpectedly moderate, ſo as generally to permit the natives to cut turf even in January. In this extenſive iſland there is not much room for agriculture; which has however greatly declined ſince the period of the republic, when treatiſes were written on this intereſting ſubject. N. lat. 63° 15′ to 67° 15′. W. long. 10 to 25°.

ICELAND, or *Iſland Cryſtal*. See CRYSTAL *of Iceland*.

ICELE, in *Mythology*, the ſon of Sleep, according to the fable, and brother of Morpheus, who is ſaid to have the power of changing himſelf into a variety of forms; "varias imitantia formas ſomnia, deluſæ mentis imago." Ovid. Met. lib. ii. c. 630.

ICENI, in *Ancient Geography*, a Britiſh people, who were ſituated to the north of the Trinobantes, and inhabited that country, which is now divided into the counties of Suffolk, Norfolk, Cambridge, and Huntingdon. This nation is called by ſeveral different names by the Greek and Roman writers, as Simeni by Ptolemy, Cenimagni by Cæſar, &c. They do not ſeem to have made any oppoſition to the Romans at their firſt invaſion under Cæſar, but made their ſubmiſſion at the ſame time with ſeveral of the neighbouring ſtates. (Cæſ. Bell. Gal. l. v. c. 14.) At the next invaſion in the reign of Claudius, the Iceni entered into a voluntary alliance with the Romans; but ſoon after, joining with ſome other Britiſh tribes in a revolt, they were defeated in a great battle by Oſtorius Scapula, the ſecond Roman governor of Britain, A. D. 50, and reduced to a ſtate of ſubjection. For ſome time after this they were treated with much favour and indulgence by the Romans, and even allowed to live under the immediate government of Praſutagus, their own native ſovereign. But after the death of that prince, the Iceni were ſo much enraged at ſome grievous inſults which were offered to his widow and daughters, by the luſt and avarice of certain powerful Romans, that they broke out into a ſecond revolt, much more violent than the firſt. In this revolt they were commanded by the celebrated Boadicea, the brave and injured widow of their late king; and being joined by ſeveral other Britiſh ſtates, they did many cruel injuries to the Romans and their allies. But being at length entirely defeated in battle, with prodigious ſlaughter, by Suetonius Paulinus, A.D. 61, they were reduced to a ſtate of total and final ſubjection to the Roman government; and the Romans took great pains to keep them in this ſtate of ſubjection, by building many ſtrong forts, ſtations, and towns in their country. (Tacit. Annal. l. xiv. c. 40, 41, 42.) The capital of the Iceni, which is called by the Roman writers Venta Icenorum, was ſituated at Caiſter, on the banks of the river Wintſar, about three miles from Norwich, where ſome veſtiges of its walls are ſtill diſcernible. Several of the Roman ſtations in the country of the Iceni are mentioned in the fifth Iter of Antoninus; as Villa Fauſtini, Iciani, Camboricum, Durolipons, and Durobrivæ; *i. e.* St. Edmundſbury, Ickborough, Cheſterford, Waltham, and Caiſter on the Nen. Some other places in the ſame country are mentioned in the ninth Iter, as Venta Icenorum, Sitomagus, and Combretonium, *i. e.* Caiſter, Wulpit, and Stretford. Two places on the ſea-coaſt are mentioned in the Notitia Imperii, Branodunum and Garononum, *i. e.* Brancaſter and Yarmouth, in which ſtrong garriſons were kept by the Romans to protect the country from the depredations of the Saxon pirates. The territories of the Iceni made a part of the Roman province Britannia Prima. Henry's Hiſt. vol. i.

ICESIA, an iſland of the Mediterranean, in the Sicilian ſea. Ptolemy.

ICH-DIEN, the motto of the arms of the prince of Wales, ſignifying in High Dutch, *I ſerve*.

Sir Henry Spelman judges it to be Saxon, *Ic thien*; the Saxon *d*, with a tranſverſe ſtroke, being the ſame with *th*; and ſignifying, *I ſerve*, or *am a ſervant*, as the miniſters of the Saxon kings were called *thiens* or *thanes*. See CROWNS *of Britiſh Princes*.

ICHNÆ, in *Ancient Geography*, a town of Greece, in Macedonia, placed by Pliny on the ſea-coaſt near the Axius.—Alſo, a town of Aſia, in Meſopotomia, on the banks of the river Billicha, N.W. of Nicephorium. This town took part with the Romans when Craſſus was defeated by the Parthians.

ICHNEUMON, in *Zoology*, the trivial or ſpecific name of a kind of weeſel that inhabits Egypt, eſpecially on the banks of the Nile, and which is conſidered particularly uſeful in diminiſhing the number of that formidable creature the crocodile, by inſinuating itſelf into the banks of the rivers or the ſands, and deſtroying the eggs; ſo that it was not without reaſon that it was ranked by the Egyptians in the claſs of their deities. It is a fierce and very crafty animal, about the ſize of the cat, and is diſtinguiſhed from the reſt of the *viverra* tribe by having the great toes remote, and the tail, which is thickeſt at the baſe, tapering gradually to the tip, which is tufted. The ichneumon is a great enemy to ſerpents, lizards, reptiles, inſects, and other noxious animals, and is ſometimes tamed by the Egyptians, and kept in their houſes to deſtroy mice. The people call it Pharaoh's rat, and the peaſants frequently bring it young to market.

According to Sonnini, neither the name ichneumon, nor that of Pharaoh's rat, is now known in Egypt. The Arabic name of the ichneumon is "Nems:" and, without doubt, it was one of the ſacred animals of ancient Egypt. Particular care was taken of it while alive, and honours were paid to it after its death: funds were ſet apart for its ſupport; it was fed, like cats, with bread ſoaked in milk, or with the fiſh of the Nile cut in pieces; and it was every where forbidden to kill it. With great diſpoſitions to familiarity, ſays Sonnini, the ichneumon is not now domeſtic in Egypt. The inhabitants do not now rear them in their houſes, nor do they even remember their having been ſo brought up by their progenitors. This writer diſputes the natural antipathy to crocodiles, attributed to the ichneumon. If ſome ichneumons, he ſays, have been ſeen flying with fury at the little crocodiles that have been offered them, it muſt have been the effect of their appetite for all ſorts of reptiles, and not, as many perſons have ſuppoſed, that of a particular enmity, or of a law of nature, which ſpecially directed them to ſtop the multiplication of this amphibious ſpecies. It would at leaſt, continues this writer, have been as reaſonable to ſuppoſe, that nature created the ichneumon on purpoſe to prevent the too great propagation of poultry, which, in fact, they deſtroy in much greater proportion than they do crocodiles. Beſides, in more than half the northern part of Egypt, that is, in the part comprehended between the Mediterranean ſea and the town of Siout, they are very common, although there are here no crocodiles; while they are more ſcarce in Upper Egypt, where crocodiles are very numerous. The ichneumon is no where more multiplied than in Lower Egypt, which being better cultivated, more inhabited, more moiſt, and more ſhady, affords alſo a more abundant ſupply of prey and food; and yet crocodiles are there never ſeen. The antipathy to the crocodile, erroneouſly aſcribed to the ichneumon, belongs to a ſpecies of tortoiſe of the Nile, who, as ſoon as the young crocodiles are hatched, and reach the river, attacks and devours them. This ſpecies of tortoiſe is only to be found in the upper parts of the Nile, to which crocodiles are confined. This tortoiſe is the "therſæ" of the Egyptians and Nubians, and, as Sonnini conceives, has a much better title than the ichneumon to the god of the ancient Egyptians, and the wonder of writers. Sonn. Trav. in Egypt. See Viverra.

M. Sonnini mentions a beautiful ſpecies of ichneumon-fly, with a long and ſtrong weapon at the extremity of the body, which ſometimes enters the houſes in Egypt; and which ſhines with the moſt lively colours: its head is of a beautiful emerald-green; the corſelet and belly are of a gliſtening purple hue.

Ichneumon, in *Entomology*, a genus of the hymenopterous order. See Wasp-ichneumon *Fly*.

ICHNOGRAPHY, in *Perſpective*, the view of any thing cut off by a plane parallel to the horizon, juſt at the baſe or bottom of it.

The word is derived from the Greek *ιχνος*, *veſtigium*, *footſtep*, and *γραφω*, *ſcribo*, *I deſcribe*, as being a deſcription of the footſteps or traces of a work.

Ichnography is the ſame with what is otherwiſe called the *plan*, *geometrical plan*, or *ground plot*, of any thing, and is oppoſed to orthography or elevation. See alſo Scenography and Stereography.

Ichnography, in *Architecture*, is a tranſverſe ſection of a building, exhibiting the circumference of the whole edifice, and of the ſeveral rooms and apartments in the given ſtory; together with the thickneſs of the walls and partitions; the dimenſions of the doors, windows, and chimneys; the projectures of the columns and piers, with every thing viſible in ſuch a ſection.

The drawing or deſigning of this is properly the work of the maſter-architect, or ſurveyor; it being, indeed, the moſt difficult of any.

Ichnography, in *Fortification*, denotes the plan or repreſentation of the length and breadth of a fortreſs; the diſtinct parts of which are marked out, either on the ground itſelf, or upon paper.

ICHOGLANS, the grand ſeignior's pages, ſerving in the ſeraglio.

The word, according to ſome authors, is compoſed of the Turkiſh words, *ich*, or *itch*, which ſignifies *within*, and *oglan*, *page*; in which ſenſe ichoglan is a page ſerving withinſide the palace, or ſeraglio. Others derive it from the barbarous Greek *ιγκολας*, or *ιγκολος*; which was formed from the Latin *incola*. Theſe two etymologies give nearly the ſame ſenſe to ichoglan, taking *incola* for *domus incola*.

Theſe are the children of Chriſtians, and bred up in an auſterity ſcarcely to be conceived. The ſultan prefers them to offices more or leſs conſiderable, as they appear more or leſs capable, and devoted to his ſervice; but it is to be obſerved, they are incapable of offices till forty years of age, unleſs they have ſome particular diſpenſation from the grand ſeignior. They are educated with a great deal of care in the ſeraglios of Perſia, Adrianople, and Conſtantinople. They are under the direction of a capi aga, who preſides over their exerciſes, and treats them with great ſeverity. They are divided into four odas, or chambers, where, according to their ſeveral talents or inclinations, they are inſtructed either in the languages, religion, or exerciſes of the body.

ICHOR, Ιχωρ, ſignifying any *humour* or *humidity*, properly denotes a thin, watery humour, like ſerum; but is ſometimes alſo uſed for a thicker kind, flowing from ulcers; called alſo ſanies.

Ichor, in *Surgery*, ſignifies a thin, bloody, acrid diſcharge, which frequently takes place from unhealthy ſores and wounds.

ICHTHYITES, in *Natural Hiſtory*, is the name by which Dr. Grew denominated ſeveral fiſh-moulds, or impreſſions of fiſh preſerved in the collection at Greſham college. "Rarities," p. 256.

ICHTHYOCOLLA, Ιχθυοκολλα, formed of *ιχθυς*, *fiſh*, and *κολλα*, *glue*, popularly called *iſinglaſs*, or *fiſh-glue*, is a ſolid glutinous ſubſtance, prepared from a fiſh of the ſturgeon kind, caught in the rivers of Ruſſia and Hungary. The beluga affords the beſt; but the ſounds of all freſh-water fiſh yield, more or leſs, fine iſinglaſs; particularly the ſmaller ſorts, found in prodigious quantities in the Caſpian ſea, and ſeveral hundred miles beyond Aſtracan, in the Wolga, Yaik, Don, and even as far as Siberia. It is alſo well known, that our lakes and rivers in North America are ſtocked with immenſe quantities of fiſh, ſaid to be of the ſame ſpecies with thoſe in Muſcovy, and yielding the fineſt iſinglaſs. The production of iſinglaſs requires no artificial heat, neither is the matter diſſolved for this purpoſe, as it has been generally imagined: for, as the continuity of its fibres would be deſtroyed by ſolution, the maſs would become brittle in drying, and ſnap ſhort aſunder, which is always the caſe with glue, but never with iſinglaſs. The latter, indeed, may be reſolved into glue with boiling water, but its fibrous recompoſition would be found inpracticable afterwards, and a fibrous texture is one of the moſt diſtinguiſhing characteriſtics of genuine iſinglaſs. Iſinglaſs is nothing more than certain membranous parts of fiſhes, diveſted of their native mucoſity, rolled and twiſted into different forms, and dried in the open air. The ſounds or air-bladders of freſh-water fiſh, in general, are preferred for this purpoſe; as being the moſt tranſparent, delicate, flexible ſubſtances. Theſe conſtitute the fineſt ſorts of iſinglaſs; thoſe called book and ordinary ſtaple are made of the inteſtines, and probably the peritonæum, of the fiſh. The ſounds, which yield the finer iſinglaſs, conſiſt of parallel fibres, and are eaſily rent longitudinally: but the ordinary ſorts are found compoſed of double membranes, whoſe fibres croſs each other obliquely, reſembling the coats of a bladder. Iſinglaſs receives its different ſhapes in the following manner: the parts of which it is compoſed, particularly the ſounds, are taken from the fiſh while ſweet and freſh, ſlit open, waſhed from their ſlimy ſordes, diveſted of every thin membrane which envelopes the ſound, and then expoſed to ſtiffen a little in the air. In this ſtate they are formed into rolls about the thickneſs of a finger, and in length according to the intended ſize of the ſtaple; a thin membrane is generally ſelected for the centre of the roll, round which the reſt are folded alternately, and about half an inch of each extremity of the roll is turned inwards. Having thus ſettled the proper dimenſions, the two ends of what is called the ſhort ſtaple are pinned together with a ſmall wooden peg; the middle of the roll is then preſſed a little downwards, which gives it the reſemblance of a heart, and thus it is laid on boards, or hung up in the air to dry. The ſounds, which compoſe the long ſtaple, are larger than the former; but the operator lengthens this ſort at pleaſure, by interfolding the ends of one or more pieces of the ſound with each other. The extremities are faſtened with a peg like the former; but the middle part of the roll is bent more conſiderably downwards; and, in order to preſerve the ſhape of the three obtuſe angles thus formed, a piece of round ſtick is faſtened in each angle with ſmall wooden pegs, in the ſame manner as the ends. In this ſtate it is permitted to dry long enough, to retain its form, when the pegs and ſticks are taken out, and the drying completed. Laſtly, the pieces of iſinglaſs are joined together in rows, by running pack-thread through the peg-holes, for the convenience of package and exportation.

The membranes of the book ſort being thick and refractory, will not admit the ſame formation; and, therefore, the pieces, after their ſides are folded inwardly, are bent in the centre, in ſuch manner, that the oppoſite ſides reſemble the cover of a book, whence its name; a peg, run acroſs the middle, faſtens the ſides together, and thus it is dried like the former. The cake iſinglaſs is formed of the bits and fragments of the ſtaple ſorts, put into a flat metalline pan, with a very little water, and heated juſt enough to make the parts cohere like a pan-cake when it is dried: but this is of little value. Iſinglaſs is beſt made in the ſummer, as froſt gives it a diſagreeable colour, deprives it of its weight, and impairs its gelatinous principle.

The ſounds of cod and ling bear a general likeneſs to thoſe of the ſturgeon kind of Linnæus, and are uſed for the ſame purpoſe. The Newfoundland and Iceland fiſhermen ſplit open the fiſh as ſoon as taken, and throw the back-bones, with the ſounds annexed, in a heap; but previouſly to putrefaction, the ſounds are cut out, waſhed from their ſlime, and ſalted for uſe. In cutting out the ſounds, the parts between the ribs are left behind, which are much the beſt; the Iceland fiſhermen are ſo ſenſible of this, that they beat the bones upon a block with a thick ſtick, till the *pockets*, as they term them, come out eaſily, and thus preſerve the ſound entire. If the ſounds have been cured with ſalt, that muſt be diſſolved by ſteeping them in water, before they are prepared for iſinglaſs. The freſh ſound muſt then be laid on a block of wood, whoſe ſurface is a little elliptical, to the end of which a ſmall hair bruſh is nailed, and with a ſaw-knife the membranes on each ſide of the ſound muſt be ſcraped off. The knife is rubbed upon the bruſh occaſionally, to clear its teeth; the pockets are cut open with ſciſſors, and perfectly cleanſed of the mucous matter with a coarſe cloth; the ſounds are afterwards waſhed a few minutes in lime-water, in order to abſorb their oily principle; and laſtly, in clear water. They are then laid upon nets to dry in the air; but, if intended to reſemble foreign iſinglaſs, the ſounds of cod will only admit of that called book; but thoſe of ling of both ſhapes. The thicker the ſounds are, the better the iſinglaſs, excepting its colour; but that is immaterial to the brewer, who is its chief conſumer. See Mr. Jackſon's Account of the Diſcovery of the Manufacture of Iſinglaſs, in Phil. Tranſ. vol. lxiii. part i. p. 1, &c.

Ichthyocolla, or iſinglaſs, is one of the pureſt and fineſt of the animal glues, of no particular ſmell or taſte. Beaten into threads, it diſſolves pretty readily in boiling water or milk, and forms a gelatinous ſubſtance, which yields a mild nutriment, and proves uſeful, medicinally, in ſome diſorders ariſing from a ſharpneſs and colliquation of the humours. A ſolution of it in water, curiouſly ſpread, whilſt hot, upon ſilk, affords an elegant ſticking-plaſter for ſlight injuries of the ſkin, not eaſily ſeparable from the part by water, and ſcarcely inferior to the more compounded one ſold under the name of the ladies black ſticking-plaiſter, in which different balſams and reſins are joined to the ichthyocolla. See Emplastrum *adhæſivum*. Lewis's Mat. Med.

Iſinglaſs is uſed in miniature painting, in the ſame manner as the gum Arabic or Senegal, for rendering water a proper vehicle, by giving it a due viſcidity for ſpreading and binding the pigments of an earthy texture. But the greateſt quantities of it are conſumed by brewers, winecoopers, &c. for fining their liquors. See Fining.

A ſize may be made of iſinglaſs, by boiling half an ounce of the beaten iſinglaſs in a pint and half of water, till the whole be diſſolved, and then ſtraining the hot fluid through a linen rag. The ſize may be reduced by taking half the above quantity, and adding to it an equal meaſure of hot water.

A very valuable glue is to be made of this drug. See Glue.

It is valuable, in that it will keep alſo, and is a very proper form to keep iſinglaſs in, for readineſs for the winecooper's uſe; beſides this it ſerves alſo very elegantly for the taking off the impreſſions of medals, coins, &c. See Medal.

Ichthyocolla *Piſcis*, in *Ichthyology*, the name of a large fiſh, of the ſturgeon or acipenſer kind; from which, as alſo from the *huſo Germanorum*, the drug called iſinglaſs or ichthyocolla is made. It is a fiſh of very great ſize, and is cartilaginous, having no bones or ſcales; its head is large and thick, and its mouth ſtands very forward; the upper jaw has four fleſhy apophyſes hanging from it; its eyes are ſmall; its fleſh is very well taſted, but glutinous; it is of a yellowiſh colour, and its tail is large and forked. See Beluga-*ſtone*.

ICHTHYODONTES, in *Natural Hiſtory*, is a name by which ſome authors deſcribe the gloſſapetra, or foſſil teeth of fiſh.

ICHTHYOLITE, ICHTHYOLITHUS, in *Natural Hiſtory*, a name given to the foſſil remains of fiſhes, and alſo to the impreſſions of theſe animals or their ſkeletons in ſtone. Some authors, however, have applied that term to ſuch ſpecimens only as exhibit the fiſh itſelf, either petrified or in the ſtate of a mummy; while the name of *Typolites* has been propoſed for ſuch ſtony ſubſtances as exhibit the mere impreſſion of thoſe animals. The number of ſpecies of which the foſſil remains have been deſcribed by naturaliſts is comparatively ſmall; nor can this be a matter of ſurpriſe if we conſider the extreme tenderneſs of the ſubſtance, and the corruptible nature of moſt fiſhes, together with the many circumſtances unfavourable to petrifaction under which they are generally found after their death. Even thoſe few that, by being accidentally enveloped in mud and ſoft clayey ſediment at the bottom of the water, are preſerved from paſſing into immediate diſſolution, or from becoming the food of the inhabitants of the waters, generally leave but faint traces of their original form. Sometimes, however, we ſee their external appearance completely preſerved, as in thoſe of Veſtena in the Veroneſe territory, and thoſe in the bituminous marle-ſlate of Oeningen; or they appear as ſolitary mummies, incloſed as it were in a coffin of a grey marle, in which ſtate the Arctic trout (*Salmo arcticus*) is frequently ſeen, particularly at Zuckertop, on the weſt coaſt of Greenland.

Where petrified fiſhes or their impreſſions occur in conſiderable number, we may always be certain that they periſhed by ſome ſudden revolution or cataſtrophe, by which they were overwhelmed in ſhoals on the very ſpots whoſe geological hiſtory they now contribute to elucidate. The moſt extenſive depoſitary of foſſil remains of fiſhes is that of

Monte Bolca, or rather of *Veſtena Nova*, in the Veroneſe territory. Veſtena Nova is a diſtrict ſeparated from Monte Bolca by the river Scaranto Majore, which receives the rivulets that deſcend from the mountains on both its ſides. Within the boundaries of this place, one thouſand paces from the village Bolca, and about 242 paces lower than the ſummit of the mountain of that name, we find the fiſh-quarry called *Laſtrara*, being a hill whoſe height above the level of the ſea is about 38 French toiſes. The rock which predominates almoſt in the whole of the diſtricts of Bolca and Veſtena, is baſalt, both maſſive and priſmatic. The three places in which the latter appears particularly characteriſtic are the Valle dei Stanghellini, mount San G. Ilarione, and the upper part of Monte Bolca, called La Purga di Bolca. The baſaltic columns are in general perpendicular to the axis of the mountain; but thoſe of San Giovanni Ilarione are rather inclined to the horizontal line, and appear to have been forced out of their original poſition. Beſides baſalt there occur other rocks in theſe mountains that have the appearance of being volcanic productions; ſuch as an aſh-grey conglomerate, red cellular ſtones like ſcoriæ, and a violet coloured indurated earth, not unlike the puzzolana of true volcanoes. Some of theſe maſſes are full of nodules of fibrous zeolite and calcareous ſpar; others contain fragments of feld ſpar and quartz, while ſtill others exhibit an uniform ſolid maſs without any imbedded ſubſtances. Only the firſt mentioned of theſe rocks have the appearance of productions of volcanoes; the others obviouſly belong to the porphyritic formation, and ſome of the laſt mentioned are hornſtone. But of all the rocks juſt noticed, none are to be ſeen in the immediate neighbourhood of the immenſe quarries where the fiſhes are found. Theſe conſiſt chiefly of a more or leſs fiſſil marle diſpoſed in layers which, obſerving exactly the ſame ſucceſſion in the different adjoining hills, appear to prove that theſe formerly conſtituted a continued ridge. One of the hills conſiſts principally of a whitiſh, porous, friable tuff, reſembling common cement; it is made up of particles of lime and ſand, containing a vaſt number of foſſil ſhells, particularly of *Murex aluco* and *Turbo uriſcalpium*, natives of the Mediterranean, and here converted into a white marble; alſo of *Turbo ungulinus*, *variegatus*, and *terebra* of Linnæus. In ſome places the tuff becomes much harder; it paſſes into a kind of common limeſtone, and is found to contain mummulariæ, and lids of ſhells belonging to the above ſpecies.

The *Laſtrara*, or hill where the fiſhes are found in abundance, has for its uppermoſt ſtratum a kind of mould mixed with the detritus of baſalt and other rocks. The interior conſiſts of two diſtinct kinds of ſtrata; the one called *Zengio* is a hard marle-like limeſtone, traverſed by veins of calcareous ſpar: it is not diviſible into thin layers, and ſeldom contains any petrifactions. The other ſtrata, called *Laſtra*, conſiſt of a ſchiſtoſe marle, diviſible into very thin layers, giving out a fœtid odour when rubbed. The colour of this maſs is whitiſh, yellowiſh, or blueiſh-grey. It varies with regard to hardneſs, but is in general eaſily ſcraped by the knife. In this alone the remains of fiſhes are found, which are ſometimes ſeen accompanied by parts of maritime algæ; at other times the ſea-weeds occur ſeparate.

The fiſhes in queſtion are moſtly ſea-fiſh, but there are alſo ſome of freſh water found among them. The originals of many, if we can truſt the naturaliſts that appear to have examined them with great care, live now in regions moſt remote from each other; among them are the natives of Europe, the Indian ocean, Africa, and North and South America. The remains of the fiſhes thus imbedded are all of a dark-brown colour, and therefore appear very diſtinctly on the light ground of the ſtone; they lie flat among the laminæ, their profile and their ſeveral parts, little, if at all, diſtorted from their natural ſhape and dimenſions, except that in ſome caſes the ſtone incloſing them ſeems to have ſuffered ſome little diſturbance after their incloſure, by which they are found at times ſomewhat fractured, and the parts a little disjoined. Their whole form is well defined, but the harder parts, ſuch as the head, fins, ſpine, with the bones that branch from it on either ſide, and indeed all the bones in general, as well as in ſome the ſcales, are remarkably well expreſſed. The dark-brown matter compoſing theſe fiſhes remains diſtinct, and may be picked off from the ſtone; it projects in proportion to the thickneſs of each part in its natural ſtate; it is hard, brittle, and rather gloſſy through its ſubſtance, except in ſome of the groſſer bones, ſuch as the joints of the vertebræ, which, though of this appearance externally, are found, when broken, to conſiſt internally of laminar calcareous ſpar. On cleaving the matrix the forms are found equally announced on each of the oppoſite ſides, the prominences on one ſide being exactly anſwered by correſponding hollows on the other.

We cannot be too careful in determining the ſpecies of the prototypes of foſſil remains; in caſes, therefore, where difficulties ariſe with regard to their diagnoſis, it is much more adviſable to abſtain from pronouncing with confidence than to miſlead the geologiſt by inaccurate determination. This is more particularly the caſe with foſſil fiſhes; and it is owing to the difficulties which attend their diagnoſis, that the opinions of different naturaliſts reſpecting the ſpecies, or even the genus to which ſpecimens are to be referred, have been often ſo very contradictory. Upon the whole it may be ſaid, that thoſe of the Veroneſe territory are determined with greater care and exactneſs: and it is much to be wiſhed that the authors of the "Ittiolitologia Veronefe," which contains the deſcriptions and figures of no more than ſixteen ſpecies, all of them preſerved in the Bozza collection, might have been encouraged to proceed with this highly ſplendid and inſtructive work. The juſt mentioned ſixteen ſpecies are, 1. The ſhark (*Squalus carcharias*, Linn.). It has all the characters of this ſpecies, but its length is only 26 inches. 2. The winged chætodon (*Chætodon pinnatus*, Linn.) firſt deſcribed and figured by Scheuchzer, under the name of "Piſcis foſſilis elegans," and conjectured by him to be the Braſilian Guaperu deſcribed by Marcgraf. 3. The trumpet fiſh (*Fiſtularia chinenſis*, Linn.). 4. The ſea-needle (*Eſox Braſilienſis*), conſidered by Bloch as a variety of E. belone. 5. The ſwimming ſea-horſe (*Pegaſus natans*, Linn.), unique, in the Bozza collection. 6. *Uranoſcopus raſtrum*. It was firſt conſidered by Bozza as the unicorn fiſh (*Baliſtes monoceros*) of Cateſby: but a more cloſe examination renders it highly probable that it is an unknown or loſt ſpecies of ſtar-gazer, to which, on account of the long ſerrated dorſal fin, the above ſpecific name has been given. 7. The bat chætodon (*Chætodon veſpertilio*, Bloch.). 8. The *Portavela*, a fiſh not before deſcribed, belonging to the order jugulares of Linnæus, and in all probability to the genus *Kurtus*, eſtabliſhed by Bloch. It is here called *Kurtus velifer;* it approaches very near to Acarauna of Willughby, and the Spitſneus of Ruyſch. 9. The arc fiſh (*Chætodon arcuatus*, Bloch), unique in Bozza's cabinet. 10. *Tetrodon Honckenii*, Bloch; a ſmall ſpecies, which, in imperfect ſpecimens, has formerly been miſtaken by ſome for the impreſſion of elliptic leaves, by others for tad-poles. Only a few ſpecimens have been found in the Veroneſe hills. The biſhop of Wincheſter is mentioned in the "Ittiolitologia," as having acquired at Verona a much larger and better preſerved ſpecimen than the one figured in that work. It is not found in the common grey-coloured layers of Bolca, but in the brown and aſh-grey variety of marle-ſlate of that hill. 11. The globe-fiſh (*Tetrodon hiſpidus*, Linn.). The foſſil remains of very ſmall ſpecimens of this fiſh are found only in the whitiſh and yellow coloured layers of marle-ſlate in the Laſtrara. 12. A ſpecies of ray, denominated *Raja muricata* by Marcgraf, which name is here retained. The Portugueſe, on account of its ſhape reſembling that of a muſical inſtrument, call it *Viola:* neither Linnæus nor Bloch make mention of it; there can, however, be no doubt that it belonged to that tribe of rays which inhabit the Arabian ſeas, and is comprehended by Forſkoal under the name of *Raja ſephen*. 13. *Chætodon meſoleucus*. The prototype likewiſe deſcribed by Forſkoal as a native of the Arabian ſea, to which locality Bloch has added that of Japan; but Gmelin, conſidering both as diſtinct, calls that of Forſkoal *Ch. meſoleucus*, diſtinguiſhing the Japaneſe fiſh by the ſpecific name of *meſomelas*. 14. The argus (*Chætodon argus*, Linn.). Fortis has erroneouſly deſcribed this ichthyolite under the name of *Chætodon faber*. 15. *Gobius barbatus*, a new ſpecies, approaching the G. *ocellatus* of Brouſſonet, under which name this foſſil fiſh has been before erroneouſly deſcribed by Bozza. 16. *Gobius Veronenſis*. This has been conſidered by Fortis and Bozza as the G. *ſtrigatus* of Brouſſonet: poſterior obſervations have, however, proved it to be diſtinct from the laſt mentioned ſpecies.

To the ſpecies juſt enumerated, we ſubjoin the following ſyſtematic liſt of Bolca ichthyolites, in the famous collection of Signor Vincenzo Bozza, which, in 1791, was united with that of the marquis Gazola, and is now preſerved in the Muſeum of Natural Hiſtory of Paris: but whether they are as well determined as thoſe in the "Ittiolitologia Veroneſe" appear to be, remains to be aſcertained by thoſe who have made ichthyology the principal object of their reſearches.

1. *Fiſhes of European ſeas.*—The Rondeletian eel (*Muræna myrus*, Linn.): the Roman muræna (*Muræna Helena*, L.): *M. ſerpens: M. cœca;* the bearded eel (*Ophidium barbatum*, L.): the coal-fiſh (*Gadus carbonarius*, L.): the green gadus (G. *virens*, L.): the hake (G. *merluccius*, L.): the Mediterranean gadus (G. *Mediterraneus*, L.): the butterfly fiſh (*Blennius ocellaris*, L.): the areolated blenny (*Blennius lumpenus*, L.): the porcine ſcorpæna (*Scorpæna porcus*, L.): *Scorpæna ſcorpius*, Will.: the rufous ſcorpæna (S. *ſcroſa*, L.): *Scorpæna Salviani*, Will.: the common dory (*Zeus faber*, L.): the dab (*Pleuronectes limanda*, L.): the gilthead (*Sparus aurata*, L.): the ſargy (*Sparus ſargus*, L.): the pagre ſparus (*Sp. pagrus*, L.): the maroon ſparus (*Sp. chromis*, L.): the varying labrus (*Labrus turdus*, L.): *Scomber colias*, Will.: the common mackarel (*Scomber ſcomber*, L.): the bonito (*Scomber pelamis*, L.): the tunny (*Scomber thynnus*, L.): the cuckow gurnard (*Trigla cuculus*, L.): the ſea-pike (*Eſox ſphyræna*, L.): the herring (*Clupea harengus*, L.): the common angler (*Lophius piſcatorius*): the ſting ray, (*Raja paſtinaca*, L.)

2. *Of the Indian ſeas.*—The Indian dragonet (*Calyonymus indicus*, L.): the ciliated dory? (*Zeus ciliaris?* Bloch): *Zeus triurus* cui valde affinis Z. faber, L.: the ſtriped chætodon (*Chætodon ſtriatus*, L.): *Chætodon macro-lepidotus*, L.: *Chætodon*, Seba Muſ. 3. t. 26. f. 23. *Chæt. caneſcens*, L. *Chæt. lineatus*, L.: *Chæt. fuſcus*, Seba 3. t. 26. f. 22. *Sparus argenteus*, Seba 3. t. 27. f. 13. *Labrus*, Seba 3. t. 31. f. 5, 6. *Perca*, Seba 3. t. 23. f. 3, 4. *Eſox Amboinenſis*, Ruyſch Amb. t. 14. f. 2. The fiſh of Paradiſe (*Polynemus paradiſeus*, L.): the thriſſa herring (*Clupea thriſſa*, L.): *Diodon*, Seba 3. t. 23. f. 3, 4.

3. *Of the African ſea.*—The rough ſparus (*Sparus dentex*, L.): *Oſtracion turritus*, Linn.

4. *South American ſeas.*—The common coryphene (*Coryphæna hippurus*, L.): the Braſilian dory (*Zeus vomer*, L.): the arcuated chætodon (*Chætodon arcuatus*, L.): *Chætodon faſciatus*, L.: *Chætodon cornutus*, L.: the Curaſſao chætodon (*Ch. Curaçao*, L.): *Chætod. nigricans*, L.: *Chætod trioſtegus*, L.: the ſilvery ſparus (*Sparus argenteus*, L.): *Scomber cordyla*, Will. t. 5. 18. f. 1. *Scomber coorza piſonis*, Will. t. M. 5. f. 2. The bagre ſilurus (*S. bagre*, L.): *Loricaria plecoſtomus*, L.: The Seban polyneme (*Polynemus quinquarius*, L.): *Polynemus plebeius*, Brouſſ.: the round diodon (*Diodon orbicularis.*)

5. *North American ſeas.*—The toad gadus (*Gadus tau*) Will. t. N. f. 3.): *Chætodon chirurgus*, L.: the Carolina ſtickleback (*Gaſteroſteus Carolinus*, L.): the Canada ſtickleback (G. *Canadus*, L.): *Perca venenoſa*, L.: *Perca trifurca*, L.: the tobacco-pipe fiſh (*Fiſtularia tabacaria*, L.): *Eſox*, Cateſb. t. 1. f. 1. *Elops ſaurus*, L.: the oceanic flying fiſh (*Exocætus evolans*, L.)

The above deſcribed place, where theſe remarkable petrifactions are found in ſuch abundance, has become the ſubject of much ſpeculation with the naturaliſts of modern times Arduino was one of the firſt writers who produced ſome very ingenious conjectures, to prove the volcanic origin of that hilly diſtrict; and his theory was afterwards ſupported by Ferber, Fortis, Strange, Dolomieu, Patrin, and others; the leading feature of whoſe ſyſtem, with regard to the preſervation of the fiſhes and other marine productions, was the ſuppoſition that the whole tract where they are found, anciently conſtituting the bottom of the ſea, was raiſed by the action of ſubterraneous fire. Notwithſtanding the plauſible reaſons that have been given by thoſe naturaliſts in favour of the volcanic origin of the Bolca fiſhes, there are ſeveral very reſpectable writers, and among them the author of the "Ittiolitologia Veroneſe," who, after a minute examination into the nature of thoſe hills, and the circumſtances under which the foſſil remains occur in them, have not heſitated to pronounce them of Neptunian origin. Their obſervations lead them to ſuppoſe, that the diſtrict of Veſtena and Bolca is the reſult of a widely extended deluge, which collected the fiſhes, ſhells, and plants of diſtant parts of the globe into one common ſea; and that ſucceſſive partial inundations, together with the occaſional ignition of the inflammable ſubſtances previouſly depoſited, produced the volcanic appearance of the maſſes of rocks above thoſe ſtrata which contain the remains of fiſhes, and which are totally deſtitute of the characteriſtics of volcanic productions.

The ideas which Mr. Graydon has offered on this ſubject, in the Tranſactions of the Royal Iriſh Academy are, in ſubſtance, as follows. The very perfect preſervation of the living form obſervable in the ſpecimens from Veſtena and Bolca, appears to prove that the fiſhes could not have been long dead, before they were enveloped by the calcareous marle, which muſt have been ſuſpended in the water, and, on ſubſiding, have caught and encloſed the fiſh which probably derived their death from this very cauſe. The bodies of theſe animals did not undergo any ſimultaneous putrefaction, but their oily and other ſoft parts were abſorbed by the encloſing maſs. This ſtony ſubſtance being for the greateſt part calcareous, Mr. Graydon ſuppoſes that a vaſt body of it, previouſly calcined or reduced into quick lime by the agency of ſubterraneous fire, again paſſed into the ſtate of ſlacked lime, as ſoon as it came into contact with the waters, from which ſubſiding it gradually and ſucceſſively concreted at the bottom, and aſſumed the ſtructure of a ſchiſtoſe maſs, which becoming afterwards impregnated with the oily parts of the fiſh, acquired the fœtid ſmell which it is ſtill found to emit on being ſcraped with a harder ſubſtance. It is highly probable to the ſame author, that theſe maſſes, in their original poſition, muſt have formed part of a continued and horizontal ſtratum of very conſiderable extent, of which the quarries of Bolca are evidently to be conſidered as no more than portions or fragments, now completely disjoined from all connection with their native bed. This ſeparation muſt have happened after the conſolidation of the original ſtratum; for it could not have taken place in the yet ſoft and yielding ſubſtance, without producing a conſiderable diſturbance both in the laminar ſtructure of the maſs, and in the forms of the fiſhes. It would therefore ſeem, that, at ſome ſubſequent period, the whole of the ſtratum was violently broken up, and immenſe fragments of it heaved from their natural ſituation, and diſperſed here and there as in the inſtance before us. The author conſiders the eruptive force of ſubterraneous fire fully adequate to producing theſe effects, though he allowed, that it muſt have operated in the preſent caſe with a force much exceeding whatever has been experienced in the known hiſtory of volcanoes.

In whatever manner we explain the phenomenon of the Bolca fiſhes, it will always be found extremely difficult to account for the collection, in one ſpot, of ſo many fiſhes from various parts of the globe moſt remote from each other, and among them ſome which live in freſh water. Indeed, this difficulty appears ſo great, that we are almoſt inclined to ſuſpect the accuracy of the obſervations made to aſcertain the originals of theſe foſſil fiſhes, and that many of them ſhould be conſidered rather as approaching to, than as being the ſame with, the ſpecies to which they are referred by authors.

We ſubjoin, from Patrin's account, what relates to the ichthyolites of the gypſum quarries of Aix, in Provence, which are not leſs remarkable than thoſe of Veſtena and of Oeningen. The ſtrata that are open to view in deſcending by 110 ſteps, into the interior of the mountain at Aix, are ſeven in number: 1. A kind of marle-ſlate, called *argile feuilletée* by the miners: it is of a browniſh-yellow colour, and when immerſed in water, ſeparates into very delicate layers. 2. The white ſtone (*pierre blanche*), a chalk like marle, which, when diſſolved in acids, leaves a conſiderable quantity of a browniſh-grey clay. 3. Hard clay (*argile dure*). 4. The black ſtone (*pierre noire*), a variety of marle-ſlate, perfectly like that of N° 1, but full of rhomboidal ſelenite cryſtals. 5. The ſtratum containing the impreſſions of fiſhes; it is a ſchiſtoſe rock of a yellowiſh-grey colour, ſoft, rather ſoiling, diviſible into thin layers, and giving out a ſlightly bituminous ſmell when ſcratched. 6. Bed of gypſum; and 7. A ſtratum of what is called by the quarriers *pierre froide*, a ſubſtance which much reſembles that of N° 3; both are of a greyiſh-white colour, have a nearly conchoidal fracture, adhere but little to the tongue, and feel cold; they both diſſolve with efferveſcence, but leave a great proportion of clay. Lower down the ſame ſucceſſion of ſtrata is continued, but no impreſſions of fiſhes are found in any of them. The fiſhes buried in the ſtratum, below the gypſum, are, according to Darluc, the red ſurmullet (*Mullus barbatus*, L.); the lunated gilt head (*Sparus aurata*, L.); ſea-wolves; the whiting (*Gadus merlangus*, L.); a gurnard (*trigla*), which reſembles, but ſtill appears to be diſtinct from, the *Trigla cataphracta*, a native of the Mediterranean, on the coaſt of Provence. All theſe fiſhes lie flat on their ſides, as a proof that they periſhed on the very ſpot they now occupy. Patrin is of opinion that theſe fiſhes have been ſuffocated by the ſulphureous vapours which, by their combination with lime, have formed the upper ſtratum of gypſum; that, however, at the time when ſimilar emanations formed the older ſtrata of gypſum, the waters of the ocean ſtill covered the high land which encompaſſed this tract, ſo that the fiſhes were enabled to eſcape, and that none were ſuffocated but at a period when, by the diminution of the ſea, this ſame tract of country was become ſurrounded by coaſts that checked the flight of the fiſhes.

A great number of impreſſions of fiſhes are found in the quarries of Oeningen on the right bank of the Rhine. The ſtrata obſerved there below the vegetable mould, which is white and clayey, are, 1. A ſtratum, only one inch thick, of friable and fine-grained ſand-ſtone, compoſed of tranſparent ſharp-edged grains of quartz, cemented by a mixture of clay and lime. 2. A layer of a compact clay, four inches in thickneſs, efferveſcing with acids. 3. A layer, twenty-ſix inches thick, of a ſlaty clay mixed with lime, and ſome bitumen. 4. A layer of one foot in thickneſs, of a yellowiſh-grey calcareous ſchiſtus, intermixed with minute layers of clay, of a dark-grey colour, and containing a ſmall portion of bitumen. 5. A bed, eight feet thick, compoſed of clay ſlate, diviſible into fine laminæ, and alternating with ſoft clay, which has no ſlaty ſtructure. 6. The ſlaty rock which contains the impreſſions of fiſhes, and which is called *bonne pierre* by the quarriers. It is compoſed of ſtrata, which together form a thickneſs of twelve feet, and each of them is ſeparated from the upper and lower by ſome earth, impregnated with bitumen. It is eaſily diviſible into laminæ, on which are diſcovered the impreſſions of the fiſh. This ſlaty ſtone is pretty ſoft, although it is as ſonorous as a brick: it adheres to the tongue, and when diſſolved in acids, leaves a conſiderable proportion of clay. Beneath theſe layers, of 12 feet in thickneſs, there are four inches of a ſimilar ſlaty maſs, which, however, contains no impreſſions. Dr. Lavater poſſeſſed a rich collection of ichthyolites of Oeningen, among which he has recognized the following ſpecies: the leſſer lamprey (*Petromyzon fluviatilis*); the common eel (*Muræna anguilla*); the bull-head (*Cottus gobio*); the brill (*Pleuronectus rhombus*); the ſcad (*Scomber trachurus*); the mailed gurnard (*Trigla cataphracta*); the lucerna-gurnard (T. *lucerna*); the thorny leach (*Cobitis tænia*); the leach (C. *barbatula*); the trout (*Salmo fario*); the pike (*Eſox lucius*); the herring (*Clupæa harengus*); the ſhad (C. *aloſa*); the bream (*Cyprinus brama*); the minnow (C. *phaxinus*); the dobule (C. *dobula*); the crucian (C. *caraſſius*); the bordeliere (C. *blica*); the dotted carp (C. *bipunctatus*); the bitterling (C. *amarus*); *Cyprinus liſella*; the round-tailed chub (C. *cephalus*); the loach (C. *rutilus*); griſlæan carp (C. *griſlagine*); the bleak (C. *alburnus*); the dace (C. *leuciſcus*); the tench (C. *tinea*); the naſe (C. *naſus*); the common carp (C. *carpio*); the gudgeon (C. *gobio*).

The Heſſian ichthyolites, particularly thoſe found at Riegelſdorf, in bituminous marle-ſlate, are more particularly remarkable on account of the diſtorted forms exhibited by the fiſhes, with whoſe impreſſions it abounds. This circumſtance, and the great quantity of copper found in that rock, have induced a belief that the death of theſe fiſhes was occaſioned by a ſudden impregnation of the waters with a cupreous ſolution. It is worth obſerving that the more the impreſſions of fiſh abound in any particular part of the ſtrata of marle-ſlate, the richer theſe are found to be in copper ores. Mr. Rieſs has given an account of the ſucceſſion of the fletz ſtrata at Riegelſdorf, which are the following: N 1. Ferruginous clayey mould, from one to two fathoms. N 2. Greyiſh-white limeſtone from 6 - 8 fathoms. N 3. Blue clay, with imbedded fragments of ſelenite cryſtals; 8—10 fathoms. N° 4. Blueiſh limeſtone, called *Rauch-wacke*; 8—9 fathoms. N 5. Grey compact gypſum, traverſed by ferruginous loam; 7—8 fathoms. N 6. Black and grey ſtinkſtone; 1—$1\frac{1}{2}$ fathom. N 7. Sand, ſometimes looſe, ſometimes cemented; 1—$1\frac{1}{2}$ fathom. N° 8. A kind of limeſtone called *Zech-ſtein*, of a greyiſh-brown colour, and ſoft above towards the ſand, but blacker and more compact below; $3\frac{1}{4}$—$3\frac{1}{2}$ fathoms. N° 9. A black ſlaty ſtratum, containing pyrites, and forming the roof of the bituminous marle-ſlate; 18 - 20 inches. N° 10. Black cupiferous bituminous marle-ſlate; 3—8 inches: this is the principal depoſitary of the ichthyolites. N° 11. Gneiſs-like greyiſh-white rock, conſiſting of ſmall rounded quartz pebbles, and ſometimes of fragments of jaſper and mica, cemented by indurated clay; 6—18 fathoms. N° 12. Old red ſandſtone, or the dead rock, being the fundamental rock of theſe fletz ſtrata. From the above it appears that the greater part of the impreſſions of fiſhes, plants, and other ſubjects (among which Mr. Rieſs ſuppoſed to have found the ſkeleton of the hand of a child, but which Blumenbach conſidered as having belonged to a ſpecies of ape), are found in the depth of upwards of forty fathoms. Moſt of the fiſhes occurring there are carps, trouts, pikes, and other ſpecies ſimilar to them, which are now and then accompanied by fiſhes ſuppoſed to be marine. In general the impreſſions are not indiſcriminately mixed, as is the caſe in other places where ichthyolites occur, but each ſpecies is found in diſtinct ſhoals.

The opinion which Mr. Patrin, a celebrated volcaniſt, entertains reſpecting the origin of thoſe vaſt depoſitories of the foſſil remains of fiſhes, ſhould not be left unnoticed in this place. According to him, all circumſtances appear to prove that theſe fiſhes lived in bays and gulfs, at the entrance of which volcanoes were ſituated either in the points that formed the mouth, or in ſome iſland, ſimilar to the volcanic iſland of Iſchia, at the entrance of the gulf of Naples. Under ſuch circumſtances, the ſulphureous and other deleterious vapours which were diſengaged from the ſubmarine baſes of the volcano, at the time of an eruption, muſt have ſuffocated the fiſhes in the gulf, which were prevented from eſcaping through its entrance where thoſe vapours were moſt abundant. The dead bodies of theſe fiſhes, therefore, floated on the ſurface of the water in the gulf, till, enveloped by thoſe ſhowers of aſhes, ſo abundant at the beginning and termination of the eruptions, their ſpecific gravity became greater than that of the water, and they ſunk to the bottom, where they were ultimately buried under a ſtratum formed by the aſhes or other ſubſtances ejected from the volcanoes. In caſes where the gulf had but little depth, at the ſame time that the volcanic ejections were abundant, the fiſhes were enveloped at once, and formed but a ſingle bed, ſuch as may be ſeen in ſome places where ichthyolites occur. Under other circumſtances the eruptions may be ſuppoſed to have been repeated for ſeveral times, in which caſe ſeveral beds containing bodies of fiſhes were depoſited in ſucceſſion, and ſeparated from each other by layers deſtitute of ſuch remains, but nevertheleſs owing their origin to the ſame eruption that cauſed the death of the fiſhes contained in the others.

Theſe events, Mr. Patrin continues, could take place only at a period when the continents were already ſufficiently raiſed or emerged to give exiſtence to gulfs and bays, whoſe ſides, elevated above the ſurface of the water, ſerved as a barrier to the fiſhes; ſince it is evident that theſe, had the preſent ſhores been ſtill covered by the ſea, would have eſcaped in all directions from the effects of the ſuffocating vapours. This hypotheſis, the ſame author thinks, is ſupported by the following circumſtances: 1. It is only in a few places that we find beds filled with foſſil fiſhes; and the appearance of ſuch places beſpeaks the former exiſtence of volcanoes in them. 2. The bodies of theſe fiſhes are in perfect preſervation, diſpoſed with great regularity, often even united in tribes; which proves their having been ſuddenly deſtroyed and buried under the ſtratum which now covers them. 3. They are not unfrequently ſeen in variouſly contorted ſhapes; as a proof that their death was attended with convulſive motions. 4. Theſe foſſil remains of fiſhes are found only in ſtrata of very recent origin; whereas, had they been preſerved under ordinary circumſtances, like ſhells and zoophytes, they would be found in a variety of localities, and in ſtrata of much leſs recent formation than thoſe in which they now occur.

ICHTHYOLOGISTS, authors who have written concerning fiſhes. The authors who have left us treatiſes on this ſubject are very numerous; and are ranged by Artedi into their ſeveral proper claſſes, with great care and candour.

The ſyſtematical ichthyologiſts are Ariſtotle, Pliny, Iſidore, Albertus Magnus, Gaza, the interpreter of Ariſtotle, Marſchall, Wootton, Bellonius, Rondeletius, Salvian, Geſner, Aldrovand, Johnſton, Charlton, Willughby, Ray, Artedi, and Linnæus.

The ichthyologiſts who have written of the fiſhes only of ſome particular places, are theſe: Ovid, of the fiſhes of the Euxine; Oppian, of thoſe of the Adriatic; Auſonius, of thoſe of the Moſelle; Mangolt, of thoſe of the Podamic lake; Paulus Jovius, of thoſe of the Tyrrhene ſea; Bened.

Jovius, of thoſe of the lake Larius; Petrus Gillius, of thoſe of the Maſſilian ſea; Figulus, of thoſe of the Moſelle; Salvian, of thoſe of the Tyrrhene ſea; Schwenkfeldt, of thoſe of Sileſia; Schonefeldt, of thoſe of Hamburgh; Margrave, of the Braſilian fiſhes; Ruyſel, of thoſe of Amboyna; and Francis Valentine, of thoſe of the ſame place. Of theſe authors, Ovid, Auſonius, Oppian, and Bened. Jovius, wrote in verſe, the reſt in proſe.

The ichthyologiſts, who have copied all they have written from the works of other writers, and therefore leaſt deſerve the name, are the following: Pliny, Ælian, Athæneus, Iſidore, the author of the "Libri De Natura Rerum," Albertus Magnus, Johannes Cuba, Marſchall, Geſner in great part, Aldrovand in great part, Johnſton, Charlton, and perhaps ſome others.

In regard to method, ſome have written of fiſhes without any method at all; ſome have treated of them in the alphabetical order of their names, and ſome have followed a method more or leſs perfect throughout their works.

Thoſe ichthyologiſts who have attended to no method at all, are Ovid, Ælian, Athæneus, Auſonius, Hildegarde, De Pinguia, Paulus, and Bened. Jovius, Figulus, Salvian in his "Hiſtory of the Roman Fiſhes," and Ruyſch.

Thoſe who have written alphabetically, are Cuba, Marſchall, Salvian in his "Tabula Piſcatoria," Geſner, Schonefeldt, Johnſton.

Among the authors who have uſed ſome ſort of method, thoſe come firſt who have treated of fiſhes according to the places where they are uſually caught. Of theſe are Oppian, Rondeletius, Aldrovand, Johnſton, and Charlton.

Thoſe who have treated of fiſhes, according to the general diviſion of them into cetaceous, ſpinoſe, and cartilaginous, are Ariſtotle, who was author of the method, Wootton, Willughby, Ray; the laſt two authors have added to this the numbering the rays of the fins on the back, which is one ſtep towards the Artedian method.

The principal and beſt authors in this ſtudy, and who have reformed and amended it, are Ariſtotle, Bellonius, Rondeletius, Salvian, Geſner, Willughby, and Ray. To theſe are to be added ſuch as have deſcribed only new or particular fiſhes, who have merited greatly of the world by the new lights they have thrown in upon this part of natural hiſtory. Theſe are Paulus Jovius, Petrus Gillius, Schonefeldt, Sibbald, Marſigli, Hebenſtreit, and our countryman Mark Cateſby: all the reſt, except Pliny, Athæneus, Aldrovand, and Johnſton, are of no uſe or value. Willughby is allowed by Artedi to be by far the beſt author on the ſubject; but the world will now give that character to Artedi himſelf. Artedi, De Script. Ichthyol.

ICHTHYOLOGY, in *Natural Hiſtory*, the ſcience of fiſhes. See PISCES.

ICHTHYOMANTIA, Ιχθυομαντεια, in *Antiquity*, a ſpecies of divination by means of the entrails of fiſhes.

ICHTHYOMORPHUS, in *Natural Hiſtory*, is the name which Aldrovandus gave to the flattened foſſil fiſh, found at Iſleb in Germany. Similar foſſils are found at Oſterode in Brunſwick, near Eiſlebe, in Mansfield county, and other places in Germany. Jones's Phyſ. Diſq. p. 410.

ICHTHYOPHAGI, Ιχθυοφαγοι, compounded of ιχθυς, *fiſh*, and φαγειν, *to eat*, *fiſh-eaters*, a name given to a people, or rather to ſeveral different people, who lived wholly on fiſh.

The Ichthyophagi, ſpoken of by Ptolemy, are placed towards China. Agatharchides calls all the inhabitants between Carmania and Gedroſia by the name of Ichthyophagi. Pauſanias places them near the Red ſea, and Pliny peoples ſeveral iſles with them to the eaſt of Arabia Felix.

From the accounts given us of the Ichthyophagi by Herodotus, Strabo, Solinus, Plutarch, &c. it appears, indeed, that they had cattle, but that they made no uſe of them, excepting, as they ſay, to feed their fiſh. They made their houſes of large fiſh-bones, the ribs of whales ſerving them for their beams. The jaws of theſe animals ſerved them for doors; and the mortars wherein they pounded their fiſh, and baked it in the ſun, were nothing elſe but their vertebræ.

ICHTHYOPHTHALMITE; *Zeolite of Helleſta*, Rinmann; *Ichthyophthalme*, d'Andrada; *Fiſchaugen-ſtein*, Wern.; *Apophyllite*, Haüy.

A rare mineral ſubſtance, which, on account of one of its chemical characters, has been conſidered as zeolite by ſome mineralogiſts; while one of its external characters, *viz.* the pearly luſtre, has induced others to claſs it with adularia-feldſpar. A cloſer examination has proved this mineral to conſtitute a diſtinct ſpecies.

D'Andrada has given the above appellation to this mineral, on account of its exhibiting a ſimilar reflection to that of the adularia or moon-ſtone, ſometimes called *œil de poiſſon*, of which the German *fiſchaugen-ſtein* is a tranſlation. Haüy's name is derived from the property this ſubſtance has of exfoliating under certain circumſtances.

The colour of the ichthyophthalmite is white, generally ſlightly tinged with red, grey, and blue, ſeldom with yellow and green.

It occurs maſſive and cryſtallized. The primitive form of its cryſtals is, according to Haüy, a four-ſided priſm with rectangular baſe. The ſimpleſt of the ſecondary forms is the primitive parallelopipedon, with its eight ſolid angles intercepted each by a triangular plane; the *Apophyllite épointé* of Haüy.

Another, but very complicated, variety of 48 planes, determined from an incomplete cryſtal of only ten remaining planes, is characterized and figured, (Journ. des Min. vol. 23, 5. f. 3, 4.) by Haüy, who calls it *Apophyllite ſurcompoſé*.

None of the modifications of the cryſtals have hitherto been found in a complete ſtate; moſt frequently they occur as thick tables, grown together in all directions, or interſecting each other, and reſembling at firſt ſight a variety of tabular barytes. They are ſplendent, and generally exhibit more or leſs the luſtre of mother-of-pearl; in the manner of a variety of ſtilbite.

The fracture, parallel to two of the planes of the primitive parallelopipedon, is foliated, with ſplendent often irideſcent ſurface; croſs-fracture uneven with vitreous luſtre.

In ſmall fragments it is generally perfectly tranſparent, but often rendered tranſlucid only, and even nearly opaque, by a cloudy or milky ſuffuſion. Refraction ſimple.

It is eaſily frangible. Its hardneſs is nearly that of fluor ſpar. A ſmall fragment, when rubbed on a hard body, according to Haüy, ſeparates into thin leaves; this property is, however, not obſervable in all ſpecimens.

Its ſpecific gravity, according to Vauquelin and Fourcroy, is 2.467.

Before the blow-pipe the ichthyophthalmite becomes at firſt opaque, and melts, without difficulty, into a very white opaque globule. With nitric or muriatic acid it becomes ſoftened, and forms a jelly, like zeolite. This property appears to be owing to the preſence of water, which facilitates the action of the acids on thoſe conſtituent parts of the ſubſtance with which they can unite.

Analyſes of the Ichthyophthalmite.

	Rinmann.	Fourcroy and Vauquelin.	Roſe.
Silica	55.00	51.00	55.00
Lime	27.00	28.00	25.00
Magneſia	0.50		
Potaſſa		4.00	2.25
Alumine	2.50		
Water	17.00	17.00	15.00
Loſs			2.75
	102.00	100.00	100.00

This ſubſtance, therefore, differs eſſentially from zeolite, in not containing the leaſt portion of alumine; the variety from Helleſta has, indeed, afforded a ſmall quantity to Mr. Rinmann, but this appears to be accidental. A ſmall quantity of oxyd of iron found in this ſubſtance may likewiſe be conſidered as accidental.

This mineral is found in the iron-mines of Uto, in Sudermania, a province of Sweden.

ICHTHYOSIS, in *Medicine*, *fiſh-ſkin diſeaſe*, from ἰχθὺς, *a fiſh*, a denomination appropriately uſed by Dr. Willan to deſignate "a permanently harſh, dry, ſcaly, and in ſome caſes, almoſt horny texture of the integuments of the body, unconnected with internal diſorder," bearing a conſiderable reſemblance to the ſkin of the ſcaly fiſhes.

This rare ſpecies of cutaneous diſeaſe conſtitutes the fourth genus of the ſecond Order, (or *ſcaly* eruptions,) in Dr. Willan's arrangement, and is diſtinguiſhed from the other eruptions, included in the ſame Order, the *Lepra* and *Pſoriaſis*, in being generally diffuſed over the limb affected, and in the permanency of its ſcales; for in the other ſcaly eruptions alluded to, the diffuſion is partial, or in diſtinct patches, and the ſcales are deciduous. See LEPROSY and PSORIASIS.

The arrangement and diſtribution of the ſcales in ichthyoſis are, indeed, peculiar. Above and below the *olecranon* on the arm, and in a ſimilar ſituation with reſpect to the *patella* on the thigh and leg, they are ſmall, rounded, prominent, or papillary, and of a black colour. Some of the ſcaly *papillæ* have a ſhort narrow neck, and broad irregular tops. On ſome parts of the extremities, and on the trunk of the body, the ſcales are flat and large, often placed like tiling, or in the ſame order as ſcales on the back of a fiſh; but in a few caſes they have appeared ſeparate, being interſected by whitiſh furrows. There is uſually in this complaint a dryneſs and roughneſs of the ſoles of the feet; ſometimes a thickened and brittle ſtate of the ſkin in the palms of the hands, with large painful fiſſures, and on the face an appearance of ſcurf rather than of ſcales. The inner part of the wriſts, the hams, the inſide of the elbows, the furrow along the ſpine, the inner and upper parts of the thighs, are perhaps the only portions of the ſkin always exempt from ſcalineſs. Patients affected with ichthyoſis are occaſionally much haraſſed with inflamed puſtules, or with large painful biles on different parts of the body; it is alſo remarkable, that they never ſeem to have the leaſt perſpiration or moiſture of the ſkin.

The *cauſes* of ichthyoſis ſeem to be altogether unknown. The diſeaſe did not, in any caſe witneſſed by Dr. Willan, appear to have been tranſmitted hereditarily; nor was more than one child from the ſame parents affected with it. In ſeveral inſtances it was ſaid to have been connate, and in others to have occurred two or three months after birth; in one caſe it appeared ſoon after the ſmall-pox, at the age of two years, and had continued ſix or ſeven years, without alteration. A ſtate of ſkin, ſimilar to that in ichthyoſis, takes place partially under a variety of circumſtances. It occurs on the limbs of perſons who, from long continued ill health, or a weakly conſtitution, are much emaciated, and have little perſpiration. When inveterate ulcers on the lower extremities are at length healed, the common integuments are not replaced in their uſual order: inſtead of cuticle, the legs are covered with thick, dry, ſhining ſcales, variouſly diſpoſed. In caſes of anaſarca, likewiſe, the ſkin becomes ſcaly, rigid, and inelaſtic. This rugged coating prevents for a time any farther enlargement of the limbs; but the effuſed lymph, by its gradually increaſing preſſure, at laſt overcomes the reſiſtance, and is diſcharged through innumerable crevices.

According to Buffon, the inhabitants of Paraguay are much affected with the ichthyoſis, or a complaint much reſembling it. "Il regne parmi eux une maladie extraordinaire; c'eſt une eſpèce de lèpre qui leur couvre tout le corps, et y forme une croute ſemblable à des écailles de poiſſon; cette incommodité ne leur cauſe aucune douleur, ni même aucun autre derangement dans la ſanté." (Hiſt. Naturelle, tom. iii. p. 507.) Some obſervations on a diſeaſed ſtate of the ſkin, analogous to the ichthyoſis above deſcribed, appear in the Philoſophical Tranſactions, vol. xiv. N° 160; and a ſtriking inſtance of the ſame, though ſomewhat differently modified, is inſerted in the ſame collection, N° 424, the ſequel of which is given in vol. xlix. (part i. for the year 1755.) See alſo a caſe ſlightly detailed by Panarolus (Pentecoſte, v. obſ. 9.), and another related by Stalpart Vander Wiel, obſ. 35. cent. ii.

With reſpect to the cure, little more ſeems to be known than of the cauſes of this eruption. Dr. Willan merely obſerves, that, when a portion of the hard ſcaly coating is removed, it is not ſoon produced again. The eaſieſt mode, he ſays, of removing the ſcales, is to pick them off carefully, with the nails, from any part of the body while it is immerſed in hot water. The layer of cuticle, which remains after this operation, is harſh and dry; and the ſkin did not, in the caſes attended by him, recover its uſual texture and ſoftneſs; but the ſcales were prevented from forming afterwards, by the repeated uſe of the warm bath, along with moderate friction.

The diſeaſe above deſcribed is the *Ichthyoſis ſimplex* in Dr. Willan's nomenclature; but he deſcribes another ſpecies, which he terms *I. cornea*. This, which he has never ſeen, is mentioned by authors as "a horny rigidity of the integuments, impeding the motion of the muſcles and joints;" and as affecting the lips, prepuce, toes, fingers, &c.; and ſometimes as extended over the whole body. A ſingular caſe of the latter deſcription is recorded in the Philoſ. Tranſ. vol. xlviii. part ii. p. 580. This form of ichthyoſis, Dr. Willan remarks, is ſometimes attended with the production of *horns;* a proof that thoſe ſingular excreſcences may be cutaneous, or perhaps cuticular, and generated in nearly the ſame manner as the nails from the human body, or the hoofs and claws of quadrupeds. An account of a girl, whoſe body was nearly covered with horny excreſcences, is given in the Phil. Tranſ. N° 176. And a horn, ſimilar to thoſe here deſcribed, together with a portrait of the woman on whom it grew, is preſerved in the Britiſh Muſeum. See Willan on Cutan. Diſ. order ii. p. 197, et ſeq.

ICHTHYOSPENDYLA, in *Natural Hiſtory*, is the name by which Mr. Lhuyd denominates the vertebræ, or joints of the back bones of fiſhes. Lithophyl. tab. 18.

ICHTHYPERIA, the name given by Dr. Hill to the bony palates of fiſhes, which are frequently found foſſil at great depths in the earth, and uſually immerſed in the ſtrata of ſtone; and in this ſtate had been named by Mr. Lhuyd, from their reſemblance in ſhape to the pods of lupines, and ſome of the other leguminous plants, *ſiliquaſtra*.

Many from this name, and this caſual reſemblance to the pods of plants, have been miſled into the believing them foſſils of vegetable origin. But they have plainly all of them been the bony coverings of different parts of the mouths of certain fiſh of the cartilaginous, and perhaps other kinds, whoſe principal food being ſhell-fiſh, theſe bony palates were neceſſary to the eating of them. Many of the ichthyperia are found indeed plainly worn and rounded by uſe.

They are ſometimes found in their foſſil ſtate joined to one another; but commonly in ſingle pieces or joints, or in fragments of ſuch. They are of the ſame ſubſtance with the bufonitæ, and their ſhape depends on the ſpecies of fiſh, or part of the mouth, to which they belonged. But their moſt uſual figure is that of half the ſhell of the pod of a lupine. Their ſizes are various, from the tenth of an inch to two inches in length, and an inch in breadth. Their ſurface is ſometimes ſmooth and poliſhed; ſometimes finely ſtriated or ſinuated, and ſometimes wholly covered with tubercles. They are alſo found of very different colours; but moſt frequently either black, or of a dark cheſnut colour.

They are found lodged and bedded in the ſtrata of ſtone, in Germany, Italy, and France, and in the iſlands of the Archipelago, and in Syria among the ſpines of the echini; but they are nowhere ſo frequent as in England, there being with us very few quarries of ſtone which do not afford more or leſs of them. Hill's Hiſt. of Foſſils, p. 645.

ICHTHYS, Ιχθυς, in *Antiquity*, a famous acroſtic of the Erythræan ſibyl, mentioned by Euſebius and St. Auſtin; the firſt words of every verſe of which made up Ιησους Χριστὸς Θεȣ̃ ὑιὸς σωτηρ, *Jeſus Chriſtus Dei filius, ſervator*, the initial letters of which compoſe the word ichthys, ιχθυς.

Ichthys, in *Ancient Geography*, a promontory of the Peloponneſus. Ptolemy.

ICICA, in *Botany*, Aublet. Guian. t. 130—135. See Amyris.

Icica, in the *Materia Medica*, a name given by ſome to the gum elemi.

ICICARIBA, in *Botany*, a name uſed by ſome authors for the tree which affords us the gum elemi, uſed in medicine.

ICOCA, the name of a genus of plants, deſcribed by Plumier; ſince called by Linnæus *chryſobalanus*.

ICOLM-KILL, in *Geography*. See Iona.

ICON, in *Natural Hiſtory*, ſignifies a figure, cut, or engraving, of any ſubject in natural hiſtory.

Icon, Εικων, in *Rhetoric*, the ſame with image.

ICONIUM, in *Ancient Geography*, a town of Cappadocia, in the department of Lycaonia. In the time of Xenophon it belonged to Phrygia. This town ſtill ſubſiſts under the name of Konieh, or Cogni.

ICONOCLASTS, or Iconoclastæ, formed from εικων, *image*, and κλαειν, *to break*, in *Eccleſiaſtical Hiſtory*, breakers of images; a name which the church of Rome gives to all who reject the uſe of images in religious matters.

In this ſenſe, not only the reformed, but ſome of the eaſtern churches, are called iconoclaſts, and are all eſteemed by them heretics, as oppoſing the worſhip of the images of God, and the ſaints, and breaking their figures and repreſentations in churches.

The oppoſition to images began in Greece under the reign of Bardanes, who was created emperor of the Greeks a little after the commencement of the eighth century when the worſhip of them became common. (See Image.) But the tumults occaſioned by it were quelled by a revolution, which, in 713, deprived Bardanes of the imperial throne. The diſpute, however, broke out with redoubled fury under Leo the Iſaurian, who iſſued an edict in the year 726, abrogating, as ſome ſay, the worſhip of images, and ordering all the images, except that of Chriſt's crucifixion, to be removed out of the churches; but according to others, this edict only prohibited the paying to them any kind of adoration or worſhip. This edict occaſioned a civil war, which broke out in the iſlands of the Archipelago, and, by the ſuggeſtions of the prieſts and monks, ravaged a part of Aſia, and afterwards reached Italy. The civil commotions and inſurrections in Italy were chiefly promoted by the Roman pontiffs, Gregory I. and II. Leo was excommunicated, and his ſubjects, in the Italian provinces, violated their allegiance, and riſing in arms, either maſſacred or baniſhed all the emperor's deputies and officers. In conſequence of theſe proceedings, Leo aſſembled a council at Conſtantinople in 730, which degraded Germanus, the biſhop of that city, who was a patron of images; and he ordered all the images to be publicly burnt, and inflicted a variety of ſevere puniſhments upon ſuch as were attached to that idolatrous worſhip. Hence aroſe two factions; one of which adopted the adoration and worſhip of images, and on that account called iconoduli or iconolatræ; and the other maintained that ſuch worſhip was unlawful, and that nothing was more worthy the zeal of Chriſtians than to demoliſh and deſtroy thoſe ſtatues and pictures, which were the occaſions of this groſs idolatry; and hence they were diſtinguiſhed by the titles of *iconomachi*, from εικων, *image*, and μαχω, *I contend*, and *iconoclaſtæ*. The zeal of Gregory II. in favour of image-worſhip, was not only imitated, but even ſurpaſſed by his ſucceſſor Gregory III. in conſequence of which the Italian provinces were torn from the Grecian empire.

Conſtantine, called Copronymus, from κοπρος, *ſtercus*, and ονομα, *name*, becauſe he was ſaid to have defiled the ſacred font at his baptiſm, ſucceeded his father Leo in 741, and in 754 convened a council at Conſtantinople, regarded by the Greeks as the ſeventh œcumenical council, which ſolemnly condemned the worſhip and uſe of images. Thoſe who, notwithſtanding this decree of the council, raiſed commotions in the ſtate, were ſeverely puniſhed; and new laws were enacted, to ſet bounds to the violence of monaſtic rage. Leo IV. who was declared emperor in 775, purſued the ſame meaſures, and had recourſe to the coercive influence of penal laws, in order to extirpate idolatry out of the Chriſtian church. Irene, the wife of Leo, poiſoned her huſband in 780; aſſumed the reigns of empire during the minority of her ſon Conſtantine, and in 786 ſummoned a council at Nice in Bithynia, known by the name of the ſecond Nicene council, which abrogated the laws and decrees againſt the new idolatry, reſtored the worſhip of images and of the croſs, and denounced ſevere puniſhment againſt thoſe who maintained that God was the only object of religious adoration. In this conteſt, the Britons, Germans, and Gauls, were of opinion, that images might be lawfully continued in churches, but they conſidered the worſhip of them as highly injurious and offenſive to the Supreme Being. Charlemagne diſtinguiſhed himſelf as a mediator in this controverſy: he ordered four books concerning images to be compoſed, refuting the reaſons urged by the Nicene biſhops to juſtify the worſhip of images, which he ſent to Adrian, the Roman pontiff, in 790, in order to engage him to withdraw his approbation of the decrees of the laſt council of Nice. Adrian wrote an anſwer; and in 794, a council of three hundred biſhops, aſſembled by Charlemagne at Francfort on the Maine, confirmed the opinion contained in the four books, and ſolemnly condemned the worſhip of images. In the Greek church, after the baniſhment of Irene, the controverſy concerning images broke out anew, and was carried on by the contending parties, during the half of the ninth century, with various and uncertain ſucceſs. The emperor Nicephorus appears, upon the whole, to have been an enemy to this idolatrous worſhip. His ſucceſſor, Michael Curopalates, ſurnamed Rhangabe, patronized and encouraged it. But the ſcene changed on the acceſſion of Leo the Arminian to the empire; who aſſembled a council at Conſtantinople in 814, that aboliſhed the decrees of the Nicene council. His ſucceſſor Michael, ſurnamed Balbus, diſapproved the worſhip of images, and his ſon Theophilus treated them with great ſeverity. However, the empreſs Theodora, after his death, and during the minority of her ſon, aſſembled a council at Conſtantinople in 842, which reinſtated the decrees of the ſecond Nicene council, and encouraged image worſhip by a law. The council held at the ſame place under Photius, in 879, and reckoned by the Greeks the eighth general council, confirmed and renewed the Nicene decrees. In commemoration of this council, a feſtival was inſtituted by the ſuperſtitious Greeks, called the Feaſt of Orthodoxy. The Latins were generally of opinion, that images might be ſuffered as the means of aiding the memory of the faithful, and of calling to their remembrance the pious exploits and virtuous actions of the perſons whom they repreſented; but they deteſted all thoughts of paying them the leaſt marks of religious homage or adoration. The council of Paris, aſſembled in 824 by Lewis the Meek, reſolved to allow the uſe of images in the churches, but ſeverely prohibited rendering them religious worſhip. Neverthele ſs, towards the concluſion of this century, the Gallican clergy began to pay a kind of religious homage to the images of ſaints, and their example was followed by the Germans, and other nations. However, the iconoclaſts ſtill had their adherents among the Latins; the moſt eminent of whom was Claudius, biſhop of Turin, who, in 823, ordered all images, and even the croſs, to be caſt out of the churches, and committed to the flames; and he wrote a treatiſe, in which he declared both againſt the uſe and worſhip of them. He condemned relics, pilgrimages to the Holy Land, and all voyages to the tombs of ſaints; and to his writings and labours it was owing, that the city of Turin, and the adjacent country, was, for a long time after his death, much leſs infected with ſuperſtition than the other parts of Europe. The controverſy concerning the ſanctity of images was again revived by Leo, biſhop of Chalcedon, in the eleventh century, on occaſion of the emperor Alexius's converting the figures of ſilver, that adorned the portals of the churches, into money, in order to ſupply the exigencies of the ſtate. The biſhop obſtinately maintained, that he had been guilty of ſacrilege; and publiſhed a treatiſe, in which he affirmed, that in theſe images there reſided an inherent ſanctity, and that the adoration of Chriſtians ought not to be confined to the perſons repreſented by theſe images, but extended to the images themſelves. The emperor aſſembled a council at Conſtantinople, which determined, that the images of Chriſt and of the ſaints were to be honoured only with a relative worſhip; and that invocation and worſhip were to be addreſſed to the ſaints only as the ſervants of Chriſt, and on account of their relation to him, as their maſter. Leo, diſſatisfied even with theſe abſurd and ſuperſtitious deciſions, was ſent into baniſhment. In the weſtern church, the worſhip of images was diſapproved and oppoſed by ſeveral conſiderable parties, as the Petrobruſſians, Albigenſes, Waldenſes, &c. till at length this idolatrous practice was entirely aboliſhed in many parts of the Chriſtian world by the Reformation. Moſheim's Eccl. Hiſt. vol. ii. See Image.

ICONOGRAPHIA, Εικονογραφια, derived from εικων, *image*, and γραφω, *I deſcribe*, the deſcription of images, or ancient ſtatues of marble and copper; alſo of buſts and ſemi-buſts, penates, paintings in freſco, moſaic works, and ancient pieces of miniature.

ICONOLATRÆ, or Iconolaters, from εικων, and λατρευω, *I worſhip*; or *Iconoduli*, from εικων and δουλοω, *I ſerve*, thoſe who worſhip images; a name which the iconoclaſtes give to thoſe of the Romiſh communion on account of their adoring images, and of rendering to them the worſhip only due to God. See Iconoclasts, and Image.

ICONOLOGIA, formed from εικων and λεγω, *I ſpeak*, the interpretation of ancient images, monuments, and emblems.

ICONOMACHI. See Iconoclasts.

ICOSAHEDRON, in *Geometry*, a regular body, or ſolid, terminated by twenty equilateral and equal angles.

The icoſahedron may be conſidered as conſiſting of twenty triangular pyramids, whoſe vertices meet in the centre of a ſphere, imagined to circumſcribe it; and, therefore, they all have their heights and baſes equal; wherefore the ſolidity of one of thoſe pyramids, multiplied by 20, the number of baſes, gives the ſolid content of the icoſahedron. See Regular *Body*.

ICOSANDRIA, in *Botany*, from εικοσι, *twenty*, and ανηρ, *a man*, is the 12th claſs of the artificial ſyſtem of Linnæus, diſtinguiſhed by having numerous ſtamens, about 20, or more, inſerted into the calyx, not into the receptacle. Such an inſertion is juſtly pointed out by Linnæus as an infallible mark that the pulpy fruit of the flowers ſo conſtructed may always be eaten in ſafety. This rule holds good, whatever the number of the ſtamens may be; as in the fifth claſs, where, amongſt many plants with poiſonous or unwholeſome berries, whoſe ſtamens are differently inſerted, is found the *Ribes*, or Currant and Gooſeberry, whoſe ſalutary fruit is indicated by the ſtamens growing out of the rim of the calyx, exactly as in the claſs *Icoſandria*. At the ſame time, the foliage or herbage of ſuch plants is always, more or leſs, to be miſtruſted, being acrid, nauſeous, or eminently dangerous; witneſs the *Prunus Lauro-ceraſus*, or Cherry-laurel, whoſe eſſential oil, and even its diſtilled water, is one of the moſt potent of vegetable poiſons. This dangerous quality reſides in the oil of a bitter-almond flavour, obſervable in moſt of this tribe, which is rendered leſs injurious perhaps in the kernels of peaches and apricots, by the mild oil of their cotyledons, and always taken by us in too ſmall a quantity to be materially hurtful. It is further remarkable, that as Icoſandrous plants, when dried, are peculiarly ſubject to the depredations of inſects, the ſame is the caſe with all the genus *Ribes*.

The orders of the *Icoſandria* are diſtinguiſhed by the number of their ſtyles. The firſt, *Monogynia*, contains the valuable genus *Prunus*, and its near ally *Amygdalus*, compoſed of ſome of our fineſt fruits; with *Myrtus*, &c. The *Digynia*, *Trigynia*, and *Pentagynia* of Linnæus are ſo nearly a-kin, and ſo inconſtant in the ſame genus, if not ſpecies, that it is found moſt commodious to unite them under the laſt denomination, as the number five moſt prevails. *Polygynia*, whoſe ſtyles are more than five, is a numerous and very natural order, containing *Roſa*, *Rubus*, *Fragaria*, *Potentilla*, &c. to which the *Sibbaldia* naturally belongs, though, having uſually but five ſtamens, it is placed in the claſs *Pentandria*.

Icosandria is alſo the name of an order in the claſſes *Polyadelphia*, *Monoecia*, and *Dioecia*, whoſe character ought chiefly to depend on the inſertion, rather than the preciſe number of its ſtamens. To this circumſtance Linnæus did not ſufficiently advert, when he referred *Citrus* to *Polyadelphia Icoſandria*, inſtead of the orders *Dodecandria* or *Polyandria* of that claſs, and on the other hand, excluded *Melaleuca*, which is truly icoſandrous, being of the natural family of *Myrti*. S.

ICOSIUM, Alger, in *Ancient Geography*, a town of Afriea, on the eaſtern part of Mauritania Cæſarienſis. Ptolemy mentions it, and the Itinerary places it 47 miles E. of Tipaſa. Pliny ſays that Veſpaſian gave it the title of a Latin city.

ICTERUS, ἴκτερος, in *Medicine*, alſo *icteritia*, words from the Greek, ſignifying *Jaundice*, which ſee. Whence alſo the adjective *icteric*: thus we ſay *icteric* ſymptoms, *icteric* medicines; meaning the ſymptoms of jaundice; medicines proper for the cure of jaundice, &c.

Icterus, in *Ornithology*, a ſpecies of *Oriolus*, which ſee. For other ſpecies ſee the ſame article. See alſo Todus *paradiſæus*, Sturnus *contra*, and Muscicapa *paradiſi*.

Icterus *Lapis*, in *Natural Hiſtory*, a name given by the ancients to a ſtone famous for the cure of the jaundice. Pliny deſcribes four ſpecies of this ſtone. But theſe deſcriptions are ſo ſhort, that we cannot determine from them which of the ſtones of thoſe known at preſent were intended.

ICTIAR, in the *Eaſtern Military Orders*, an officer who has gone through all the degrees or poſts in his reſpective body; and has a right to be a member of the divan.

ICUS, in *Ancient Geography*, an iſland of the Archipelago, and one of the Cyclades, near Eubœa, over-againſt Magneſia.

ICY Cape, in *Geography*, a point of land on the N.W. coaſt of America, much incumbered with ice. N. lat. 70° 29'. W. long. 198° 20'.

IDA, in *Ancient Geography*, a common name of ſeveral mountains of conſiderable elevation, celebrated among the ancients. The name is derived from εἴδω, *I ſee*, and applied to them on account of the extenſive proſpect they afforded. The principal are the two following, *viz*. Ida, mentioned by Homer, and ſaid to be the mountain on which Paris decided the prize of beauty between Juno, Minerva, and Venus. It was ſituated in Dardania, at ſome diſtance S.E. of Troy. Here were found the ſources of the rivers Simöis, Xanthe, &c. This mountain, however, is in reality a chain of mountains, of which the principal part lay to the E. and near the ſcite of Troy. Thence it extended to the N.W., W., and S.W., as far as the ſea, projecting on four promontories, towards Cyzicum, Antandros, the gulf of Adramyttium, and the promontory of Lectum. Homer, therefore, ſpeaks of the Idæan mounts. This mountain in its whole extent is a great reſervoir of water, and ſupplied the rivers Æſopus and Granieus, which diſcharged themſelves into the Propontide; the Simois and Scamander, or Xanthus, which ran into the Helleſpont; and the Samoies and Ciloe, which paſſed into the gulf of Adramyttium. The other Ida is a mountain of Crete, which ſtill retains the name, though it is ſometimes called Puloriti, and which has been much celebrated by the poets. It is much the higheſt mountain in the iſland, though in other reſpects inferior; it is for the greateſt part of the year covered with ſnow, and ſo barren that it produces nothing but the tragacanth. Jupiter is ſaid to have been ſecretly nurſed on this mountain, and on this account called Idæus.

Ida, in *Geography*, a mountain of the iſland of Crete, which riſes in the form of a pyramid S. W. of Candia, and ſerves as a land-mark to navigators, who wiſh to anchor in the harbour of that town. This mountain is covered with ſnow almoſt all the year.

IDAAN. See Maroot.

IDACIUS, in *Biography*, an ancient chronicler, was a native of Lamego, in Spain, and flouriſhed in the fifth century. He wrote a chronicle commencing with the firſt year of the reign of Theodoſius, and ending with the eleventh of that of Leo, A. D. 467. To him is attributed a table of Faſti Conſulares, frequently publiſhed. The Chronicle and Faſti were publiſhed with notes by father Sirmond, at Paris, in 1619.

IDÆI Dactyli, in *Ancient Geography*. See Dactyli.

IDANHA *a Velha*, in *Geography*, a town of Portugal, in the province of Beira, near the Spaniſh Eſtremadura. N. lat. 39° 50'. W. long. 6° 48'.

IDEA, Ἰδέα, the image or reſemblance of a thing, which, though not ſeen, is conceived by the mind. See Image.

The word is Greek; Cieero renders it into Latin by *exemplar*, and *exemplum*; and Plato himſelf, in ſome places by παράδειγμα. Cieero, in his Topics, alſo expreſſes it by *forma* and *ſpecies*.

Idea, in *Phyſiology*, denotes the immediate object of the mind about which we are employed, when we perceive or think of any thing; and this definition of Mr. Locke's is much leſs exceptionable than that of ſome other logicians, who define an idea to be a pattern or copy of a thing in the mind.

Thus, when we look at the ſun, we do not ſee that luminary itſelf, but its image, or appearance conveyed to the ſoul by the organ of ſight; and this image we call idea. See Impression and Perception.

The origin of ideas has been a long time diſputed among philoſophers. Ariſtotle and the Peripatetics maintained that external objects emit ſpecies, images, or forms, which reſemble them all around; and that theſe ſpecies, ſtriking on our ſenſes, are by them tranſmitted to the underſtanding and impreſſed upon it; and that being material and ſenſible, they are rendered intelligible by the active intellect; and are at length received by the paſſive. The followers of Demoeritus and Epicurus held an opinion, with regard to ſlender films of ſubtile matter coming from external objects, ſimilar to that of Ariſtotle with reſpect to his immaterial ſpecies or forms. Others are of opinion, that our ſouls have of themſelves the power of producing ideas of things we would think upon; and that they are excited to produce them by the impreſſions which objects make on the body, though theſe impreſſions are not images in any reſpect like the objects that occaſioned them. And in this, ſay they, it is, that man is made after the image of God, and that he partakes of his power; for as God made all things out of nothing, and can reduce them to nothing when he pleaſes, ſo man can create as many ideas as he pleaſes, and annihilate them when he has done.

Others maintain, that the mind has no occaſion for any thing beſide itſelf to perceive objects; and that, by conſidering itſelf, and its own perfections, it is able to diſcover all things that are without. Whilſt Ariſtotle thought that every object of human underſtanding enters at firſt by the ſenſes. Plato, on the other hand, had a very mean opinion of all the knowledge we acquire by the ſenſes. According to him all ſcience muſt be employed about theſe eternal and immutable ideas, which exiſted before the objects of ſenſe, and are not liable to any change. In this reſpect theſe two philoſophers eſſentially differed; the notion of eternal and immutable ideas, which Plato borrowed from the Pythagorean ſchool, was totally rejected by Ariſtotle, who maintained it as a maxim, that there is nothing in the intellect, which was not at firſt in the ſenſes. It ſeems, however, probable, that the Pythagoreans and Platoniſts agreed with the Peripatetics in their general theory of perception; *viz.* that the objects of ſenſe are perceived only by certain images, or ſhadows of them, let into the mind, as into a "camera obſcura." The notions of the ancients with regard to the ſeat of the ſoul were very various. But ſince it has been diſcovered by the improvements in anatomy, that the nerves are the inſtruments of perception, and of the ſenſations accompanying it, and that the nerves ultimately terminate in the brain, it has been the general opinion of philoſophers that the brain is the ſeat of the ſoul, and that the ſoul perceives the images that are brought there, and external things only by means of them. (See SOUL.) Many philoſophers, ancient and modern, have employed their invention to diſcover, how we are made to perceive external objects by our ſenſes; and in their ſentiments on this ſubject there ſeems to be a very general agreement. Plato conceived, that by our ſenſes we perceived merely the ſhadows of things, and not things themſelves; and his ſhadows may very well repreſent the ſpecies and phantaſms of the Peripatetic ſchool, and the ideas and impreſſions of modern philoſophers. Since the time of Des Cartes, the ſhadows of external objects, called by the ancients ſpecies, forms, and phantaſms, have been commonly denominated "ideas," and by Mr. Hume "impreſſions." But all philoſophers, from Plato to Mr. Hume, agree in this, that we do not perceive external objects immediately, and that the immediate object of perception muſt be ſome image preſent to the mind.

The ideas by which we perceive external objects are ſaid by ſome to be the ideas of the Deity; whilſt it has been more generally thought that every man's ideas are proper to himſelf, and are either in his mind or in his "ſenſorium," where the mind is immediately preſent. The former is the theory of Malebranche. This theory ſeems to have ſome affinity with the Platonic notion of ideas, adopted with ſome modification by the philoſophers of the Alexandrian ſchool, commonly called the latter Platoniſts; but it is not the ſame. It does not appear that either Plato or the latter Platoniſts, or St. Auguſtine, or the Myſtics, who ſeem to have inclined to the tenets of the Alexandrian ſchool, thought that we perceive the objects of ſenſe in the divine ideas. The theory, therefore, is properly the invention of Malebranche himſelf. According to his ſtatement, the ſoul is united with a Being poſſeſſed of all perfection, who has in himſelf the ideas of all created beings. The Deity, then, being always preſent to our minds in a more intimate manner than any other being, may, upon occaſion of the impreſſions made upon our bodies, diſcover to us, as far as he thinks proper, and according to fixed laws, his own ideas of the object; and thus we ſee all things in God, or in the divine ideas. Malebranche, however, diſtinguiſhes more accurately than any philoſopher had done before, the objects which we perceive from the ſenſations in our own minds, which, by the laws of nature, always accompany the perception of the object. Although, he ſays, we ſee all ſenſible and material things in God, yet we have not our ſenſations in him when we perceive any ſenſible object; in our perception are included both a ſenſation and a pure idea. The ſenſation is a modification of the ſoul, and it is cauſed in us by God; but as to the idea, joined with ſenſation, it is in God, and it is in him that we ſee it. The ſyſtem of Malebranche, it is plain, leaves no evidence of the exiſtence of a material world, from what we perceive by our ſenſes; for the divine ideas, which are the objects immediately perceived, were the ſame before the world was created. He candidly admits this conſequence of his opinion; and reſts the complete evidence which we have of the exiſtence of matter upon the authority of revelation.

Mr. Norris, an Engliſh divine, eſpouſed the ſyſtem of Malebranche, in his "Eſſay towards the Theory of the Ideal or Intellectual World," publiſhed in two volumes 8vo., 1701. This ſyſtem was alſo adopted by many devout people of both ſexes in France. It was oppoſed by S'Graveſande in his "Introduction à la Philoſophie," and particularly examined and refuted by Mr. Locke in a ſmall tract which may be found in his "Poſthumous Works." See alſo Berkeley's Dialogues, 2d edit. p. 257, &c. But the moſt formidable antagoniſt of Malebranche was his own countryman, Antony Arnauld, an acute writer in favour of the Janſeniſts. (See his article.) In the year 1683 he publiſhed his book of "True and Falſe Ideas," in oppoſition to the ſyſtem of Malebranche. Arnauld maintains, that ideas are modifications of our minds; and finding no other modification of the human mind which can be called the idea of an external object, he ſays it is only another word for perception. Ideas, conſidered as certain repreſentative images, by which external objects are perceived exiſting either in the human or divine mind, are, according to Arnauld, mere chimeras, fictions of philoſophers; there are no ſuch beings in nature; and therefore, he ſays, it is to no purpoſe to inquire, whether they are in the divine or in the human mind. The only true and real ideas are our perceptions, which are acknowledged by all philoſophers, and by Malebranche himſelf, to be acts or modifications of our own minds. Arnauld, however, did not totally deny the exiſtence of ideas in the philoſophical ſenſe of that word, nor adopt the notion of the vulgar, who acknowledge no object of perception but the external object. He formally maintains, that the modes of expreſſion common among philoſophers, *viz.* "that we perceive not things immediately; that like ideas of them are the objects of our thoughts; and that it is in the idea of every thing that we perceive its properties," are not to be rejected, but are true when rightly underſtood. By endeavouring to reconcile theſe expreſſions to his own definition of ideas, he embarraſſed himſelf and his ſubject.

The common theory of ideas is in general, as we have already ſtated, that we perceive external objects by certain images which are in our minds, or in the ſenſorium to which the mind is immediately preſent. Theſe images have been variouſly denominated. Since the time of Des Cartes they have been called ideas. The Carteſians divided our ideas into three claſſes; thoſe of ſenſation, of imagination, and of pure intellection. Of the objects of ſenſation and imagination, they thought the images are in the brain, but of objects that are incorporeal, the images are in the underſtanding, or pure intellect. Mr. Locke, taking the term idea in the ſame ſenſe with Des Cartes, divides ideas into thoſe of ſenſation and thoſe of reflection; meaning, by the firſt, the ideas of all corporeal objects, whether perceived, remembered, or imagined; by the ſecond, the ideas of the powers and operations of our own minds. What Mr. Locke calls ideas, Mr. Hume divides into two diſtinct kinds, "impreſſions" and "ideas." The difference between theſe, he ſays, conſiſts in the degrees of force and livelineſs with which they ſtrike upon the mind. Under impreſſions he comprehends all our ſenſations, paſſions, and emotions, as they make their firſt appearance in the ſoul. By ideas he means the faint images of theſe in thinking and reaſoning. Dr. Hartley gives the ſame meaning to ideas as Mr. Hume does, and what Mr. Hume calls impreſſions he calls ſenſations, conceiving our ſenſations to be occaſioned by vibrations of the infiniteſimal particles of the brain, and ideas by miniature vibrations, or vibratuncles.

Des Cartes, who contributed to overturn the Peripatetic ſyſtem and the authority of Ariſtotle, took it for granted, as other philoſophers had done before him, that he did not perceive external objects themſelves, but certain images of them in his mind called ideas, and hence it is ſaid he was led to doubt the report of his ſenſes without collateral proof of their veracity. The impreſſions made upon our organs, nerves, and brain, could be nothing, according to his philoſophy, but various modifications of extenſion, figure, and motion. There could be nothing in the brain like ſound or colour, taſte or ſmell, heat or cold: theſe are ſenſations in the mind, which, by the laws of the union of ſoul and body, are raiſed on occaſion of certain traces in the brain; and although he gives the name of ideas to thoſe traces in the brain, he does not think it neceſſary they ſhould be perfectly like to the things which they repreſent, any more than that words or ſigns ſhould reſemble the things they ſignify. But he adds, that we may follow the received opinion as far as poſſible, and may allow a ſlight reſemblance. As to the place of thoſe ideas or images of external objects, which are the immediate objects of perception, he ſometimes refers them to the brain, not only when they are perceived, but when they are remembered or imagined, and this has been held to be the Carteſian doctrine; yet he ſometimes ſays, that we are not to conceive the images or traces in the brain to be perceived, as if there were eyes in the brain; but theſe traces are only occaſions on which, by the laws of the union of the ſoul and body, ideas are excited in the mind; and therefore it is not neceſſary that there ſhould be an exact reſemblance between the traces and the things repreſented by them. Des Cartes, it is well known, made the eſſence of the ſoul to conſiſt in thought: he would not allow it to be an unknown ſomething that had the power of thinking; it cannot therefore be without thought: and as he conceived there can be no thought without ideas, the ſoul muſt have had ideas in its firſt formation, which, of conſequence, are innate. See CARTESIAN *Philoſophy*.

Mr. Locke produced a revolution in the modes of thinking among metaphyſicians by his celebrated "Eſſay on the Human Underſtanding," a work, which brought men to think with preciſion on the philoſophy of the human mind, and which contributed at the ſame time to inſpire them with that candour and love of truth, which are the genuine ſpirit of philoſophy. Locke and Des Cartes differed concerning the origin of our ideas. Des Cartes thought that ſome of them were innate; but he demonſtrated that all our ideas are owing to our ſenſes; and that all innate, created, and factitious ideas, are mere chimeras.

Our mind, he ſhews, has not abſolutely any ideas beſides thoſe preſented to it by the ſenſes, and thoſe which it forms by its own operations on thoſe others which the ſenſes furniſh; ſo that a man, deſtitute of one of his ſenſes, would never have any idea belonging to that ſenſe; and, ſuppoſing him deſtitute of all the ſenſes, he would never have any idea at all; external objects having no other way of producing ideas in him, but by means of ſenſation, he would have no ideas, not even of reflection; becauſe, in wanting all ſenſation, he wants that which would excite in him the operations of his mind, which are the objects of his reflection.

It is plain, therefore, there is no innate idea; no general truth, or firſt principle, inherent in the ſoul, and created with it; no immediate object of the mind, before it had perceived external objects by means of the ſenſes, and reflected on that perception. Thoſe ideas only ſeem to be innate, becauſe we find we have them as ſoon as we come to the uſe of reaſon; but they are, in effect, what we formed from the ideas with which the mind was inſenſibly filled by the ſenſes. Thus, when the mind is employed about ſenſible objects, it comes by the ideas of bitter, ſweet, yellow, hard, &c. which we call *ſenſation*; and, when employed about its own operations perceiving and reflecting on them, as employed about the ideas before got by ſenſation, we get the ideas of perception, thinking, doubting, willing, &c. which are called *inward ſenſation*, or *reflection*; and theſe two, *viz.* external material things, as the objects of ſenſation, and the operations of our own minds, as the objects of reflection, are the only originals whence all our ideas have their riſe. When we have conſidered theſe, and their ſeveral modes and combinations, we ſhall find, that they contain our whole ſtock of ideas, inſomuch that the underſtanding does not ſeem to have the leaſt glimmering of any ideas, that it did not receive from one of thoſe ſources.

And thus far the mind appears merely paſſive, as not having it in its power to chooſe whether it will have theſe firſt beginnings, or materials of knowledge, or not. For the objects of ſenſe will obtrude their ideas upon the mind; and the operations of the mind will not let us be without ſome (however obſcure) notion of them.

Mr. Locke aſcribes likewiſe to the mind the power of compounding its ſimple ideas into complex ones of various forms; of repeating them, and adding the repetitions together; of dividing and claſſing them; of comparing them, and from that compariſon, of forming the ideas of their relation; nay, of forming a general idea of a ſpecies or genus, by taking from the idea of an individual every thing by which it is diſtinguiſhed from other individuals of the kind, till at laſt it becomes an abſtract general idea, common to all the individuals of the kind. (See ABSTRACTION.) For the ideas which we have of the different qualities of bodies, according to Locke, we refer to the article QUALITY.

From the ſyſtem of Mr. Locke and of other philoſophers, who conſidered ideas as the immediate objects of all thought, the ingenious biſhop Berkeley (ſee his article) inferred, and undertook to demonſtrate, that there is no ſuch thing as matter in the univerſe, but that all which it contains may be reduced to mind, and ideas in the mind. "It is evident," ſays he in the firſt ſentence of his "Principles of Knowledge, &c." "to any one who takes a ſurvey of the objects of human knowledge, that they are either ideas actually imprinted on the ſenſes; or ſuch as are perceived, by attending to the paſſions and operations of the mind; or laſtly, ideas formed by help of memory and imagination, either compounding, dividing, or barely repreſenting thoſe originally perceived in the foreſaid ways." See EXISTENCE and MATTER.

Berkeley's ſyſtem was adopted by Mr. Arthur Collier, rector of Langford Magna, near Sarum in Wiltſhire, who publiſhed a book in 1713, which he called "Clavis Univerſalis, or a New Enquiry after Truth; being a demonſtration of the non-exiſtence or impoſſibility of an external world." Biſhop Berkeley has widely deviated from the common ſyſtem with regard to ideas, diſtinguiſhing between ideas and notions. He ſpecifies two kinds of ideas, thoſe of ſenſe and thoſe of imagination. "The ideas imprinted on the ſenſes by the Author of Nature," he ſays, "are called real things; and thoſe excited in the imagination, being leſs regular, vivid, and conſtant, are more properly termed ideas, or images of things, which they copy and repreſent. But then our ſenſations, be they never ſo vivid and diſtinct, are nevertheleſs ideas: that is, they exiſt in the mind, or are perceived by it as truly as the ideas of its own framing. The ideas of ſenſe are allowed to have more reality in them; that is, to be more ſtrong, orderly, and coherent, than the creatures of the mind. They are alſo leſs dependent on the ſpirit, or thinking ſubſtance which perceives them, in that they are excited by the will of another, and more powerful ſpirit; yet ſtill they are ideas; and certainly no idea, whether faint or ſtrong, can exiſt, otherwiſe than in a mind perceiving it." Princ. § 33.

By the ideas of ſenſe, the author means the ſenſations we have by means of our ſenſes; concerning which, ſee SENSATION. The ideas of imagination, according to Berkeley, are more properly termed ideas, or images of things; or in other words, the images of our ſenſations. With regard to theſe it is obſerved by Dr. Reid, that they are not ſenſations; and that there is no diſtinction between thoſe ideas of imagination and notions, which Berkeley ſays are not ideas; but they ſeem to Dr. Reid perfectly to coincide. See NOTION.

The opinion of Leibnitz, concerning the origin of ideas, ſeems to have ſome affinity with innate ideas. He aſſerts the ſoul to be ſimple, and without parts or compoſition; hence he concludes that no created thing can act internally upon it, but that all the changes it undergoes depend upon ſome internal principle.

God has formed every ſoul, ſo as to have different perceptions; ſome diſtinct, many confuſed; and a great number ſo obſcure, as hardly to be perceived. All theſe ideas together repreſent the univerſe; underſtanding by this term every thing that has been, is, or ſhall be. According to the different relations that each particular ſoul has with the univerſe, ſome of its ideas are diſtinct, and diſtinctly repreſent a certain part of the univerſe. The foundation of this opinion is, that as each part of the univerſe, diſtinctly repreſented, has a neceſſary relation with every thing that exiſts, with every thing that has been, or ſhall be, all things being connected, ſo that the one is the conſequence of another; in like manner, the repreſentation of a certain part of the univerſe has a neceſſary and inſeparable relation to the repreſentation of the whole.

From whence it follows, that all diſtinct perceptions of the ſoul being connected with the ideas of all other things, theſe muſt likewiſe be in the ſoul, though obſcurely. In this ſenſe Mr. Leibnitz aſſerted, that the ſoul is the mirror of the univerſe. Now all things that happen in the univerſe, ſucceed each other according to certain laws. In like manner in the ſoul, ideas become ſucceſſively diſtinct according to other laws; which, though they have a relation to the former, are yet conſiſtent with the nature of intelligence.

All human ſouls have the ſame ideas, taking the ideas of each individual collectively. But diſtinct ideas are not the ſame in each; theſe depending upon the relation which each ſoul has to the univerſe; and this relation is different, according to the ſtation which God has pleaſed to aſſign to each. This ſeems a fair repreſentation of Mr. Leibnitz's ſyſtem relating to the origin of ideas; upon which we may remark, that the foundation of this ſyſtem is, that all the parts of the univerſe have a neceſſary connection: but to make juſt concluſions from this propoſition, the connection muſt be ſuch, that things being conſidered in themſelves, no one thing can be ſuppoſed, without all others being ſo neceſſary a conſequence thereof, that the idea of another univerſe, in which there ſhould be any thing belonging to our actual univerſe, muſt be contradictory.

If ſuch a connection took place, what is ſuppoſed concerning obſcure ideas would be true in a certain ſenſe; to wit, that it might be ſaid, that a man who has a diſtinct idea of a triangle, has thereby obſcure ideas of all the properties of this figure, becauſe of the neceſſary connection between theſe laſt ideas and the former.

But no ſuch connection between ideas ſucceeding each other in the ſoul is perceiveable. For if paſſing from a dark place to one that is enlightened, I thereby ſuddenly acquire the ideas of ſeveral objects, never before ſeen, it does not appear that the previous perception of darkneſs muſt neceſſarily lead me to theſe new ideas.

According to this ſyſtem, all our perceptions of external objects would be the ſame, though external things had never exiſted; our perception of them would continue, although, by the power of God, they ſhould be this moment annihilated. We do not perceive external things becauſe they exiſt, but becauſe the ſoul was originally ſo conſtituted as to produce in itſelf all its ſucceſſive changes, and all its ſucceſſive perceptions, independently of the external objects.

Theſe and other difficulties may be urged againſt Mr. Leibnitz's ſyſtem. See LEIBNITZIAN *Philoſophy*.

The ingenious Mr. Harris ſeems to conſider all our ideas as innate; originally impreſſed on our minds by the Deity, and only awakened or called forth by the preſence of external objects. Ideas, he ſays, are of the eſſence of mind, and, therefore, having no relation to corporeal things, cannot be produced by them. But this takes for granted a principle which is contrary to all appearance; *viz.* that the mind is of ſuch a nature as that it can have no poſſible connection with matter, or be properly affected by it. Whatever be the nature of the thinking principle, it ſeems agreeable to fact and univerſal experience to conclude, that it is capable of being affected, either by natural operation or in conſequence of an eſtabliſhed law, by external objects; and that its perceptions correſpond to the ſtate of the corporeal ſyſtem. Beſides, Mr. Harris allows that ſenſible objects have a natural power of awakening ideas; and why may they not have a natural power of originally exciting them in the ſame mind? Mr. Harris farther argues, that his hypotheſis is neceſſary to account for the identity of the ideas of different minds, which could not be explained, if they were only generated from ſenſible objects, which are fluctuating and variable. But it may be replied, that there is an equal identity or diverſity in external objects, as there is in our ideas of them; and the correſpondence between both is ſo ſtrict, as to afford a ſufficient proof, that our ideas have this origin, and no other. This ingenious writer ſuppoſes alſo, that the mental origin of our ideas is neceſſary to account for the correſpondence ſubſiſting between the ideas of the divine mind and thoſe of our's, and conſequently to the communication between him and us. If ſenſation were the only ſource of our ideas, this argument would have conſiderable force; but the contrary appears to be the fact, even upon the ſyſtem of Mr. Locke, and will be more particularly illuſtrated in the ſequel of this article. See Hermes, p. 380. 394, &c. 399, &c. and Prieſtley's Examination of Dr. Reid's Inquiry, &c. p. 334, &c.

According to Mr. Hume's ſyſtem, all perceptions are either impreſſions or ideas, comprehending under the firſt all our ſenſations, paſſions, and emotions, and under the ſecond, the faint images of theſe, when we remember or imagine them; and it is not poſſible for us ſo much as to conceive any thing ſpecifically different from ideas and impreſſions; and ſince all ideas are copied from impreſſions, we can therefore have no idea or conception of any thing of which we have not received an impreſſion. No man can have any idea of power or energy, becauſe he has never received any impreſſion of it ; and for the ſame reaſon no man can have any idea of ſelf. What we call a body is only a bundle of ſenſations ; and what we call a mind, is nothing but a bundle or collection of different perceptions, or of thoughts, paſſions, and emotions, which ſucceed each other with inconceivable rapidity, and are in a perpetual flux and movement, without any ſubject. There is properly, ſays Mr. Hume, no ſimplicity in the mind at one time, nor identity at different times, whatever natural propenſion we may have to imagine that ſimplicity and identity. They are the ſucceſſive perceptions only that conſtitute the mind ; ſo that there is nothing in the univerſe but impreſſions and ideas ; all poſſible perceptions being comprehended in thoſe two claſſes. Conſequently, this philoſophy, excluding body and mind, admits of no exiſtence whatſoever, not even of a percipient being to be the ſubject of theſe perceptions.

Dr. Price, in his “ Inquiry into the Original of our Ideas,” has taken occaſion to remark, that the ſyſtem of Mr. Locke, which aſcribes all our ideas to ſenſation and reflection, is materially defective ; for, if by ſenſation we underſtand the effects ariſing from the impreſſions made on our minds by external objects, and by reflection the notice which the mind takes of its own operations, it will be impoſſible to derive ſome of the moſt important of our ideas from them. This excellent reaſoner obſerves, that the power within us that underſtands, the intuition of the mind, or the faculty in it that diſcerns truth, that views, compares, and judges of all ideas and things, is a ſpring of new ſimple ideas, or original, primary, and uncompounded perceptions of the mind. To this ſource he refers our ideas of the impenetrability and *vis inertiæ* of matter, ſubſtance, duration, ſpace, infinity, neceſſity, contingency, poſſibility, impoſſibility, power, cauſation, &c. all our abſtract ideas (ſee ABSTRACTION), and alſo our ideas of moral right and wrong, and of moral obligation. It is, he ſays, of the eſſence of theſe ideas to imply ſomething true or falſe of an object, and that they by no means denote the manner in which we are affected by it : ſo that they cannot, with any propriety, be referred to that part of our conſtitution, which has been diſtinguiſhed by the appellation of ſenſe. Accordingly, our ideas may be divided, firſt, into thoſe implying nothing real without the mind, or nothing real and true, beſides its own affections and paſſions ; to which claſs we may refer the immediate effects of impreſſions on the bodily ſenſes, without ſuppoſing any previous ideas, as all taſtes, ſmells, colours, &c. and thoſe that ariſe upon occaſion only of other ideas ; as the effects in us of conſidering order, happineſs, the beauties of poetry, painting, &c. Secondly, into thoſe which are images of ſomething diſtinct from ſenſation, or which imply real, independent exiſtence and truth ; which may be ſubdivided into ſuch as denote the real properties of external objects, and the actions and paſſions of the mind ; and thoſe which are derived immediately from intelligence. By the notices conveyed to the mind through the organs of the body, or its obſervation of the neceſſary attendants and concomitants of certain ſenſations and impreſſions, it perceives the figure, extenſion, motion, and other primary qualities of material ſubſtances ; by contemplating itſelf, it perceives the properties of ſpiritual ſubſtances, volition, conſciouſneſs, memory, &c. To all theſe ideas it is eſſential that they have real, certain, invariable archetypes, actually exiſting, to which they are referred, and to which they are conformable. Theſe ideas again become objects or archetypes to the intellective faculty from whence ariſes a new ſet of ideas, which are the perceptions of this faculty, and repreſent not the mind's own affections, but neceſſary truth. Antecedently to theſe, whatever other ideas we may be furniſhed with, nothing is underſtood ; whatever ſeeds or ſubjects of knowledge may be in the mind, nothing is known. Price's Review, &c. of Morals, ſect. 2 and 3.

The ſyſtem of Mr. Locke, with regard to the origin of our ideas, has been lately attacked with conſiderable force of argument as well as confidence by Dr. Reid and others ; and it has been charged with being the foundation of univerſal ſcepticiſm.

Dr. Reid ſuggeſts that Mr. Locke has been ſometimes miſled by the ambiguity of the word *idea*, which he often uſes in different ſenſes. In common uſe this word has two meanings, *viz.* a popular and a philoſophical. In the popular meaning, to have an idea of any thing, ſignifies nothing more than to think of it. But philoſophers, ancient and modern, have maintained, that the operations of the mind, like the tools of an artificer, can only be employed upon objects that are preſent, in the mind, or in the brain, where the mind is ſuppoſed to reſide. Therefore, objects that are diſtant in time or place, muſt have a repreſentative in the mind, or in the brain ; ſome image or picture, which is the object contemplated by the mind. This of late has been called an *idea*, and every thought is conceived to have an idea of its object. Hence it has happened, that philoſophers have been apt to confound the operation of the mind in thinking with the idea or object of thought, which is ſuppoſed to be its inſeparable concomitant. Thought, and the object of thought, however, are different things, and ought to be diſtinguiſhed.

Mr. Locke is charged with uſing the word idea, without any intimation of the ambiguity of the word, ſometimes to ſignify thought, or the operation of the mind in thinking, and ſometimes to ſignify thoſe internal objects of thought which philoſophers ſuppoſe ; and this, it is apprehended, is the true ſource of ſeveral paradoxical opinions that occur in his excellent work. In explaining this word, Mr. Locke ſays that he uſes it for whatever is meant by phantaſm, notion, ſpecies ; ſo that we have here three ſynonyms for the word idea. The firſt and laſt are very proper to expreſs the philoſophical meaning of the word, being terms of art in the Peripatetic philoſophy, and ſignifying images of external things in the mind, which, according to that philoſophy, are objects of thought. But the word *notion* is a word in common language, whoſe meaning agrees exactly with the popular, but not with the philoſophical, meaning of the word *idea*. The frequent uſe of the word in theſe two ſenſes is the cauſe of confuſion and of miſapprehenſion in the reader. Beſides, there is a third ſenſe in which he uſes the word, and that is to denote objects of thought that are not in the mind, but external. Thus we ſee, that the word has three different meanings in the “ Eſſay ;” and the author ſeems to have uſed it ſometimes in one, and ſometimes in another, without being aware of any change in the meaning. The reader ſlides eaſily into the ſame fallacy.

Dr. Reid objects to every ſyſtem which ſuppoſes that the mind receives images of things from without, by means of the ſenſes, becauſe ſenſations bear no reſemblance to bodies or any of their qualities. With regard to extenſion, figure, motion, &c. he ſays, if they are not ideas of ſenſation, nor like to any ſenſation, then the ideal ſyſtem is a rope of ſand, and all the laboured arguments of the ſceptical philoſophy againſt a material world, and againſt the exiſtence of every thing but impreſſions and ideas, proceed upon a falſe hypotheſis. To this objection it has been replied, that ideas are only, in a figurative ſenſe, the images of external things ; that certain impreſſions are conveyed to the mind by means of the organs of ſenſe, and their correſponding nerves, between which, and the ſenſations exiſting in the mind, there is a real and neceſſary, though at preſent an unknown connection ; and that the ſame reaſoning would lead him to deny, that ſounds are produced by bodies ſtriking againſt one another, becauſe he can perceive no proper reſemblance between the cauſe and the effect.

Dr. Reid farther objects to the notion generally received among philoſophers, that the images of external objects are conveyed by the organs of ſenſe to the brain, and there perceived by the mind. But from this objection it might be inferred, that the whole ſyſtem of our ſenſes, nerves, and brain, is of no real uſe whatever ; becauſe it is impoſſible to ſay how they act upon the mind, or the mind upon them.

It is alſo objected, that Mr. Locke's diviſion of ideas into thoſe of ſenſation, and thoſe of reflection, is contrary to all the rules of logic ; becauſe the ſecond member of the diviſion includes the firſt. For can we, ſays he, form clear and juſt notions of our ſenſations any other way than by reflection ? Senſation is an operation of the mind of which we are conſcious, and we get the notion of it by reflecting upon that which we are conſcious of. In like manner, doubting and believing are operations of the mind, whereof we are conſcious, and we get the notion of them by reflecting upon what we are conſcious of. The ideas of ſenſation, therefore, are ideas of reflection, as much as the ideas of doubting or believing, or any other idea whatſoever. But it has been alleged, that the author confounds the *ideas of ſenſation* with the *idea of ſenſation itſelf*, which is, without doubt, of the ſame claſs with the ideas of doubting, &c. as Mr. Locke would have allowed. But the ideas belonging to the claſs of ſenſation do not require any ſcientifical knowledge of that power, or any reflection upon it. If this were the caſe, brute animals, having no proper ideas of reflection, could have no ideas of ſenſation ; and the caſe would be the ſame with the bulk of mankind. In another place, Dr. Reid acknowledges, that human beings may have ideas of mere ſenſation ſome time before they diſcover any power of reflection, and that this power may diſcover itſelf, and come into exerciſe afterwards.

Againſt the philoſophical opinion of the "Eſſay" and its advocates, Dr. Reid ſums up his objections in the following reflections, which we ſhall briefly mention, without any further detail, which our limits will not allow. 1. This opinion is directly contrary to the univerſal ſenſe of men who have not been inſtructed in philoſophy. 2. The authors who have treated of ideas have generally taken their exiſtence for granted, as a thing that could not be called in queſtion ; and ſuch arguments as they have mentioned incidentally, in order to prove it, ſeem too weak to ſupport the concluſion. 3. Philoſophers, notwithſtanding their unanimity as to the exiſtence of ideas, hardly agree in any one thing elſe concerning them. If ideas be not a mere fiction, they muſt be, of all objects of human knowledge, the things we have beſt acceſs to know, and to be acquainted with ; yet there is nothing about which men differ ſo much. 4. Ideas do not make any of the operations of the mind to be better underſtood, although it was probably with that view that they have been firſt invented, and afterwards ſo generally received. 5. The natural and neceſſary conſequences of this theory furniſh a juſt prejudice againſt it to every man who pays a due regard to the common ſenſe of mankind.

Reid farther obſerves, that, according to Mr. Locke's ſyſtem, ideas being the only objects of thought, and having no exiſtence but when we are conſcious of them, it neceſſarily follows, that there is no object of our thought which can have a continued and permanent exiſtence. Body and ſpirit, cauſe and effect, time and ſpace, to which we were wont to aſcribe an exiſtence independent of our thought, are all turned out of exiſtence by this ſhort dilemma. Either theſe things are ideas of ſenſation or reflection, or they are not : if they are ideas of ſenſation or reflection, they can have no exiſtence but when we are conſcious of them : if they are not ideas of ſenſation or reflection, they are words without any meaning. To which we ſhall only reply, that we have the ſame reaſon to believe, that mind exiſts as that body exiſts ; ſince it is only by that name that we diſtinguiſh the ſubject of certain powers or properties of which we are conſcious, as perception, memory, will, &c. and we have juſt the ſame reaſon to believe the identity of an idea as that of any external body, or that of our own minds.

Dr. Beattie, Dr. Oſwald, and others, have purſued and extended the ſame kind of reaſoning againſt the principles of Mr. Locke ; and alleged, that Berkeley's reaſoning againſt the exiſtence of a material world, and Hume's reaſoning againſt the exiſtence both of ſoul and body, are deduced from Locke's Eſſay, and the Principia of Des Cartes. For an account of Berkeley's ſyſtem, ſee ABSTRACTION, BODY, and EXISTENCE.

In oppoſition to this ſyſtem, Dr. Reid, and thoſe who have adopted his theory, have recurred to certain inſtinctive principles ; alleging, that our perceptions neceſſarily imply the belief of the preſent exiſtence of external objects ; and that the real, ſeparate, and independent exiſtence of matter is believed, not becauſe it can be proved by argument, but becauſe the conſtitution of our nature is ſuch, that we muſt believe it ; and that we cannot in our own minds ſeparate the belief of external objects from our ſenſations. However, it has been urged by an ingenious writer, that Mr. Locke's doctrine is not ſo favourable to Mr. Berkeley's theory as Dr. Reid's ; and that a ſyſtem which aſcribes our primary mental operations to mere conſtitution and feeling, is more favourable to ſcepticiſm than that in the room of which it is ſubſtituted.

Thoſe who wiſh to be farther acquainted with the controverſy relating to the nature and origin of our ideas, muſt be referred to Hume's Treatiſe of Human Nature, vol. i. p. 123, &c. 282, &c. 434, &c. Reid's Inquiry into the Human Mind, paſſim. Eſſays on the Intellectual Powers of Man, Eſſ. ii. Beattie's Eſſay on Truth, part ii. chap. 2. Prieſtley's Examination of Reid, Beattie, &c. paſſim. See *Common* SENSE.

For an account of Dr. Hartley's ſyſtem of the generation of our ideas, ſee ASSOCIATION, VIBRATION, and VIBRATIUNCLE.

The term idea has, by Mr. Locke, been extended to every thing we know or have any notion of, any thing about which the mind is employed in thinking. But this extenſive uſe of the term idea is thought improper by a very ingenious and acute writer, who obſerves, that we may be ſaid to have ſome knowledge or notion of our own minds, of ſpirits and active beings, whereof in a ſtrict ſenſe we have not ideas. In like manner, we know and have a notion of relations between things or ideas, which relations are diſtinct from the ideas or things related, inaſmuch as the latter may be perceived by us, without our perceiving the former. The ſame author elſewhere obſerves, that by *mind*, *ſpirit*, *ſoul*, or *ſelf*, he does not denote any one of his ideas, but a thing entirely diſtinct from them ; wherein they exiſt, or, which is the ſame thing, whereby they are perceived ; for the exiſtence of an idea conſiſts, as he ſays, in being perceived. He alſo obſerves, the word *thing*, or *being*, is the moſt general name of all, and comprehends under it two kinds entirely diſtinct and heterogeneous ; having nothing common but the name, to wit, *ſpirits* and *ideas*. And in another part of his treatiſe, he expreſsly affirms, there can be no idea formed of a ſoul or ſpirit. Berkeley's Princ. of Human Knowledge, § 2. 27. 89. 142.

Another author has alſo blamed Mr. Locke for confounding ideas and notions. He obſerves, that by idea, according to the common and moſt uſual ſignification of the word, is meant the image, picture, or repreſentation in the mind of a ſenſible appearance, or of an object which hath before been perceived by ſenſe. To which ſenſible appearance therefore the idea neceſſarily refers, for whatever is in it, or upon any account can be aſcribed to it; and it ſerves, or is made uſe of in its ſtead, for the mind to contemplate or employ itſelf about in thinking, at ſuch time when the object it repreſents is not immediately perceived, as in the act of ſenſe. Vide p. 105, 106 of a book, intitled "Two Diſſertations concerning Senſe and the Imagination, with an Eſſay on Conſciouſneſs." Lond. 1728. 8vo.

This author farther aſſerts, in oppoſition to Mr. Locke, that the perception of an idea is not an act of the underſtanding. He urges, that an idea, by Mr. Locke's own account of it, is an object, or ſomething perceived, and about which the mind is employed in thinking. Wherefore if perception (ſuppoſe), which is an operation or act of the mind, ſhould itſelf be conſidered as an idea (and under this very title Mr. Locke treats of perception), then one idea would be the object of another idea, and ſo there would be an idea of an idea, or an object of an object; and one idea would perceive another idea, which there is no making any tolerable ſenſe of. And indeed in explaining or declaring the operation of any faculty, to give it the ſame name and appellation with the object itſelf about which it is employed, and which there is a neceſſity of conſidering, in order to ſet forth the particular quality and nature of the operation, and the preciſe manner of its concerning and having to do with the object, ſeems very inconſiſtent with ſuch a purpoſe or deſign.

This author has been very elaborate in proving and enforcing the diſtinction between notions and ideas. In another treatiſe he obſerves, that Mr. Locke, in his Eſſay on Human Underſtanding, takes no notice of rational notions, and thereby has not only given a partial and imperfect account of his ſubject, but made an unjuſt and unfair repreſentation of it. Vide an Eſſay concerning Rational Notions, printed at London, 1723.

That ſome confuſion may have ariſen from giving the ſame name to theſe heterogeneous things, cannot be queſtioned. However, Mr. Locke is, in this reſpect, no more guilty than Malebranche and the Carteſians, who uſe the term idea in the ſame extenſive ſenſe with him, and from whom, indeed, he ſeems to have taken it. But then the Carteſians ſeem to have been more ſolicitous to diſtinguiſh between the ideas of the imagination, and thoſe of the intellect, underſtanding, or *de l'eſprit pur*, as they ſometimes expreſs themſelves, and have thereby guarded againſt the inconveniences ariſing from the too general ſignification of the term idea. See NOTION.

IDEAS, according to Mr. Locke, are divided into *ſimple* and *complex*.

IDEAS, *ſimple*, include all thoſe which come into the mind by ſenſation; and though the qualities of bodies that affect our ſenſes, are in the things themſelves ſo mixed and united, that there is no ſeparation between them, yet the ideas they produce in the mind are ſimple and unmixed. Again, ſome of theſe ideas we acquire purely by means of one ſenſe; as the ideas of colours, only by the eye; of ſounds by the ear; of heat by the touch, &c. Other ideas we gain by ſeveral ſenſes, as of ſpace, extenſion, figure, reſt, motion, &c. for theſe have their effect both on the ſight and the touch. Others, again, are had from reflection only; ſuch as thoſe of perception and willing. There are other ſimple ideas, again, formed in the mind both by ſenſation and reflection jointly, as thoſe of pleaſure, pain, power, exiſtence, unity, ſucceſſion, &c. And ſome of theſe kinds of ideas are all, or at leaſt the moſt conſiderable, of thoſe ſimple ideas which the mind hath, and out of which is made all its other knowledge.

The better to comprehend the nature of ſimple ideas, it will be convenient to diſtinguiſh between them, as they are ideas of perceptions in our minds, and as they are modifications of the bodies that cauſe ſuch perceptions in us, that we may not think, as is uſually done, that they are exactly the images and reſemblances of ſomething inherent in the object; for moſt of thoſe of ſenſation are in the mind no more the likeneſs of any thing exiſting without us, than the names that ſtand for them are the likeneſs of the ideas.

But here the qualities of bodies which produce thoſe ideas in our minds, are to be diſtinguiſhed into *primary* and *ſecondary*. *Primary* qualities are ſuch as are utterly inſeparable from the body, in what ſtate ſoever it be, and ſuch as our ſenſes conſtantly find in every particle of matter; which are ſolidity, extenſion, figure, mobility, and the like. *Secondary* qualities are ſuch, as are, in reality, nothing in the objects themſelves, but only powers to produce various ſenſations in us, by means of their primary qualities: that is, by the figure, bulk, texture, &c. of their particles, as colours, ſounds, taſte, &c.

Now the ideas of primary qualities are, in ſome ſenſe, reſemblances of them, and their patterns do really exiſt in the bodies themſelves; but the ideas produced in us by thoſe ſecondary qualities have no reſemblance of them at all. There is nothing like our ideas exiſting in the bodies themſelves that occaſion them: they are, in the bodies we denominate from them, only a power to produce thoſe ſenſations in us; and what is ſweet, warm, blue, &c. in the idea, is no more than the bulk, figure, and motion of the particles of the bodies themſelves, which we call ſo. See QUALITY.

The mind has ſeveral faculties for managing theſe ſimple ideas, which are worthy of notice: as, 1. That of diſcerning juſtly, and diſtinguiſhing rightly, between one and another; in which conſiſts the accuracy of judgment.

2. That of comparing them one with another, in reſpect of extent, degree, time, place, or any other circumſtances of relation or dependence, one on another.

3. That of compounding, or putting together, the ſimple ideas received by ſenſation and reflection, in order to make complex ones.

4. Children, by repeated ſenſations, having got ſome ideas fixed in their memories, by degrees learn the uſe of ſigns, and when they can ſpeak articulately, they make uſe of words to ſignify their ideas to others.

Hence, the uſe of words being to ſtand as outward marks of our internal ideas, and thoſe ideas being taken from particular things, if every particular idea that we take in ſhould have a particular name affixed to it, names would become endleſs. To prevent this inconvenience, the mind has another faculty, whereby it can make the particular ideas received from ſuch objects become general; which is done by conſidering them as they are in the mind, ſuch appearances, ſeparate from all other exiſtences, and circumſtances of exiſtence, as time, place, and other concomitant ideas; and this is called *abſtraction*, whereby ideas, taken from particular things, become general repreſentatives of all of that kind, and their names, general names, applicable to whatever exiſts conformable to ſuch abſtract ideas. Thus, the ſame colour being obſerved to-day in chalk or ſnow, which we obſerved yeſterday in paper or milk, we conſider that appearance alone makes it a repreſentative of all of the ſame kind, and gives it the name of *whiteneſs*; by which ſound we always ſignify the ſame quality, whereſoever to be met with, or imagined.

From the powers of combining, comparing, and ſeparating, or abſtracting ſimple ideas, acquired by ſenſation and reflection, all our complex ideas are formed; and, as before, in the perception of ideas, the underſtanding was paſſive, ſo here it is active, exerting the power it hath in the ſeveral acts and faculties above mentioned, in order to frame compound ideas.

IDEAS, *complex*, though their number be infinite, and their variety endleſs, yet may all be reduced to theſe three heads; *viz. modes*, *ſubſtances*, and *relations*. *Modes* are ſuch complex ideas as, however compounded, are not ſuppoſed to exiſt by themſelves, but are conſidered as dependences on, or affections of, ſubſtances: ſuch are the ideas ſignified by the words *triangle*, *gratitude*, *murder*, &c.

Theſe are of two kinds: 1. Such as are only variations, or different combinations, of the ſame ſimple idea, without the mixture of any other; as a dozen, a ſcore, &c. which may be called *ſimple modes*. 2. There are others, compounded of ſimple ideas, of ſeveral ſorts put together, to make one complex one; as *beauty*, *theft*, &c.

Subſtances have their ideas from ſuch combinations of ſimple ideas, as are taken to repreſent diſtinct particular things ſubſiſting by themſelves; in which the ſuppoſed or confuſed idea of ſubſtance, ſuch as it is, is always the firſt and chief.

Relations are a kind of complex ideas, ariſing from the conſideration or compariſon of one idea with another. Of theſe, ſome only depend on the equality or exceſs of the ſame ſimple idea in ſeveral ſubjects; and theſe may be called *proportional relations*; ſuch as *equal*, *more*, *bigger*, *ſweeter*. Another occaſion of comparing things together is owing to the circumſtances of their origin and beginning; which not being afterwards to be altered, make the relations depending thereon as laſting as the ſubjects to which they belong. Thus it is with natural relations, as *father*, *mother*, *uncle*, *couſin*, &c. Thus alſo it is with relations by inſtitution, as *prince* and *people*, *general* and *army*, &c. As to moral relations, they are the conformity or diſagreement of men's free actions to laws and rules, whether human or divine.

Farther, *Ideas* may be divided into *clear* or *diſtinct*; and *obſcure* or *confuſed*.

IDEAS, *ſimple*, are *clear*, when they continue ſuch as the objects preſent them to us when our organs of ſenſation are in good tone and order; when our memories retain them, and can produce and preſent them to the mind whenever it has occaſion to conſider them; and when, with this, the mind ſees that theſe ſimple ideas are ſeverally different one from another. The contrary to which is what we call *obſcurity* and *confuſion* of ideas.

A *diſtinct* idea is that wherein the mind perceives a difference from all others; and a *confuſed* idea is ſuch a one as is not ſufficiently diſtinguiſhable from another, with regard to which it ought to be different.

IDEAS, again, with reſpect to the objects whence they are taken, of which they are ſuppoſed to repreſent, come under a threefold diſtinction; being either *real* or *fantaſtical*; *true* or *falſe*; *adequate* or *inadequate*.

IDEAS, *real*, are ſuch as have a foundation in nature; or ſuch as have a conformity with the real being or exiſtence of things, or with their archetypes.

IDEAS, *fantaſtical* or *chimerical*, are ſuch as have no foundation in nature, nor any conformity with that being to which they are referred, or with their archetypes.

All our *ſimple* ideas are real; not that they are images or repreſentations of what does exiſt, but as they are the certain effects of powers in things without us, ordained by our Maker to produce in us ſuch ſenſations. They are real ideas in us, becauſe by them we diſtinguiſh the qualities that are really in the bodies themſelves; their reality lies in the ſteady correſpondence they have with the diſtinct conſtitutions of real being; but whether with thoſe conſtitutions as cauſes or patterns, it matters not, ſo long as they are conſtantly produced by them.

As to *complex* ideas; in regard they are arbitrary combinations of ſimple ideas put together, and united under one general name, in forming whereof the mind uſes its own liberty, ſome are found *real*, and ſome *imaginary*. 1. Mixed modes and relations, having no other reality than what they have in the minds of men, are real; nothing more being required to their reality, but a poſſibility of exiſting conformable to them. Theſe ideas, being themſelves archetypes, cannot differ from their archetypes, and ſo they cannot be chimerical, unleſs any one jumbles inconſiſtent ideas in them; indeed, thoſe that have names aſſigned to them, ought to have a conformity to the ordinary ſignification of thoſe names, to prevent their appearing fantaſtical. 2. Our complex ideas of ſubſtances being made in reference to things exiſting without us, whoſe repreſentations they are thought to be, are no farther real than as they are combinations of ſimple ideas really united and co-exiſting in things without us. Thoſe are fantaſtical that are made up of ſeveral ideas that never were found united, as *centaur*, &c.

IDEAS, *real*, are divided into *adequate* and *inadequate*.

IDEAS, *adequate*, are thoſe which perfectly repreſent thoſe archetypes which the mind ſuppoſes them taken from, and which it makes them ſtand for.

IDEAS, *inadequate*, are ſuch as do but partially, or incompletely, repreſent thoſe archetypes to which they are referred.

IDEAS, *as to true and falſe*, it may be obſerved, that truth and falſhood, in propriety of ſpeech, belong only to propoſitions; and when ideas are termed *true* and *falſe*, there is ſome tacit propoſition, which is the foundation of that denomination. Our ideas, being nothing elſe but appearances or perceptions in the mind, can no more be ſaid to be true or falſe, than ſingle names of things can be ſaid to be ſo: for truth and falſhood lying always in the affirmation or negation, our ideas are not capable of them, till the mind paſſes ſome judgment of them. In a metaphyſical ſenſe they may be ſaid to be true, *i. e.* to be really as they exiſt; though in things called *true*, even in that ſenſe, there ſeems to be a ſecret reference to our ideas, looked upon as the ſtandards of that truth; which amounts to a mental propoſition. When the mind refers its ideas to any thing extraneous to it, they are then capable of being true or falſe; becauſe, in ſuch a reference, the mind makes a tacit ſuppoſition of their conformity to that thing; and as this ſuppoſition is true or falſe, ſo the ideas themſelves come to be denominated. Locke's Eſſay, 8vo. vol. i. paſſim.

IDEAL, in *Painting and Sculpture*, is uſed to ſignify a perfection in form, and a beauty in colouring, deduced from the general principles of nature; but not to be found in any individual perſon or thing of compound ſtructure, when conſidered in all its parts; ſuch as man, for inſtance.

No man or woman, probably, ever exiſted poſſeſſed of that perfect beauty of form in all their parts, of which thoſe parts are fully capable, conſiſtent with the power to perform their intended functions in the animal economy. Therefore artiſts who aim at repreſenting the human figure in its utmoſt perfection, are of courſe called upon imperatively, to vary in ſome point or other from their models, and to add the beauties of others. This ſelection of perfect parts depending entirely upon taſte, is that ideal in art, (or *beau ideal*, a term adopted from the French,) which is the ſource of ſo much beauty and character in the works of a few artiſts, who poſſeſſed ſuper-eminent talents; and which, being miſunderſtood, or attempted without knowledge and true taſte, is equally the ſource of ſo much vicious affectation and frippery in thoſe of the greater part, whoſe aim is to diſplay it.

Sir Joſhua Reynolds, in his letter publiſhed in the Idler, No. 82, has aptly illuſtrated this ſubject by obſerving, that "among blades of graſs, or leaves of the ſame tree, though no two can be found exactly alike, yet the general form is invariable. A naturaliſt, before he chuſes one as a ſample, would examine many, ſince, if he took the firſt that occurred, it might have, by accident or otherwiſe, ſuch a form as ſcarcely would be known to belong to that ſpecies; he ſelects, like the artiſt, the moſt beautiful, that is, the moſt general form of nature."

Every ſpecies of the animal, as well as the vegetable creation, may be ſaid to have a fixed or determinate form round which nature continually varies in every direction, as a number of radii iſſue from one common centre. To inſtance, in a particular part of the human face, the line that forms the ridge of the noſe is moſt beautiful when it is ſtraight; this, then, is the central form. How infinite are the variations from this line to the convex, concave, and forms made of both, we need not inform our readers. The ſame remarks attach to every portion of the figure. The head, the neck, the trunk, and the limbs are found almoſt as various in form as the features of the face; although the general character is the ſame in all; and fixed for every period of the life of man. In childhood, youth, manhood, and declining years, there are diſtinct and univerſal characteriſtics, whilſt each individual in the ſeparate claſſes is known by his peculiar variations of form and features It is the duty of the artiſt who practiſes in the higher walks of art, to paint man, and not individuals; to learn the general character of the objects he is to repreſent, and neglect the trifling peculiarities attached to each.

But this ſublime branch of ſtudy in art may be, and has been, carried to exceſs. It properly belongs only to one kind of ſubject, that is, in its more important application; *viz.* the repreſentation of exalted and heroic characters; and of ſcenes, where the actors are few. Thoſe ſubjects which relate to the common tranſactions of mankind, do not ſo poſitively require it. In them a greater degree of preciſe imitation is allowed, indeed required; and where many figures are introduced, the variety of characters requiſite, will demand variations from the central form. But even then, unleſs the ſcene is taken from vulgar ordinary life, the different characters muſt not be too minutely wrought. It is true, a thin man muſt be repreſented ſpare of fleſh; and a fat one poſſeſſing redundancy; but then all the wrinkles commonly attendant upon both are not neceſſary to mark their characters. Judgment and taſte alone can ſelect thoſe which are ſo; and one of the moſt difficult leſſons an artiſt has to learn, is, what to omit when he is copying from nature. That much may be omitted, and yet every feature neceſſary for true and effective repreſentation retained, is evident from every portrait that ever was painted; even by the meanly inſtructed pencil of Denner, who attempted to repreſent the hairs of the beard, and the grainy texture of the ſkin; and did it with much ſkill. But are his pictures more like human beings, that is, do they convey an idea of them to the mind of an obſerver, more ſtrongly than the free and manly works of Vandyke and ſir J. Reynolds, who totally diſregarded thoſe minutiæ!

The rejection of thoſe trifling points is the ideal of portrait painting, and what alone raiſes it to an exalted rank in the ſcale of art. Without it, the painter of portraits is not a whit more ingenious, or more deſerving of eſtimation, than he who imitates with ingenuity a mahogany cheſt, or any other painter of ſtill life.

The ſame principle holds good in landſcape. Trees ſhould be repreſented with their own peculiar characters, but they need not have all the minute ramifications of their branches exhibited. The *beau ideal* requires in them a general characteriſtic form; and not too frequent a variety of ſpecies. Claude de Lorraine has ſometimes carried this too far, and made all the trees in a picture of one form, or nearly ſo. It certainly aſſiſts in producing ſimplicity; but in this point nature is ſo exceedingly laviſh of variety, that ſome of it is neceſſary to ſatisfy the eye of one accuſtomed to obſerve her productions.

The danger of attempting to produce the ideal in form is that of falling into affectation.

What that ideal in art which ſhould be ſought after is, may beſt be learned by ſtudying the works of the ancient Greek ſculptors; and obſerving wherein they differ from the ordinary forms of nature. The opportunities they poſſeſſed, which are utterly unknown to the inhabitants of northern Europe, of ſeeing the human figure conſtantly naked, and in violent exerciſe, enabled them more ſurely to judge of what was moſt beautiful in the general form; to ſelect ſuch as poſſeſſed thoſe beauties; and unite their various perfections. It is ſaid of Zeuxis the painter, that when employed in painting a Venus, he ſelected twelve of the moſt lovely women of the country, and combined in one figure, the charms for which each was moſt conſpicuous.

The ideal in art, therefore, is not ſomething more beautiful than nature; but nature in her perfect ſtate: and he who attempts to produce it by drawing from his imagination rather than his judgment, will more probably fall into the region of error, than ſoar to the abode of truth. We ſhall have occaſion to ſpeak more of this when we come to treat of ſtyle in deſign. See STYLE.

IDEAL *Beauty in the Fine Arts*. Painters are allowed to talk of the *beau ideal*, who have nature always ſitting to them in ſome garb or other, and they have only to copy her dreſs and attitudes. But with reſpect to muſic, which is entirely a work of art, and of which the beauties as well as deformities are all ideal, it has been aſked by a man of more wit than feeling, what it means to ſay? *Sonate, que veux tu*? And this interrogator was Fontenelle! the moſt ingenious and agreeable writer on ſubjects within his competence, which the French language can boaſt! Ideal, in the common acceptation of the word, implies ſomething which has no reality, and which only exiſts in imagination; but in ſpeaking of the fine arts, this expreſſion, ſo far from being diſputed, often deſcribes the higheſt point of perfection at which they can poſſibly arrive. It is particularly to painting and ſculpture that it has been applied; though it equally belongs to poetry and muſic. There are arts which imitate nothing, or of which the imitations are accidental and feeble: ſuch are architecture and inſtrumental muſic.

Let us conſider the conſtituent parts of muſic—they conſiſt of three elements; melody, harmony, and time or rhythm. We ſhould have mentioned time or meaſure firſt, becauſe we have always found that a regular movement, of which the accents are ſtrongly marked, has more effect on common ears than refined melody; but attention to that increaſes as the ear begins to diſcriminate, and is poliſhed by degrees. But harmony has been invented after the lapſe of many ages, and only brought to perfection by the moderns. However, after innumerable experiments, when not abuſed, it is found to embelliſh melody, and to augment its expreſſion.

Now we ſhould be glad to know what ſhare the *imitation of nature* has had in the cultivation and progreſs of muſic? The warbling of birds is not meaſured, their concerts have no harmony, and are often very diſcordant; nor is their melody appreciable by our organs. The talking of *natural* muſic is therefore abſurd; who does not ſee that all the beauties of muſic are ideal, and produced by experiment, or by that inſtinct which makes us augment and diminiſh, retouch and correct, till we are quite ſatisfied with our work? Let us then be more juſt to the polite arts, and reſtore to them the noble rank which is their due. They not only imitate but invent; and not content to copy nature when practicable, they can embelliſh her. They can expreſs the thoughts of man: thoughts which are only the reſult of ambitious deſires, and the ardour with which he ſeeks pleaſure.

The ideal genus opens a wide field to imagination; for the moment our mind is elevated above ſublunary, vulgar, and familiar objects, it expands in full liberty. Nor is any art better than mechanical, if it ſuffers us to remain wholly diveſted of enthuſiaſm, and is unable to lift us off the ground.

IDENTITATE Nominis, in *Law*, a writ which lies for him who, upon a capias or exigent, is arreſted, and committed to priſon, for another man of the ſame name.

IDENTITY, Sameness; that by which a thing is itſelf, and not any thing elſe. In which ſenſe, *identity* differs from *ſimilitude*, as well as *diverſity*.

Our idea of identity we owe to that power which the mind has of comparing the very being of things; whereby, conſidering any thing as exiſting at any certain time and place, and comparing it with itſelf as exiſting at any other time, &c. we accordingly pronounce it the ſame.

When we ſee any thing in any certain time and place, we are ſure it is that very thing, and can be no other, how like ſoever it may be to ſomething elſe in all other reſpects; becauſe we conceive it impoſſible, that two things of the ſame kind ſhould exiſt together in the ſame place, we conclude, that whatever exiſts any where at the ſame time, excludes all of the ſame kind, and is there itſelf alone. When, therefore, we demand, whether any thing be the ſame or no, it refers always to ſomething that exiſted at ſuch a time, in ſuch a place; which it was certain, at that inſtant, was the ſame with itſelf, and no other. Identity, therefore, evidently ſuppoſes an uninterrupted continuance of exiſtence.

We have ideas of three ſorts of ſubſtances: of God; of finite intelligences; and of bodies. God being eternal, unalterable, and every where, concerning his identity there can be no doubt. Finite ſpirits having had their determinate place, and time of beginning to exiſt, the relation to that time and place will always determine to each its identity as long as it exiſts. And the ſame will hold of every particle of matter to which no addition, or from which no ſubtraction, is made. Theſe three exclude not one another out of the ſame place; yet each exclude thoſe of the ſame kind out of the ſame place. The identity and diverſity of modes and relations is determined after the ſame manner that thoſe of ſubſtances are; only the actions of finite beings, as motion and thought, conſiſting in ſucceſſion, cannot exiſt in different times and places as permanent beings: for no motion or thought, conſidered as at different times, can be the ſame; each part thereof having a different beginning of exiſtence. From whence it is plain, that exiſtence itſelf is the *principium individuationis*, which determines a being to a particular time and place incommunicable to two beings of the ſame kind.

Thus, ſuppoſe an atom exiſting in a determined time and place, it is evident, that, conſidered in any inſtant, it is the ſame with itſelf, and will be ſo, as long as its exiſtence continues. The ſame may be ſaid of two, or more, or any number of particles, whilſt they continue together, the maſs will be the ſame, however jumbled; but if one atom be taken away, it is then not the ſame maſs. But in vegetables, the identity depends not on the ſame maſs, and is not applied to the ſame thing: the reaſon of this is, the difference between an inanimate body, and a crude maſs of matter; this latter being only the coheſion of particles any how united, the other ſuch a diſpoſition of organization of parts, as is fit to receive and diſtribute nouriſhment, ſo as to continue and frame the wood, bark, leaves, &c. (of an oak, for inſtance) in which conſiſts the vegetable life. That, therefore, which hath ſuch an organization of parts, partaking of one common life, continues to be the ſame plant, though that life be communicated to new particles of matter vitally united to the living plant. The caſe is not ſo much different in brutes, but that any one may hence ſee what makes an animal, and continues it the ſame. The identity of the ſame man likewiſe conſiſts in a participation of the ſame continued life, in ſucceeding particles of matter vitally united to the ſame organized body.

To underſtand identity aright, we muſt conſider what idea the word ſtands for; it being one thing to be the ſame ſubſtance; another, the ſame man; and a third, the ſame perſon. An animal is a living organized body; and the ſame animal is the ſame continued life communicated to different particles of matter, as they happen ſucceſſively to be united to that organized living body; and our notion of man is but of a particular ſort of animal. Perſon ſtands for an intelligent being, that reaſons and reflects, and can conſider itſelf the ſame thing in different times and places, which it doth by that conſciouſneſs that is inſeparable from thinking. By this every one is to himſelf, what he calls *ſelf*, without conſidering whether that ſelf be continued in the ſame, or in diverſe ſubſtances. In this conſiſts perſonal identity, or the ſameneſs of a rational being; and ſo far as this conſciouſneſs extends backward to any paſt action, or thought ſo far reaches the identity of that perſon. It is the ſelf ſame now it was then; and it is by the ſame ſelf, with this preſent one, and that now reflects on it, that that action was done. Self is that conſcious thinking thing, whatever ſubſtance it matters not, which is conſcious of pleaſure and pain, capable of happineſs or miſery; and ſo is concerned for itſelf as far as that conſciouſneſs extends. That with which the conſciouſneſs of this preſent thinking can join itſelf, makes the *ſame* perſon, and is one ſelf with it; and ſo attributes to itſelf, and owns all the actions of that thing as its own, as far as that conſciouſneſs reaches. Perſonality is ſomething that cannot be divided, or conſiſt of parts. It is in the ſtricteſt ſenſe what Leibnitz calls a *Monad*, which ſee; and perſonal identity implies the continued exiſtence of that indiviſible thing called ſelf; which, whatever be its preciſe nature, thinks, deliberates, reſolves, acts, and ſuffers. It is not thought, action, feeling; but ſomething that thinks, acts, and ſuffers my thoughts, actions, and feelings to change every moment; they have no continued, but a ſucceſſive exiſtence; but that *ſelf*, or *I*, to which they belong, is permanent, and has the ſame relation to all the ſucceeding thoughts, actions, and feelings, which I call mine. Should it be aſked, what evidences have you that there is ſuch a permanent ſelf which has a claim to all the thoughts, actions, and feelings, which you call yours? It is replied, that the proper evidence I have of all this is remembrance, or, as ſome expreſs it, conſciouſneſs.

Conſciouſneſs, ſays the excellent biſhop Butler, of what is paſt, aſcertains our perſonal identity to ourſelves; yet to ſay that it makes perſonal identity, or is neceſſary to our being the ſame perſons, is to ſay, that a perſon has not exiſted a ſingle moment, nor done one action but what he can remember: indeed, none but what he reflects upon. And one ſhould really think it ſelf-evident, that conſciouſneſs of perſonal identity preſuppoſes, and, therefore, cannot conſtitute perſonal identity; any more than knowledge in any other caſe can conſtitute truth which it preſuppoſes. Though preſent conſciouſneſs of what we at preſent do and feel is neceſſary to our being the perſons we now are; yet preſent conſciouſneſs of paſt actions or feelings is not neceſſary to our being the ſame perſons who performed thoſe actions, or had thoſe feelings. The identity of perſons cannot ſubſiſt with diverſity of ſubſtance: perſonal identity is, therefore, as Mr. Locke expreſſes it, the ſameneſs of a rational being; and the queſtion, whether the ſame rational being is the ſame ſubſtance, needs no anſwer; becauſe being and ſubſtance, in this caſe, ſtand for the ſame idea. Conſequently, though the ſucceſſive conſciouſneſſes which we have of our own exiſtence are not the ſame, yet they are conſciouſneſſes of one and the ſame thing or object; of the ſame perſon, ſelf, or living agent. The perſon of whoſe exiſtence the conſciouſneſs is felt now, and was felt an hour or a year ago, is diſcerned to be, not two perſons, but one and the ſame perſon, and, therefore, is one and the ſame. Butler's Analogy, Append. Diſſ. 1.

The identity of a perſon is a perfect identity: wherever it is real, it admits of no degrees; and it is impoſſible that a perſon ſhould be the ſame in part, and in part different; becauſe, as we have already ſaid, a perſon is a monad, and is not diviſible into parts. But the evidence of identity in other perſons beſides ourſelves admits of various degrees, from what we account certainty to the leaſt degree of probability. But ſtill it is true, that the ſame perſon is perfectly the ſame, and cannot be ſo in part, or in ſome degree only. We probably at firſt derive our notion of identity from that natural conviction which every man has from the dawn of reaſon of his own identity and continued exiſtence. The operations of our minds are all ſucceſſive, and have no continued exiſtence: but the thinking being has a continued exiſtence, and we have an invincible belief that it remains the ſame when all its thoughts and operations change. The evidence we have of our own identity, as far back as we remember, is totally of a different kind from the evidence we have of the identity of other perſons, or of objects of ſenſe. The firſt is grounded on memory, and gives undoubted certainty. The laſt is grounded on ſimilarity and on other circumſtances, which in many caſes are not ſo deciſive as to leave no room for doubt. See Reid's Eſſays, Eſſ. iii. chap. 4.

This perſonal identity is the object of reward and puniſhment, being that by which every one is concerned for himſelf. If the conſciouſneſs went along with the little finger; when that was cut off it would be the ſame ſelf, that was juſt before concerned for the whole body. If the ſame Socrates, waking and ſleeping, did not partake of the ſame conſciouſneſs, he would not be the ſame perſon: Socrates waking could not be, in juſtice, accountable for what Socrates ſleeping did; no more than one twin for what his brother-twin did; becauſe their outſides were ſo like that they could not be diſtinguiſhed.

But ſuppoſe I wholly loſe the memory of ſome parts of my life, beyond a poſſibility of retrieving them, ſo that I ſhall never be conſcious of them again; am I not again the ſame perſon that did thoſe actions though I have forgotten them? I anſwer, we muſt here take notice what the word *I* is applied to, which in this caſe is the man only; and the ſame man being preſumed to be the ſame perſon, *I* is eaſily here ſuppoſed to ſtand alſo for the ſame perſon. But if it be poſſible for the ſame man to have a diſtinct, incommunicable conſciouſneſs at different times, it is paſt doubt the ſame man would, at different times, make different perſons; which we ſee is the ſenſe of mankind in the moſt ſolemn declaration of their opinions; human laws not puniſhing the madman for the ſober man's actions, nor the ſober man for what the madman did; thereby making them two perſons.

Thus we ſay, in Engliſh, ſuch a one is not himſelf, or is beſide himſelf; in which phraſe it is inſinuated, that ſelf is changed, and the ſelf ſame perſon is no longer in that man. But is not a man, drunk or ſober, the ſame perſon? Why elſe is he puniſhed for the ſame fact he commits when drunk, though he be never afterwards conſcious of it? Juſt as much the ſame perſon as a man that walks and does other things in his ſleep, is the ſame perſon, and is anſwerable for any miſchief he ſhall do in it. Human laws puniſh with a juſtice ſuitable to their way of knowledge; becauſe in theſe caſes they cannot diſtinguiſh certainly what is real, and what is counterfeit; and ſo the ignorance in drunkenneſs, or ſleep, is not admitted as a plea. For though puniſhment be annexed to perſonality, and perſonality to conſciouſneſs, and the drunkard is not conſcious, perhaps, of what he did, yet human judicatures juſtly puniſh him, becauſe the fact is proved againſt him; but want of conſciouſneſs cannot be proved for him. But in the great day, wherein the ſecrets of all hearts ſhall be laid open, it may be reaſonable to think no one ſhall be made to anſwer for what he knows nothing of, but ſhall receive his doom; his own conſcience accuſing, or elſe excuſing him.

To conclude this article, whatever ſubſtance begins to exiſt, it muſt, during its exiſtence, be the ſame; whatever compoſition of ſubſtances begin to exiſt, during the union of thoſe ſubſtances, the concrete muſt be the ſame. Whatſoever mode begins to exiſt, during its exiſtence it is the ſame; and ſo if the compoſition be of diſtinct ſubſtances and different modes, the ſame rule holds. Whence it appears, that the difficulty or obſcurity that has been about this matter, rather ariſes from names ill uſed, than from any obſcurity in the things themſelves. For whatever makes the ſpecific idea, to which the name is applied, if that idea be kept ſteadily to, the diſtinction of any thing into the ſame and diverſe, will eaſily be conceived. Locke's Eſſays, vol. i. chap. 27.

IDEOT. See IDIOT and LUNATIC.

IDES, IDUS, in the *Roman Calendar,* a denomination given to eight days in each month; commencing in the months of March, May, July, and October, on the fifteenth day; and in the other months on the thirteenth day; and reckoned backward, ſo as in the four months above ſpecified to terminate on the eighth day, and in the reſt on the ſixth.

The origin of the word is conteſted. Some will have it formed from ιδειν, *to ſee;* becauſe the full moon was commonly ſeen on the day of the ides; others from ειδος, *ſpecies, figure,* on account of the image of the full moon then viſible; others from *idulium,* or *ovis idulis,* a name given by the Etrurians to a victim offered on that day to Jupiter; others from the Etrurian word *iduo, i. e. divido;* becauſe the ides divided the moon into two nearly equal parts.

The ides came between the calends and the nones.

The 15th day in March, May, July, and October, and the 13th of the other months, being called the ides of thoſe months; *idus Martii, Maii,* &c. the 14th day of the ſame four months, and the 12th of the other eight, were *pridie idus,* or the eve of the ides of March, &c. the 13th day in the four months, and the 11th in the eight, was called the third of the ides of ſuch months, 3 *idus Martii,* &c. ſo the 12th day in the four, and the 10th in the eight months, were the fourth of the ides, 4 *idus Martii,* &c. and thus of the reſt, to the eighth and ſixth days, which made the eighth of the ides, 8 *idus Martii,* &c.

This way of accounting is ſtill in uſe in the Roman chancery, and the calendar of the breviary. The ides of May were conſecrated to Mercury; the ides of March were always eſteemed unhappy after Cæſar's murder; the time after the ides of June was reckoned fortunate for thoſe who entered into matrimony; the ides of Auguſt were conſecrated to Diana, and were obſerved as a feaſt day by the ſlaves; on the ides of September, auguries were taken for appointing the magiſtrates, who formerly entered into their offices on the ides of May, and afterwards on thoſe of March.

IDJE, or Secja, in *Geography,* a povince of Japan.

IDIOM, Ιδιωμα, *propriety,* of ιδιος, *proper, own,* is ſometimes uſed for the peculiarities of a language; ſometimes for a dialect, or the language of ſome particular province; differing, in ſome reſpects, from the language of the nation, in general, whence it is derived.

Idioms, *Communication of.* See Communication.

IDIOPATHIC, in *Medicine,* an epithet derived from ιδιος, *proper,* or *peculiar,* and παθος, *affection,* and denoting ſuch an indiſpoſition or diſeaſe as properly and originally belongs to the part of the body in which it appears, and is not cauſed by any other or preceding diſeaſe, nor dependent on diſeaſe in any other part of the body. Hence *idiopathic* ſtands in oppoſition to *ſympathic,* or *ſymptomatic,* and *idiopathy* (an obſolete term) to *ſympathy;* the ſympathic or ſymptomatic affections being ſuch as ariſe in conſequence of ſome prior diſorder in ſome other part of the body. Thus when vomiting ariſes from inflammation in the ſtomach, it is ſaid to be *idiopathic;* when it ariſes from injury done to the brain, from a ſtone in the kidney, or from the ſtate of the uterus in pregnaney, it is *ſympathic, ſympathetic,* or *ſymptomatic* of the diſeaſed ſtate of theſe diſtant organs.

IDIOSYNCRASY, from ιδιος, *peculiar,* συν, *with,* and κρασιν, *temperament,* ſignifies the peculiar diſpoſition or conſtitution of individuals, in conſequence of which particular agents operate upon them, in a manner different from their ordinary mode of action upon perſons in general, or peculiar inclinations and averſions, whether in health or ſickneſs, manifeſt themſelves. Thus certain articles of diet, as ſhell-fiſh, bitter almonds, &c. taken in the ſmalleſt quantity, immediately excite, in ſome individuals, an eruption or raſh on the ſkin; which is aſcribed to the peculiar idioſyncraſy of ſuch individuals. From a ſimilar cauſe, the operation of medicines is variouſly modified; a ſmall doſe, which is altogether inert in one habit, will operate violently in another; a drug, which does not offend the ſtomach, but purges the bowels, in one perſon, will invariably excite vomiting in another; and ſo on, according to the different idioſyncraſy of each.

IDIOT, Ideot, in the *Engliſh Laws,* denotes a natural fool, or a perſon who hath had no underſtanding from his birth; and therefore in law preſumed never likely to attain any.

The word is originally Greek, ιδιωτης, which primarily imports a *private perſon,* or one who leads a private life, without any ſhare or concern in the government of affairs.

A perſon who has underſtanding enough to meaſure a yard of cloth, number twenty rightly, and tell the days of the week, his parents, his age, &c. is not an idiot in the eye of the law. But a man who is born deaf, dumb, and blind, is conſidered by the law in the ſame ſtate as an idiot; being ſuppoſed incapable of any underſtanding, as wanting all thoſe ſenſes which furniſh the human mind with ideas. (4 Inſt. 203. Com. Journ. 1610.) For this reaſon the cuſtody of an idiot and his lands was formerly veſted in the lord of the fee (Flet. l. i. c. 11. § 10); and therefore ſtill, by ſpecial cuſtom in ſome manors, the lord ſhall have the ordering of idiot and lunatic copy-holders (Dyer, 302. Hutt. 17. Noy. 27.); but by reaſon of the manifold abuſes of this power by ſubjects, it was at laſt provided by common conſent, that it ſhould be given to the king as the general conſervator of his people; in order to prevent the idiot from waſting his eſtate, and reducing himſelf and his heirs to poverty and diſtreſs. (F. N. B. 232.) This fixed prerogative of the king is declared in parliament by ſtatute 17 Edw. II. c. 9. which directs (in affirmance of the common law, 4 Rep. 126.) that the king ſhall have ward of the lands of natural fools, taking the profits without waſte or deſtruction, and ſhall find them neceſſaries; and after the death of ſuch idiots he ſhall render the eſtate to the heirs; in order to prevent ſuch idiots from aliening their lands, and their heirs from being diſinherited. Idiots, and perſons of non-ſane memory, are not totally diſabled either to convey or purchaſe, but *ſub modo* only. For their conveyances and purchaſes are voidable, but not actually void. The king, indeed, on behalf of an idiot, may avoid his grants or other acts. See Non-compos.

For the cuſtody of idiots, ſee Custody.

In criminal caſes idiots and lunatics are not chargeable for their own acts, if committed under theſe incapacities; not even for treaſon itſelf. 3 Inſt. 6. See Lunatic.

If a man be found by a jury an idiot, *a nativitate,* he may come in perſon into the chancery before the chancellor, or be brought there by his friends, to be inſpected and examined, whether idiot or not; and if, upon ſuch view and inquiry, it appears he is not ſo, the verdict of the jury, and all the proceedings thereon, are utterly void, and inſtantly of no effect. 9 Rep. 31.

Idiotiſm conſtitutes an incapacity for entering into the matrimonial contract, in which caſe it is not valid. (1 Roll. Abr. 357.) It was formerly adjudged that the iſſue of an idiot was legitimate, and conſequently that his marriage was valid. This muſt have been a ſtrange determination; ſince conſent is abſolutely requiſite to matrimony, and neither idiots nor lunatics are capable of conſenting to any thing. And therefore the civil law judged much more ſenſibly when it made ſuch deprivations of reaſon a previous impediment; though not a cauſe of divorce, if they happened after marriage. Ff. 23. tit. i. l. 8. and tit. ii. l. 16. See Marriage.

Idiot, *Idiota,* is alſo uſed by ancient writers for a perſon ignorant, or unlearned; anſwering to *illiteratus,* or *imperitus.*

ritus. In this ſenſe, Victor tells us, in his Chronicon, that, in the conſulſhip of Meſſala, the holy Goſpels, by command of the emperor Anaſtaſius, were corrected and amended, as having been written by idiot evangeliſts: "Tanquam ab idiotis evangeliſtis compoſita."

Idiot, or Ιδιωτης, is properly a perſon in a private ſtation; and ſo the word ſhould have been rendered, Acts, iv. 13. and not "ignorant," an epithet by no means applicable to the apoſtles Peter and John. The term Ιδιωτης is alſo uſed, not only in oppoſition to a public magiſtrate, but likewiſe as the oppoſite of a public ſpeaker: and St. Paul has uſed it, 1 Cor. xiv. 16. in the ſenſe of "hearer." From this epithet, Ιδιωτης λογω, which he himſelf has aſſumed, 2 Cor. xi. 6. ſome perſons have unwarrantably inferred that his language has a tincture of vulgarity. Whereas Ιδιωτης λογω expreſſes nothing more than a man who is no orator, who pays no attention to the elegance of language, but ſpeaks in the dialect of common converſation. In oppoſition to ιδιωτης λογω, St. Paul adds, αλλ' ου τη γνωσει, in which he was not ιδιωτης, but a teacher and apoſtle. The word may poſſibly be applied to the deviation from claſſic purity obſervable in the ſtyle of St. Paul, which an author who attempted only to pleaſe, might have cultivated with more attention; but ſetting all idioms aſide, the whole expreſſion is applicable to every man who delivers plain truths in artleſs language. A profeſſor in an univerſity, who is attentive to the accuracy of criticiſm, but regardleſs of the graces of compoſition, is in the ſtricteſt ſenſe ιδιωτης λογω αλλ' ου τη γνωσει.

IDIOTA *inquirendo vel examinando*, *De*, a writ iſſued out to the ſheriff of a county, where the king has notice that there is an idiot naturally born, ſo weak of underſtanding, that he cannot govern or manage his inheritance; directing him to call before him the party ſuſpected, and examine him, and enquire, by a jury of twelve men, whether he be an idiot or not (F. N. B. 232.); and if they find him *purus idiota*, the profits of his lands, and the cuſtody of his perſon, may be granted by the king to ſome ſubject, who has intereſt enough to obtain them. See IDIOT.

This hath been long conſidered as a great hardſhip upon private families; but few inſtances occur of the oppreſſive exertion of it.

IDIOTISM, derived from ιδιος, *proper, peculiar*, in *Grammar*, a phraſe, or manner of ſpeaking, peculiar to a language, and which cannot be rendered word for word into any other.

Idiotiſm is defined, by ſome authors, an inflection of ſome verb, or a particular conſtruction of ſome phraſe or particle, that is anomalous, and deviates from the ordinary rule of the language of the nation, but which is in uſe in ſome particular province of it. Or, it denotes the employing of *e. g.* an Engliſh word in a ſenſe which it bears in ſome provincial dialect, in low and partial uſe, and which perhaps the correſponding word bears in ſome foreign tongue, but unſupported by general uſe in our own language.

Several authors have written of the idiotiſms in the Greek and Latin languages; that is, of the particular turns in thoſe tongues which vary the moſt from each other, and from the more popular among the modern tongues; but the examples of theſe idiotiſms being borrowed from the beſt authors, idiotiſm, in this ſenſe, cannot properly be called an irregularity.

Idiotiſms, taken in the ſenſe of vulgariſms, have been unjuſtly aſcribed to the language of the New Teſtament. Whilſt we cannot contend with Palairet, Blackwall, and others, for the claſſical purity of the language of the New Teſtament, we can by no means aſſent to the declaration of Heumann, who, in his notes on the New Teſtament, aſſerts that it is written in the very worſt Greek, and in the language of the vulgar; that many words and phraſes have been uſed in a ſenſe unknown to the claſſics, and given them only by the populace; and that their meaning is not to be diſcovered by the help of the Greek writers, but merely from conjecture on the general connexion. As the charge of vulgarity has never been proved, and the idiotiſms, which are not ſo numerous as he has pretended, may be explained by other means than mere conjecture, the whole edifice which he has erected on this baſis falls of itſelf to the ground. Count Zinzendorf is no leſs miſtaken, who has pretended to diſcover in the ſermons of Chriſt certain idiotiſms, in uſe only among the common workmen of Nazareth, that is, vulgar Syriac expreſſions, tranſlated literally into Greek; and this he has attempted to ſhew in paſſages, where ſeveral commentators have diſcovered myſteries. To this charge it has been replied that rabbiniſms, not vulgariſms, muſt be ſought for in the ſermons of Chriſt; for the Jews themſelves, aſtoniſhed at a language which they did not expect from an education in Nazareth, applied to it an epithet, λογοι χαριτος, Luke, iv. 22., which belongs only to the graces of a poliſhed ſtyle. See Michaelis's Introd. to the New Teſtament, by Herb. Marſh, vol. i. p. 172.

IDITA, a name, among Hindoo mythologiſts, of Parvati, the conſort of Siva. In this, as well as in numerous other inſtances, Parvati correſponds in character with the Grecian Diana, who, under the name of Lucina, was invoked by the heathens of Europe, as preſiding over child-birth; and was in this character alſo called Ilythia. So with the Hindoos, Parvati, the Sakti or energy of Siva, the power of reproduction, is invoked, with an appropriate burnt offering of certain perfumes, by women in labour, under the title of Idita, or Ilita; words in Sanſcrit implying *praiſe*; and applied to the goddeſs, becauſe ſhe is *praiſed* by women requiring, or having received, her aſſiſtance. See PARVATI.

IDLE RIVER, in *Geography*, in Nottinghamſhire and Yorkſhire, is navigable from its fall into Trent at Stockwith, to the town of Bawtry; as mentioned, with other particulars, in our article CANAL. About 21,000 acres of the county of Derby drains to this river; the ſtrata interſected by its channels, and other particulars reſpecting the upper parts of this river, will be found in Mr. Farey's Agricultural and Mineral Report on Derbyſhire, vol. i.

IDLENESS, in *Law*. See VAGABOND.

IDOL, from ειδωλον, which ſignifies the ſame, of ειδος, *image*, *figure*, a ſtatue or image of ſome falſe god, to whom divine honours are paid, altars and temples erected, and ſacrifices offered.

The idol or image, whatever materials it conſiſted of, was by certain ceremonies called conſecration, converted into a god. While under the artificer's hands, it was only a mere ſtatue.

Three things were neceſſary in order to change it into a god; proper ornaments, conſecration, and oration. The ornaments were various, and wholly deſigned to blind the eyes of the ignorant and ſtupid multitude, who are chiefly taken with ſhow and pageantry. Then followed the conſecration and oration, which were performed with great ſolemnity among the Romans.

IDOLA, in *Geography*, a ſmall iſland in the Adriatic. N. lat. 44° 25′. E. long. 15° 10′.

IDOLATRY, from ειδωλολατρεια, which ſignifies the ſame; compoſed of ειδος, *image*, and λατρευειν, *to ſerve*, the worſhip and adoration of falſe gods; or the giving thoſe honours to creatures, or the works of man's hands, which are only due to God.

Several have written of the origin and cauſes of idolatry: among the reſt, Voſſius, Selden, Godwyn, and Tenniſon; but it is ſtill a doubt who was the firſt author of it. It is generally allowed, however, that it had not its beginning till after the deluge; and many are of opinion, that Belus, who is ſuppoſed to be the ſame with Nimrod, was the firſt man that was deified.

But whether they had not paid divine honours to the heavenly bodies before that time, cannot be determined; our acquaintance with thoſe remote times being extremely ſlender.

All that can be ſaid with certainty is, that 426 years after the deluge, when God led Terah and his family out of Chaldea, and Abraham paſſed over Meſopotamia, Canaan, the kingdom of the Philiſtines, and Egypt, it does not appear that idolatry had then got any footing in any of thoſe countries; though ſome idly pretend, that Abraham himſelf was an idolater.

The firſt mention we find made of it is in Gen. xxxi. 19. where Rachel is ſaid to have taken the idols of her father: for though the meaning of the Hebrew word *theraphim*, תרפים, be diſputed, yet it is pretty evident they were idols. Laban calls them his gods, and Jacob calls them ſtrange gods, and looks on them as abominations. See Theraphim.

The original idolatry by image worſhip is by many attributed to the age of Eber, 2247 B.C. about 101 years after the deluge, according to the Hebrew chronology; 401 years according to the Samaritan; and 531 years according to the Septuagint; though moſt of the fathers place it no higher than that of Serug; which ſeems to be the more probable opinion, conſidering that for the firſt 134 years of Eber's life all mankind dwelt in a body together; during which time it is not reaſonable to ſuppoſe that idolatry broke in upon them; then ſome time muſt be allowed after the diſperſion of the ſeveral nations, which were but ſmall at the beginning, to increaſe and ſettle themſelves; ſo that if idolatry was introduced in Eber's time, it muſt have been towards the end of his life, and could not well have prevailed ſo univerſally, and with that obſtinacy, which ſome authors have imagined. Terah, the father of Abraham, who lived at Ur, in Chaldea, about 2000 years B. C., was unqueſtionably an idolater; for he is expreſsly ſaid in ſcripture to have ſerved other gods. The eaſtern authors unanimouſly agree, that he was a ſtatuary or carver of idols; and he is repreſented as the firſt who made images of clay, pictures having only been in uſe before; and who taught that they were to be adored as gods. It is ſaid, that he was converted by Abraham. The authors of the Univerſal Hiſtory think, that the origin and progreſs of idolatry is plainly pointed out to us in the account which Moſes gives of Laban's and Jacob's parting, Gen. xxxi. 44, &c. From the cuſtom once introduced of erecting monuments in memory of any ſolemn covenants, the tranſition was eaſy into the notion, that ſome deity took its reſidence in them, in order to puniſh the firſt aggreſſors; and this might be ſoon improved by an ignorant and degenerate world, till not only birds, beaſts, ſtocks, and ſtones, but ſun, moon, and ſtars, were called into the ſame office; though uſed, perhaps, at firſt, by the deſigning part of mankind, as ſcare-crows, to over-awe the ignorant. Univ. Hiſt. vol. i. part ii. p. 853. edit. fol.

Cluverius, German. Antiq. lib. i. maintains Cain to have been the firſt idolater; and the falſe gods that he worſhipped to have been the ſtars, to whom he ſuppoſed God had left the government of the lower world; but this is mere conjecture.

Sanchoniathon, who wrote his Phœnician Antiquities, apparently with a view to apologize for idolatry, traces its origin to the deſcendants of Cain, the elder branch, who began with the worſhip of the ſun, and afterwards added a variety of other methods of idolatrous worſhip: proceeding to deify the ſeveral parts of nature, and men after their death, and even to conſecrate the plants ſhooting out of the earth, which the firſt men judged to be gods, and worſhipped as thoſe that ſuſtained the lives of themſelves and of their poſterity. Cumberl. on Sanchon. p. 219, &c.

The Chaldæan prieſts, in proceſs of time, being by their ſituation early addicted to celeſtial obſervations, inſtead of conceiving as they ought to have done concerning the omnipotence of the Creator, and mover of the heavenly bodies, fell into the impious error of eſteeming them as gods, and the immediate governors of the world, in ſubordination, however, to the Deity, who was inviſible except by his works, and the effects of his power. Concluding that God had created the ſtars and great luminaries, for the government of the world, partakers with himſelf and as his miniſters, they thought it but juſt and natural that they ſhould be honoured and extolled, and that it was the will of God they ſhould be magnified and worſhipped. Accordingly they erected temples, or *ſacella*, to the ſtars, in which they ſacrificed and bowed down before them, eſteeming them as a kind of mediators between God and man. Impoſtors afterwards aroſe, who gave out, that they had received expreſs orders from God himſelf concerning the manner in which particular heavenly bodies ſhould be repreſented, and the nature and ceremonies of the worſhip which was to be paid them. When they proceeded to worſhip wood, ſtone, or metal, formed and faſhioned by their own hands, they were led to apprehend, that theſe images had been, in ſome way or other, animated or informed with a ſupernatural power by ſupernatural means; though Dr. Prideaux imagines, that, being at a loſs to know how to addreſs themſelves to the planets when they were below the horizon, and inviſible, they recurred to the uſe of images. Dr. Prideaux's Connection, &c. book iii. p. 177. 8vo.

But it will be ſufficient to ſuppoſe, that they were perſuaded that each ſtar or planet was actuated by an intelligence; and that the virtues of the heavenly body were infuſed into the image that repreſented it. It is certain, that the ſentient nature and divinity of the ſun, moon, and ſtars, was ſtrenuouſly aſſerted by the philoſophers, particularly by Pythagoras and his followers, (Diogen. Laert. lib. viii. p. 509.) and by the Stoics (Cicero, De Nat. Deor. lib. ii. cap. 15.) as well as believed by the common people, and was indeed the very foundation of the Pagan idolatry. The heavenly bodies were the firſt deities of all the idolatrous nations, were eſteemed eternal, ſovereign, and ſupreme, and diſtinguiſhed by the title of the natural gods. Thus we find that the primary gods of the heathens in general were Saturn, Jupiter, Mars, Apollo, Mercury, Venus, and Diana; by which we can underſtand no other than the ſun and moon, and the five greateſt luminaries next to theſe. Plutarch expreſsly cenſures the Epicureans for aſſerting that the ſun and moon are void of intelligence, whom all men worſhipped. Adv. Colotem. p. 1123.

Sanchoniathon (apud Euſeb. Præp. Evan. lib. i. cap. 9.) repreſents the moſt ancient nations, particularly the Phœnicians and Egyptians, as acknowledging only the natural gods, the ſun, moon, planets, and elements; and Plato declares it as his opinion, that the firſt Grecians likewiſe held theſe only to be gods, as many of the barbarians in his time did. In Cratyl. p. 273. F. See alſo Herodot. lib. i. cap. 131. 238. lib. iii. cap. 16. Diod. Sic. lib. i. p. 10, 11. ed. Rhodom. Strab. Geogr. lib. xv. p. 732. Polyb. Hiſt. lib. vii. p. 699.

p. 699, 700. ed. Gronov. Euſeb. Præp. Ev. lib. ii. cap. 2. p. 59. Even Philo (Lib. De Somniis) and Origen (in his books Περι Αρχων) maintain, that the ſtars are ſo many ſouls incorruptible and immortal. See Farmer on Miracles, chap. iii. § 2.

Beſides theſe natural gods, the heathens believed, that there were certain ſpirits who held a middle rank between the gods and men on earth, and carried on all intercourſe between them; conveying the addreſſes of men to the gods, and the divine benefits to men. Theſe ſpirits were called dæmons. From this imaginary office aſcribed to them, they became the grand objects of the religious hopes and fears of the Pagans, of immediate dependence and divine worſhip. In the moſt learned nations, they did not ſo properly ſhare, as engroſs the public devotion. To theſe alone ſacrifices were offered, while the celeſtial gods were worſhipped only with a pure mind, or with hymns and praiſes. As to the nature of theſe dæmons, it has been generally believed, that they were ſpirits of a higher origin than the human race; and in ſupport of this opinion, it has been alleged, that the ſupreme deity of the Pagans is called the greateſt dæmon; that dæmons are deſcribed as beings placed between the gods and men; and that dæmons are expreſsly diſtinguiſhed from heroes, who were the departed ſouls of men. A late ingenious writer has, with great acuteneſs and erudition, combatted this opinion, and maintained, on the contrary, that by dæmons, ſuch as were the more immediate objects of the eſtabliſhed worſhip amongſt the ancient nations, particularly the Egyptians, Greeks, and Romans, we are to underſtand beings of an earthly origin, or ſuch departed human ſouls as were believed to become dæmons. This, he ſays, is a fact atteſted by all antiquity, whether Pagan, Jewiſh, or Chriſtian. He appeals to the teſtimonies of the heathen hiſtorians, poets, and philoſophers, and to the nature of the worſhip paid to the heathen deities. He examines the authority of the Old Teſtament writers; of the authors of the Septuagint verſion; of Philo and Joſephus; of the New Teſtament; and of the Chriſtian fathers. For a farther view of the maſterly manner in which this argument is treated, ſee Farmer on Miracles, chap. iii. § 2. paſſim. Farmer on Dæmoniacs, § 2. See Dæmon and Miracles.

Voltaire, in the art. *Idole*, Encylopédie, labours to vindicate the heathens in general from the charge of idolatry. He ſays, that there has not exiſted any people on earth who aſſumed the name of idolaters; and that no ſuch term is found in Homer, or Heſiod, or Herodotus, or any author of the Pagan religion; and that no law was ever enacted, requiring the ultimate worſhip of idols. The Greeks and Romans, he ſays, were gentiles and polytheiſts, but not idolaters; they worſhipped the gods by means of theſe images, and not the images themſelves; and were no more chargeable with idolatrous worſhip than the votaries of the Romiſh church. He alſo extends his laboured and ſpirited vindication to the Perſians, Sabians, Egyptians, Tartars, and Turks; and obſerves, that it is an abuſe of terms to call thoſe people idolaters who worſhip the ſun and ſtars, &c.

Although the Hindoo inhabitants of the Eaſt Indies deny the charge of idolatry, uſing the ſame deſcription of arguments that are ſo inconcluſively urged by European practitioners of that dangerous ſpecies of adoration, in defence of image worſhip, it is ſtill evident that the maſs of the Hindoos are addicted to groſs idolatry. Scarcely were the gods of Rome more numerous, certainly leſs whimſical and monſtrous, than their brethren, or perhaps parents, at Benares. It is, however, reaſonable to conclude, that among the thinking portion of both cities were many individuals who, contemplating, although unaided by revelation imperfectly, the attributes of the archetype, contemned the artifices by which prieſtcraft had contrived to direct the worſhip of their deluded flock, to types and ſymbols; thus rendering myſterious what is in itſelf plain, that the initiated alone might poſſeſs the key of the myſtery they had invented and taught; be the intereſted medium through which the deity muſt be propitiated, and themſelves dimly ſeen with awe amid the obſcurity of their own creating.

In Moor's Hindoo Pantheon are given exact portraits of many ſcores of deities worſhipped, with appropriate ceremonies, and under various forms and names, by different ſects of that groſsly ſuperſtitious race. Some of theſe portraits are of images coloſſal, to a degree perhaps unequalled by any exiſting ſtatues. (See the article Jaina.) Of others, exceedingly diminutive, ſome are of metallic caſts, and apparently extremely ancient, which exhibit every gradation of art from the rudeſt imaginable ſpecimen, up to a very reſpectable portion of ſkill; and even to elegance of form, and to eaſe and expreſſion of attitude.

Some writers on the religious or ſuperſtitious practices of the Eaſt Indians, have related, that certain of their deities muſt, or muſt not, be of this or that metal or wood: but admitting that the Hindoos recognize practically the notion that *ex quovis ligno*, &c. Major Moor, in his Hindoo Pantheon, proves that the particulars related on that point are erroneous; as he has ſeen, and indeed gives frequent examples of images made of the very material that, in reſpect of ſuch individual deity, was ſaid to be unlawful. Another point, too, connected with this ſubject, he has corrected: for, prior to the publication of the Hindoo Pantheon, and indeed ſince, it has been aſſerted that the Hindoos admit no image of Brahma, the perſonification of the deity's creative power. (See Brachmans and Siva.) This is not true of Brahma; of him ſeveral repreſentations from images are given in that work: but of Brahm, the deity, the one omnipotent, of whoſe attributes or powers Brahma, Viſhnu, and Siva are perſonifications, no images or repreſentations are extant among the Hindoos. In their ſcripture, the Veda, (ſee Veda,) it is declared, that "of Him whoſe glory is ſo great, there is no image." The word "image" is not, perhaps, in this inſtance, to be taken in its moſt confined ſenſe.

This awful reverence of the deity prevails, it may be ſaid, throughout and beyond India, in prevention of any "graven image or likeneſs" of him being attempted, and we cannot but think the interdiction grounded on that feeling highly ſalutary. Among the Mahometans, indeed, the reverential feeling is carried farther, and to an extent not perhaps neceſſary; for as well as all repreſentation of the perſon of God, the prohibition extends alſo to that of the prophet, and no picture or ſtatue of Mahomet is in exiſtence.

It is, to return to Hindoo idols, a circumſtance very creditable to the exterior morality of that extraordinary people, that no indecent exhibitions are even witneſſed in their mythological delineations or ſculptures. Major Moor ſays, (Hin. Pan. page 383.) that among the hundreds, perhaps thouſands, of mythological ſubjects that came under his notice within the laſt few years of his reſidence in India, not one was, in any reſpect, offenſive to decency. Such images, he believes, are never ſeen in India; at any rate they are certainly very rare, or among ſo many ſubjects ſome inſtance of their exiſtence muſt have occurred. The Linga and Yoni even, however groſs abſtractedly, are not indecently repreſented; their alluſions are not obtruſive, but are veiled in myſterious decency, and muſt, thus happily hidden from the vulgar eye, be extorted by philoſophical curioſity. See Linga and Yoni.

The principal cauſes that have been aſſigned for idolatry are, the indelible idea which every man has of God, and the evidence which he gives of it to himſelf; an inviolable attachment to the ſenſes, and a habit of judging and deciding by them, and them only; the pride and vanity of the human mind, which is not ſatisfied with ſimple truth, but mingles and adulterates it with fables; the ignorance of antiquity, or of the firſt times, and the firſt men whereof we have but very dark and confuſed knowledge by tradition, they having left no written monuments or books; the ignorance and change of languages; the ſtyle of the oriental writings, which is figurative and poetical, and perſonifies every thing; the ſuperſtition, ſcruples, and fears, inſpired by religion; the flattery of writers; the falſe relations of travellers; the fictions of poets; the imaginations of painters and ſculptors; a ſmattering of phyſics, that is, a ſlight acquaintance with natural bodies and appearances, and their cauſes; the eſtabliſhment of colonies, and the invention of arts, miſtaken by barbarous people; the artifices of prieſts; the pride of certain men, who have affected to paſs for gods; the love and gratitude borne by the people to certain of their great men and benefactors; and finally, the Scripture themſelves ill underſtood. One great ſpring and fountain of all idolatry, in the four quarters of the globe, ſays ſir William Jones (Aſ. Reſ. vol. i. p. 426.), was the veneration paid by men to the ſun, or vaſt body of fire, which "looks from his ſole dominion like the god of this world;" and another, the immoderate reſpect ſhewn to the memory of powerful or virtuous anceſtors and warriors, of whom the ſun and the moon were wildly ſuppoſed to be the parents. See IMAGE.

IDOLKA, in *Geography*, a town of Lithuania, in the palatinate of Troki; 26 miles S.W. of Troki.

IDOLOPŒIA, Ειδολοποίια, in *Rhetoric*, a ſpecies of proſopopœia, where dead perſons are ſuppoſed to ſpeak.

IDOLOTHYTA, Ειδωλοθυτα, things offered in ſacrifice to idols; concerning the uſe of which, the apoſtle Paul lays down rules in 1 Corinth. chap. viii. ver. 4. 7. and 10.

IDOLS, *Iſlands of*, in *Geography*, a cluſter of ſmall iſlands in the Atlantic, near the coaſt of Africa. N. lat. 8° 50′.

IDOMENÆ, in *Ancient Geography*, a town of Macedonia, placed by Ptolemy in Emathia, and repreſented by Hierocles as an epiſcopal city.

IDOMENT, in *Geography*, a town of European Turkey, in the province of Macedonia; 26 miles N.N.E. of Edeſſa.

IDRA, a ſmall iſland in the Adriatic. N. lat. 44° 6′. E. long. 15° 28′.

IDRAULICO, *Ital.* a word expreſſing every kind of ſonorous inſtrument, the tones of which are produced by the compreſſion of the air by water. See HYDRAULICON.

IDRE, in *Geography*, a town of Sweden, in Dalecarlia; 120 miles N.W. of Fahlun.

IDRIA. See HYDRIA.

IDRIA, *Ban of*, a diſtrict of Carniola, immediately ſubject to the chamber of Inner Auſtria, at Gratz. The quickſilver mines of Idria are celebrated in natural hiſtory, poetry, and romance. They were diſcovered in the year 1499; and the hill of Vogelberg has annually yielded more than 300,000 pounds weight of mercury. The common ore is cinnabar; but ſometimes the pure quickſilver runs through the crevices. Idria is ſurrounded with woody hills; and the Vogelberg on the E. produces oaks and broom, while the interior conſiſts of red clay, calcareous rock, and a black ſoft ſlate, which covers the metallic veins in a ſouthern direction. The deep deſcent is by ladders and ſtairs of ſtone; and the length of the galleries is computed at 316 paces, or 1580 feet. The operations in theſe vaſt mercurial caverns being pernicious to health, are ſometimes allotted as a puniſhment to criminals.

IDRIAS, in *Ancient Geography*, a canton of Phrygia, in the confines of Caria.—Alſo, a town of Caria.

IDRO, in *Geography*, a town of Italy, in the department of Mela, on a lake; 16 miles N N.E. of Breſcia.

IDSTEIN, a town of Germany, in the principality of Naſſau-Weilburg; 12 miles N. of Mentz. N. lat. 50° 12′. E. long. 8° 12′.

IDSU, a province of Japan, on the S. coaſt of the iſland of Niphon.

IDSUME, a town of Japan, in the iſland of Niphon; 140 miles W.N.W. of Meaco. N. lat. 34 95′. E. long. 131° 50′.

IDULIA, in *Antiquity*, certain eggs offered to Jupiter on the ides of every month. They were ſo called from their being offered on the ides.

IDUMÆA, in *Ancient Geography*, or *Land of Edom*, a country of Aſia, on the confines of Paleſtine and Arabia, or rather comprehending parts of Paleſtine and Arabia; having Judea on the N., Egypt and a branch of the Red ſea on the W., the reſt of Arabia Petræa on the S., and the deſert of Arabia on the E. Its extent varied in different periods of time. Eſau, or Edom, from whom it derived its name, and his deſcendants, ſettled along the mountains of Sein on the E. and S. of the Dead ſea, from whence they ſpread themſelves by degrees through the W. part of Arabia Petræa, from that ſea quite to the Mediterranean. (See EDOM.) In the time of Moſes, Joſhua, and even of the Jewiſh kings, they were hemmed in by the Dead ſea on one ſide, and the Eleanitic gulf on the other; but during the Jewiſh captivity at Babylon, they advanced further N. into Judea, and ſpread themſelves as far as Hebron in the tribe of Judah, taking poſſeſſion of what had formerly been the whole inheritance of the tribe of Simeon, and half of that which had been the inheritance of the tribe of Judah; till at length going over to the religion of the Jews they became incorporated with them into the ſame nation. Joſephus gives this account of their converſion. Hyrcanus took alſo Adora and Mariſſa, cities of Idumæa; and having ſubdued all the Idumæans, he permitted them to remain in the country, upon condition that they would be circumciſed and uſe the Jewiſh laws, and ſubmit to live in every reſpect as Jews. From that time, in the 129th year B.C., they became Jews. Strabo, and after him many later geographers, had divided it into Eaſtern and Southern Idumæa, with regard to its ſituation from Paleſtine. The capital of the former was called "Bozrah," or "Boſſra," and that of the latter "Petra," or "Jactael." Joſephus, with regard to its extent at different periods, diſtinguiſhes it, when at the longeſt, by the epithet of "Great," in oppoſition to its more narrow boundaries, and places Hebron among the Idumæan cities. He ſeems alſo to diſtinguiſh between Lower and Upper Idumæa; but, upon the whole, the country is repreſented as hot, dry, mountainous, and in ſome parts barren; the mountains exhibiting dreadful rocks and caverns like the ſouthern part of Judah, which is called a deſert, full of ſuch rocky receſſes and caverns, which became the lurking-places of thieves and banditti. Concerning its ancient hiſtory, ſee the article EDOM.

Of this country little has been ſaid by modern geographers and travellers, except that it lies moſtly waſte and uncultivated. It is inhabited by wild Arabs, with whom Europeans have little or no intercourſe. The country is now in poſſeſſion of the Turks; though it doth not appear that they keep any garriſons in it, except on the ſea-coaſt, for ſecuring the road between Egypt and Paleſtine. Among the caſtles mentioned by travellers is Lariſſa, to which we may add Salka, near the frontiers of Egypt, the reſidence of the pacha of this province. The Turks keep ſoldiers alſo at Tina, a town on the ſea-ſhore; Catio, a garriſoned caſtle, where a toll is exacted from all merchants and paſſengers, ſituated in a deſert; Tor, a ſmall ſea-port and caſtle near the ſtraits of Suez, where an aga commands the garriſon.

IDYLLION, in *Poetry*, a little poem, containing the deſcription or narration of ſome adventures.

The word is derived from the Greek ειδυλλιον, diminutive of ειδος, *figure, repreſentation;* becauſe this poetry conſiſts in a lively natural image or repreſentation of things.

The learned biſhop Lowth, in his "Prælectiones, &c." defines an idyllion to be a poem of moderate length, of an uniform, middle ſtyle, chiefly diſtinguiſhed for elegance and ſweetneſs; regular and clear as to plot, conduct, and arrangement.

Theocritus is the oldeſt author who has written idyllions. The Italians imitate him, and have brought the idyllion into modern uſe.

The idyllions of Theocritus have a peculiar delicacy; they appear with a clowniſh, ruſtic kind of ſimplicity, but are full of the moſt exquiſite beauties; they ſeem drawn from the breaſt of nature herſelf, and to have been dictated by the graces.

The idyllion is a kind of poetry which paints the objects it deſcribes; whereas the epic poem relates them, and the dramatic acts them. The modern writers of idyllions do not keep up to that original ſimplicity obſerved by Theocritus; the people of our days would not bear an amorous fiction, reſembling the awkward gallantries of our peaſants. Boileau obſerves, that the ſhorteſt idyllions are uſually the beſt.

The modern idyllions differ from thoſe of the ancients, by introducing none but allegorical ſhepherds or courtiers diſguiſed in their dreſs; whereas thoſe of the ancients repreſent true ſhepherds. Mr. Hardion obſerves, that the taſte of the preſent age is ſo very different from that of the ancients in this reſpect, that he would not take upon him to give a literal tranſlation of Theocritus's idyllions; not that he reckons them bad in themſelves, nor that he condemns the rules followed in their compoſition; but becauſe the rules that were good at the time thoſe poems were written, would, in the preſent age, be reliſhed but by very few.

The ſubject of idyllions, as being low of itſelf, requires the greateſt elegance of diction to ſet it off. Mr. Hardion is of opinion, that Theocritus has the advantage of Virgil in this reſpect; obſerving always the ſtructure peculiar to paſtoral poems, which conſtitutes one of its chief beauties. This ſtructure requires that the fourth foot of every verſe ſhould be a dactylus, and ſometimes alſo the firſt, when it can be done without affectation. Beſides, it is alſo neceſſary that theſe dactyli ſhould be made without any cæſura following; and, if poſſible, there ſhould be a reſt in the ſenſe after each dactyle, which would add greatly to the regularity and perfection of each verſe. Such are the following verſes of Theocritus and Virgil:

> "Ειπε μοι, ω Κορυδων, τινος αι βοες; ηρα Φιλωνδα."
> Theoc. Idyl. iv. ver. 1.
>
> "Dic mihi, Damæta, cujum pecus? An Melibæi?"
> Virg. Ecl. iii. ver. 1.

This ſtructure in paſtoral poems gives a vivacity, which is wonderfully pleaſing in the mouth of a ſhepherd. Theſe rules are obſerved by Theocritus with all the exactneſs poſſible; but by Virgil ſeldom; which is rather to be imputed to the genius of the Latin tongue than his want of ability; it being leſs copious, bold, and pliant, than the Greek. Mem. Acad Inſcript. tom. vi. p. 255, 256.

The invention of the idyllion is aſcribed to Daphnis, who, by his extraordinary genius, ſays Diodorus Siculus, "invented the bucolic poem and ſong, in the form it continues to appear in at preſent in Sicily." This paſſage is conſiderable, as it fully aſcertains the origin of the idyllion, ſuch as it appears in Theocritus, and thoſe that have imitated him.

After Daphnis, another Sicilian ſhepherd, called Diomus, made himſelf famous for his paſtoral poems. Next came Steſichorus, who, according to Ælian, was the firſt that made the misfortunes of Daphnis the ſubject of his ſongs. He lived, as ſome chronologers will have it, in the time of Phalaris, about 550 years before the vulgar era; and laſtly, ſome ages after this Theocritus appeared, who, forming himſelf on theſe firſt models, ſo far excelled as to give paſtoral poetry all the perfection it was capable of receiving. Mem. Acad. Inſcript. tom. ix. p. 101.

Biſhop Lowth, already cited, produced from the writings of the Hebrews many perfect examples of this kind of poem. The firſt of thoſe poems which deſerve notice are the hiſtorical pſalms, in celebration of the power and other attributes of the Deity, manifeſted in the miracles which he performed in favour of his people. One of the principal of theſe occurs in the 78th pſalm; the ſtyle of which is ſimple and uniform, but the ſtructure is poetical, and the ſentiments occaſionally ſplendid. Of a ſimilar kind are the 105th and 106th pſalms, very much reſembling the 78th, as well in the ſubject as in the ſtyle. The mixture of eaſe and grace, diſplayed in the exordium, is the ſame in all. Theſe pſalms, both in plot and conduct, bear a ſurpriſing analogy to the hymns of the Greeks; a ſpecies of poetry which was in very early uſe among them, and almoſt entirely appropriated to the celebration of their religious rites. The ſubjects in general were the origin of the gods, the places of their birth, their achievements, and the other circumſtances of their hiſtory. Such are all the poems of this kind now extant in the Greek; ſuch are the elegant hymns of Callimachus, as well as thoſe which are attributed to Homer. The poem of Theocritus, entitled the "Dioſcouri," or the praiſe of Caſtor and Pollux, is alſo a genuine hymn, and very elegant in its kind; nor is it improperly claſſed among the Idylliums, which include all of this ſpecies. The 136th pſalm may be referred to the claſs of thoſe of the hiſtorical kind. The exordium commences with this well known diſtich:

> "Glorify JEHOVAH, for he is good;
> For his mercy endureth for ever:"

which, according to Ezra (iii. 10, 11.), was commonly ſung by alternate choirs. Here the latter line of the diſtich, being added by the ſecond choir, and ſubjoined to every verſe (which is a ſingular caſe), forms a perpetual Epode. Hence we may collect the whole nature and form of the intercalary verſe, or burthen of the ſong; which expreſſes in a clear, conciſe, and ſimple manner ſome particular ſentiment, that ſeems to include virtually the general ſubject or deſign of the poem; and it is thrown in, at proper intervals, according to the nature and arrangement of it, for the ſake of impreſſing the ſubject more firmly upon the mind. That the intercalary verſe is perfectly congenial to the Idyllium, is evident from the authority of Theocritus, Bion, Moſchus, and even of Virgil. The 107th pſalm may be undoubtedly enumerated among the moſt elegant monuments of antiquity; and it is chiefly indebted for its elegance to the general plan and conduct of the poem. Another example might be ſelected from Iſaiah; for by uniting the concluſion of the ninth chapter with the beginning of the tenth, ingeniouſly ſeparated by the common diviſion into chapters, we ſhall find a complete and connected prophecy againſt the kingdom of Iſrael or Samaria. (Iſ. ix. 8. x. 4.) It is replete with terror and ſolemnity, and poſſeſſes a degree of force and ſublimity to which the Idyllium ſeldom riſes; though it preſerves the form of the Idyllium ſo perfect and expreſs, that it cannot with propriety be referred to any other claſs. Beſides the inſtances already mentioned there are others, and probably not a few (in the book of Pſalms particularly), which may be equally accounted of the Idyllium ſpecies. To this claſs belong more eſpecially thoſe in which ſome particular ſubject is treated in a more copious and regular manner than is uſual in compoſitions ſtrictly lyric. Such is the 104th pſalm, in which the poet embelliſhes his noble ſubject with the cleareſt and moſt ſplendid colouring of language; and with imagery the moſt magnificent, lively, diverſified, and pleaſing, at the ſame time ſelect, and happily adapted to the ſubject. Nothing, ſays our learned author, of the kind extant, can be conceived more perfect than this hymn, whether we conſider it with reſpect to its intrinſic beauties, or as a model of that ſpecies of compoſition. The Greek hymns conſiſted chiefly of fables, and theſe fables regarded perſons and events, which were neither laudable in themſelves nor greatly to be admired: "indeed," ſays the ingenious prelate, "I do not recollect any that are extant of this ſublime nature, except that of the famous ſtoic Cleanthes, which is inſcribed to Jove, that is, to God the Creator, or, as he expreſſes himſelf, "to the Eternal Mind, the Creator and Governor of nature." It is doubtleſs a moſt noble monument of ancient wiſdom, and replete with truths not leſs ſolid than magnificent."

The hymn of David, juſt mentioned, deſervedly occupies the firſt place in this claſs of poems; and that which comes the neareſt to it, as well in the conduct of the poem as in the beauty of the ſtyle, is the 139th pſalm, which, though perhaps excelled by the former in the plan, diſpoſition, and arrangement of the matter, is not in the leaſt inferior in the dignity and elegance of the figures and imagery.

IDYMA, or Idymus, in *Ancient Geography*, a town and alſo a river of Aſia Minor, in Caria; called *Idimus* by Ptolemy.

IDYRUS, a town and river of Aſia, in Pamphylia.

JEACOCK, Samuel, in *Biography*, brother to the celebrated preſident of the Robin-Hood ſociety, was by trade a baker, and carried his loaves to his cuſtomers on his own ſhoulders. He would not have been mentioned here among muſical dilettanti merely for being fond of muſic, but for a peculiar talent of which we have never known any other perſon poſſeſſed. This worthy tradeſman played a little on ſeveral inſtruments, but chiefly the tenor; and at the Madrigal ſociety, eſtabliſhed in his time, he uſed to ſing the baſe part. He was an excellent judge of inſtruments played with the bow; their ſtrings, tone, and conſtruction; found out their defects, and often cured them. He was one of the beſt ringers and ſwimmers of his time; and even when in years, was very expert in other manly exerciſes. But his moſt extraordinary talent was the being able, without knowing the names of the keys of the harpſichord, to play upon it, with his 10 fingers, without the leaſt heſitation, any number of changes in a peal of 10 bells, which changes amounted to 3,628,800. After ſeeing as well as hearing this aſtoniſhing performance on our own inſtrument, we tried to expreſs, in muſical notation, the changes in favourite peals on eight or ten bells, but were totally unable to play them even with the notes before us, or to meet, among the greateſt performers on the harpſichord, with any one that could. The melodies produced by theſe changes are ſo wild and unlike any thing to which the hand or the eye is accuſtomed, that they are as difficult to a conſummate maſter, as the firſt tune to a child who has juſt learned the gammut. See Bells and Changes.

JEALOUSY, in *Ethics*, is that peculiar uneaſineſs which ariſes from the fear that ſome rival may rob us of the affections of one whom we greatly love, or ſuſpicion that he has already done it. The firſt ſort of jealouſy is inſeparable from love, before it is in poſſeſſion of its object: the latter is often unjuſt, generally miſchievous, always troubleſome.

Jealousy, *Waters of*. See Waters.

JEAN, St., in *Geography*, an iſland of Swiſſerland, in Bienne lake.—Alſo, a town of Canada, on the left bank of St. Laurence. N. lat. 46° 39′. W. long. 71° 33′.—Alſo, a town of Canada, on the right bank of St. Laurence. N. lat. 47° 12′. W. long. 70° 12′.

Jean *d'Angely, St.*, a town of France, and principal place of a diſtrict, in the department of the Lower Charente. The place contains 5400, and the canton 13,827 inhabitants, on a territory of 222½ kiliometres, in 20 communes. The chief article of trade in this place is brandy, and it has a manufacture of woollen ſtuffs. N. lat. 45° 59′. W. long. 0° 25′.

Jean *d'Aulph, St.*, a town of France, in the department of the Leman, and chief place of a canton, in the diſtrict of Thonon. The place contains 1918, and the canton 6344 inhabitants, on a territory of 187½ kiliometres, in 6 communes.

Jean *de Bournay, St.*, a town of France, in the department of the Iſére, and chief place of a canton, in the diſtrict of Vienne; 12 miles E. of Vienne. The place contains 2848, and the canton 11,733 inhabitants, on a territory of 237½ kiliometres, in 14 communes.

Jean *de Breveley, St.*, a town of France, in the department of Morbihan, and chief place of a canton, in the diſtrict of Ploermel. The place contains 2573, and the canton 11,337 inhabitants, on a territory of 262½ kiliometres, in 7 communes.

Jean *de Daye*, a town of France, in the department of the Channel, and chief place of a canton, in the diſtrict of St. Lô. The place contains 124, and the canton 8197 inhabitants, on a territory of 132½ kiliometres, in 17 communes.

Jean *du Gard*, a town of France, in the department of the Gard, and chief place of a canton, in the diſtrict of Alais. The place contains 3203, and the canton 5101 inhabitants, on a territory of 87½ kiliometres, in 3 communes.

Jean *de Loſne*, a town of France, and principal place of a diſtrict, in the department of the Côte d'Or; 15 miles S.E. of Dijon. N. lat. 47° 5′. E. long. 5° 19′.

Jean *de Luz, St.*, a ſea-port town of France, in the department of the Lower Pyrenées, and chief place of a canton, in the diſtrict of Bayonne, ſituated in the bay of Biſcay; the harbour of which has lately been improved; 10 miles S.W. of Bayonne. The place contains 2553, and the canton 8457 inhabitants, on a territory of 155 kiliometres, in 9 communes. N. lat. 43° 23′. W. long. 1° 35′.

Jean *de Maurienne, St.*, a town of France, and chief place of a diſtrict, in the department of Mont Blanc, lately capital of a county in Savoy, and the ſee of a biſhop, near the union of the rivers Arve and Aral: beſides the cathedral it has two pariſh churches and a convent; 27 miles S.E. of Chambery. The place contains 2258, and the cantons

17,453 inhabitants, on a territory of 440 kiliometres, in 20 communes. N. lat. 45° 16′. E. long. 6° 16′.

JEAN *du Mont*, a town of France, in the department of the Vendée, ſituated near the ſea-coaſt; 7 miles W.S.W. of Challons.

JEAN *Pied-de-Port, St.*, a town of France, in the department of the Lower Pyrenées, and chief place of a canton, in the diſtrict of Mauleon, having a citadel on a rock, at the entrance of one of the paſſages of the Pyrenées; 12 miles S.E. of Bayonne. The place contains 1286, and the canton 8205 inhabitants, on a territory of 417½ kiliometres, in 20 communes. N. lat. 43° 9′. W. long. 1° 10′.

JEAN *en Rayans*, a town of France, in the department of the Drôme, and chief place of a canton, in the diſtrict of Valence; 18 miles E.N.E. of Valence. The place contains 2808, and the canton 6791 inhabitants, on a territory of 232½ kiliometres, in 10 communes.

JEAN *de Soleymieu, St.*, a town of France, in the department of the Loire, and chief place of a canton, in the diſtrict of Montbriſon; 7 miles S. of Montbriſon. The place contains 574, and the canton 7964 inhabitants, on a territory of 180 kiliometres, in 16 communes.

JEAN *de Vergt, St.*, a town of France, in the department of the Dordogne, and chief place of a canton, in the diſtrict of Perigueux. The place contains 786, and the canton 9098 inhabitants, on a territory of 277½ kiliometres, in 18 communes.

JEAN *de Vertus, St.*, a town of France, in the department of the Iſére; 24 miles S.S.E. of Grenoble.

JEAN-CAPELLE, in *Ichthyology*, a name given by Ruyſch, and ſome others, to the fiſh called by authors the *faber Indicus*, or Indian doree; and more expreſſively named by Artedi the zeus with a forked tail.

JEAN-DE-BARRE, in *Geography*, an iſland of Africa, in the kingdom of Senegal, about 15 miles in circumference.

JEANNIN, PETER, in *Biography*, was born in 1540, and brought up to the profeſſion of the law. He was, at an early age, appointed advocate in the parliament of Burgundy, and ſoon diſtinguiſhed himſelf by his eloquence and force of reaſoning. He was afterwards appointed agent for the affairs of the province. In this ſituation he nobly reſiſted, with all his power, the order for perpetrating, at Dijon, the maſſacre of the Proteſtants on St. Bartholomew's day, which took place in Paris and other cities. This was particularly meritorious in him who was a moſt zealous Catholic, ſo much ſo that he joined the leaguers in ſupport of their religion; a circumſtance which proved highly ſerviceable to the kingdom; for, being deputed by the duke of Mayenne to negociate with Philip of Spain, the declared protector of the league, he ſoon diſcovered that the real deſign of that prince, in ſupporting the civil war in France, was to gain poſſeſſion of ſome of its beſt provinces. On his return, therefore, he exerted himſelf to detach the duke from the Spaniards, and to acknowledge his lawful ſovereign. Henry IV. made him a member of his council, and kept him at his court, where nothing was undertaken without his advice. He died at the age of 82, in the year 1622. This reſpectable man witneſſed the ſucceſſion of ſeven kings to the throne of France. His Memoirs and Negociations were publiſhed, in 1659, at Paris, in folio; but they have ſince been printed in four volumes 12mo. They are regarded as excellent guides for the management of important and difficult concerns Moreri.

JEAN-RABEL, in *Geography*, a town of the iſland of Hiſpaniola, at the mouth of a river on the N.W. coaſt; 10 miles N.E. of St. Nicholas Mole. N. lat. 19 56′. W. long. 74′.

JEATPOUR, a town of Bengal; 20 miles N. of Kiſhenagur.

JEBAKSHOUR, a town of Turkiſh Armenia; 45 miles S. of Arzengan.

JEBARA CUNACA, a town of Japan, in the iſland of Niphon; 20 miles N.N.E. of Jedo.

JEBB, SAMUEL, M.D., in *Biography*, a man of learning, and editor of ſeveral works, was born at Nottingham. He was entered of Peterhouſe, Cambridge, and, imbibing the ſentiments of the non-jurors, he accepted the office of librarian to Jeremy Collier. During his reſidence in college, he publiſhed a tranſlation of "Martin's Anſwers to Emelyn," 1718; and an edition of "S. Juſtini Martyris Dialogus cum Tryphone," Gr. Lat. 8vo. Lond. 1719. When he quitted Cambridge he married the daughter of an eminent apothecary in London, who gave him inſtructions in pharmacy. Still, however, he continued his literary purſuits; and in 1722 undertook the editorſhip of a periodical work, entitled "Bibliotheca Literaria," which only extended to 10 numbers, notwithſtanding it was ſupported by the contributions of ſeveral diſtinguiſhed ſcholars. He likewiſe edited the following works: "De Vita et Rebus geſtis Mariæ Scotorum Reginæ," 8vo. 1725, which was compiled from original records and authors of credit; "Ariſtidis Orationes, cum Notis," in two volumes 4to. Oxford, 1728, which is a valuable edition of this Greek orator; "Joannis Caii Britanni de Canibus Britannicis, de variorum Animalium et Stirpium, &c. de Libris propriis, de Pronunciatione Græcæ et Latinæ Linguæ," 8vo. 1729; "Baconi Opus Majus," folio, 1733; "Hodii Lib. ii. de Græcis illuſtribus, &c." 8vo. 1742; to which he prefixed a Latin diſſertation on the life and writings of the author. It is not known at what period Mr. Jebb received the degree of M.D. He ſettled at Stratford, in Eſſex, and continued to practice medicine there till late in life, when he retired, with a moderate fortune, into Derbyſhire, where he died in 1772. Gen. Biog. Nichols's Anecdotes of Bowyer.

JEBB, *Sir* RICHARD, Baronet, M.D. was born at Stratford, in Eſſex, where his father, the ſubject of the preceding article, practiſed as a phyſician. He had a liberal claſſical education at Oxford; but being by principle a non-juror, from his father, he could not be matriculated, nor take any degree at that univerſity. He afterwards ſtudied medicine in London and in Leyden; and from the univerſity in the latter city he obtained the degree of doctor of medicine. Upon ſettling in London he entered as licentiate of the College of Phyſicians; and in the year 1768 he was elected a fellow of that body. He was for ſome time phyſician both to St. George's hoſpital, and to the Weſtminſter infirmary. As a practitioner he became ſo eminent, that when the duke of Glouceſter fell dangerouſly ill in Italy he was requeſted to go abroad to attend the health of that prince; and on this occaſion his conduct gave ſo much ſatisfaction that he was called abroad a ſecond time to viſit the ſame prince, on a future illneſs, in 1777. About this time he was made phyſician-extraordinary to the king; and in 1780 was appointed phyſician in ordinary to the Prince of Wales. He not only held theſe offices about the royal family, but was for ſeveral years one of the phyſicians chiefly employed by them. Upon the death of ſir Edward Wilmot, in 1768, he was appointed one of the phyſicians in ordinary to his majeſty; but this office he did not enjoy many months; for, being in attendance on two of the princeſſes, who were affected with the meaſles, he was ſuddenly attacked with a fever in their apartments at Windſor, and fell a victim to the diſeaſe, after a few days illneſs, on the 4th day of July, 1787, in the 58th year of his age.

Jebb, John, an eminent ſcholar, divine, and phyſician, was the eldeſt ſon of the Rev. John Jebb, dean of Caſhell, ſprung from a family in Nottinghamſhire, and was born at London in the year 1736. Having finiſhed his early education at ſeveral ſchools in England and Ireland, he was admitted a penſioner of Trinity-college, Dublin, in 1753, and in the following year entered at St. Peter's college, Cambridge, where, in 1757, he took the degree of B.A., and commenced the office of private tutor. In 1760 he proceeded to the degree of M.A. and was confirmed fellow. In 1762 he received deacon's orders, and in the following year thoſe of prieſt. He was elected by the univerſity to the rectory of Ovington, in Norfolk, in 1764, and in the ſame year married Ann, daughter of the Rev. J. Torkington and of lady Dorothy Sherrard, with whom he lived in happy union of ſentiment and affection to the time of his death. In 1765 he publiſhed, in conjunction with two friends, *viz.* the Rev. Robert Thorpe and the Rev. George Wollaſton, a work held in high eſtimation at Cambridge and elſewhere, and entitled "Excerpta quædam é Newtoni Principiis Philoſophiæ Naturalis, cum notis Variorum," 4to. On the return of our author to Cambridge in 1766, he commenced an important era of his life. Reſuming his office as private tutor, and reading occaſional lectures, he entered with ardour into the concerns of the univerſity. In 1768 he began a courſe of lectures on the Greek Teſtament, in the proſecution of which he avowed opinions of a very liberal kind; and in his political ſentiments he ranked himſelf among the advocates for popular meaſures. In both theſe reſpects he became the undiſguiſed and zealous advocate of reformation both in church and ſtate. Having in 1769 been preſented to the vicarage of Flixton, near Bungay, and to the united rectories of Homersfield and St. Croſs, and being alſo nominated chaplain to his wife's relation, the earl of Harborough, he from this time divided his reſidence for ſome years between Bungay and Cambridge. In 1770 he publiſhed a "Short Account" of his theological lectures, which had ſubjected him to ſome obloquy, and in 1772 he re-edited this "Account" with large additions. About this time he took an active part with thoſe who ſought relief in the matter of eccleſiaſtical ſubſcription, and appeared as an advocate of the cauſe in the Whitehall Evening Poſt, under the aſſumed appellation of "Paulinus." His letters were collected in a pamphlet, publiſhed in 1772. He was alſo anxious for the improvement of academical education in Cambridge; with a view to which he wiſhed to eſtabliſh annual examinations. But all his liberal efforts and plans proved ineffectual with regard to their main object, although it has been thought that they were not altogether fruitleſs as to their general influence on the ſtate of the univerſity. Soon after this time, Mr. Jebb, actuated by an integrity and zeal which did him great honour, determined to withdraw from the public ſervice of a church, the eſtabliſhed doctrines of which he diſapproved; and accordingly in September 1775, he reſigned all his livings, and in September 1776, he finally left Cambridge. He was now entering anew, as it were, into life; and with a view to an honourable and uſeful mode of exerciſing his talents, and of procuring a ſubſiſtence, he determined, under the advice of his relation ſir Richard Jebb, to aſſume the medical profeſſion. The neceſſary qualifications it would not require much time to attain, when we conſider the comprehenſive mind and the indefatigable aſſiduity of Mr. Jebb; and therefore after devoting his attention for ſome time to the ſtudies connected with the profeſſion which he had in view, he obtained in 1777 a diploma of M.D. from St. Andrews, and was admitted a licentiate of the London college, and commenced practice in February 1778, purſuing at the ſame time various means of medical improvement. In this year he was elected a fellow of the Royal Society. In his political career he connected himſelf with thoſe who were adverſe to the American war; and as he was always ardent in every cauſe which he deemed of importance, his zeal on this occaſion obſtructed his profeſſional ſucceſs, though he had many friends who thought highly of his talents, and who much wiſhed to ſerve him. Of his attention to the duties of his profeſſion he gave evidence to the public in 1782 by a work entitled "Select Caſes of the Diſorder commonly termed the Paralyſis of the Lower Extremities; to which is added A Caſe of Catalepſy." Theſe caſes tend to ſupport the practice of Mr. Pott in applying cauſtics to the tumour of the ſpine in the above-mentioned paralyſis. The ardour of Dr. Jebb's mind, the aſſiduity of his application, the various anxieties he felt for the intereſts of the public, and the fatigues which he underwent in his endeavours to promote them, impaired his bodily health and ſtrength, and reduced him to a ſtate of debility, under the progreſs of which he ſunk, whilſt he retained the full exerciſe of his faculties and benevolent feelings; ſo that he terminated a courſe of honourable and active ſervice on March 2, 1786, in the 51ſt year of his age. His works conſiſt of his "Plan of Theological Lectures;" "A Harmony of the Goſpels;" letters on the ſubject of ſubſcription; ſermons and theological tracts; papers relative to the ſtate of public education at Cambridge; of medical caſes; and of political and miſcellaneous papers. They were collected and publiſhed in three large volumes 8vo. in 1787 by Dr. John Diſney, who has prefixed memoirs of his life, to which we are indebted for the preceding article.

JEBHAN, in *Geography*, a town of Hindooſtan, in Lahore; 55 miles N.N.E. of Behnbur.

JEBINIANA, a town of Tunis; 15 miles S.E. of El Jemme.

JEBNA, a town of Paleſtine, on the ſcite of the ancient city of Gath, afterwards called "Ibelin;" 10 miles S. of Jaffa.

JEBUGY, a town on the S. coaſt of Mindanao. N. lat. 7° 15′. E. long. 122° 55′.

JEBUS, in *Ancient Geography*, an ancient name of Jeruſalem; before it was conquered by the Iſraelites. It was ſo called from its founder Jebus, ſon of Canaan, and father of the Jebuſites. Joſh. xviii. 28. Judg. xix. 11.

JECARINUS Piscis, in *Ichthyology*, a name given by Gaza, and many other writers, to the fiſh more commonly called *hepatus piſcis*, by ſome *jecur marinum*.

JECTEHEL, in *Ancient Geography*, a name given to Petra, the capital of Arabia Petræa; ſaid to have been derived from the name of a rock, from the ſummit of which Amaziah, king of Judah, precipitated 2000 Idumæans whom he had taken in battle.

JECUR. See Liver.

Jecur *marinum*, in *Ichthyology*, is uſed by Hermolaus and ſome other writers in the ſame ſenſe with hepatus.

Jecur *uterinum*. The placenta is by ſome thus called, from the ſuppoſed ſimilitude of its figure and office with that of the liver.

JEDBURGH, anciently called *Jedworth*, in *Geography*, a royal borough, and capital town of the county of Roxburgh in Scotland, is pleaſantly ſituated on the banks of the river Jed, and is nearly ſurrounded with lofty eminences. The town lays claim to remote antiquity. The two Jedburghs, or Jedworths, according to Chalmers, are the oldeſt pariſhes in Scotland. As early as the middle of the ninth century, biſhop Eccred founded a church and village on the banks of the Jed, at or near this place. At the commencement of the Scoto-Saxon period a caſtle was ſtanding here, and the village was advanced to the dignity of a burgh, under the influence of the baron. Malcolm IV. is ſaid to have reſided very frequently at this caſtle, and finiſhed his youthful career at this place in the year 1165. In ſeveral charters granted by this monarch, by William and Alexander II., Jedburgh is called "Our Burgh." Other monarchs, and nobles of the firſt rank, made the caſtle of Jedburgh a place of reſidence, and many public acts were executed here; and after the demiſe of Alexander III. the town, monaſtery, and caſtle were involved, for ſeveral ages, in bloodſhed and devaſtation. Hamilton, an amiable poet, thus laments the effects of wars, on

——— "Jedas ancient walls, once ſeat of kings."

In 1147, David I. founded a monaſtery for canons regular at this place, and provided it with ample revenues ariſing from tithes, "the multure of the miln of Jedworth," and a ſaltwork. Malcolm IV. augmented theſe revenues. The biſhop of Glaſgow, and the abbot of Jedburgh, had many altercations reſpecting their dignities, liberties, cuſtoms, rents, &c. and at length the former obtained a decided aſcendency over the latter. The wars between the Scots, and king Edward I. of England, involved the abbot and his canons in ruin. They were driven from their monaſtery, and ſought refuge in different religious houſes in England. At the Reformation, the monaſtery became the property of the king by annexation. A convent of Carmelites was founded here in 1513. Beſides the town of Jedburgh, the pariſh comprehends a large diſtrict, which is divided into three parts by the intervention of the pariſhes of Abbot-rule and Oxnam. The lower diviſion, on both ſides of the river, forms the principal part of the pariſh; the ſecond contains the diſtrict of old Jedburgh; and the third, or upper part, laying on the eaſt ſide of the river, and extending to the border mountains, conſtitutes the barony of Edgarſtown. Beſides the eſtabliſhed church, the town contains three other places of worſhip; reſpectively called the Burger-meeting, anti-Burger-meeting, and Relief congregation. Jedburgh is governed by a provoſt and three bailies, aſſiſted by a ſelect council of the principal inhabitants. Here are a weekly market, and ſeveral fairs. The vicinity of the town is noted for its orchards. In 1800 the number of houſes was 676, and of inhabitants 3834. Chalmers Caledonia, vol. ii. —Sinclair's Statiſtical Account of Scotland, vol. i.

JEDNITZA, a town of Hungary, on the borders of Moravia; 30 miles N. of Topoltzan.

JEDO, Jeddo, or *Yeddo*, the capital of Japan, centrically ſituated on a bay of the ſame name, on the S.E. ſide of the chief iſland Niphon. The houſes never exceed two ſtories, and have numerous ſhops towards the ſtreets. The harbour is ſo ſhallow, that an European ſhip would be obliged to anchor at the diſtance of five leagues. The city towards the bay forms the figure of a creſcent, and is of ſuch extent, as the Japaneſe affirm, that it would occupy a perſon 21 hours to walk round its circumference, which might thus amount to 21 leagues: and they ſay, that it is ſeven leagues in length by five in breadth. Thunberg obſerves, that it is ſaid to be 63 Britiſh miles in circumference, and at any rate rivals Pekin in ſize. A large river, not named by Kæmpfer, but by others called Tonkag, paſſes through the city, and diſcharges itſelf into the haven by five ſtreams, over each of which is a bridge: a conſiderable branch ſurrounds the caſtle, and fills its ditches, over which is the principal bridge, called Niphonbas, which is the centre whence roads and diſtances are meaſured. Theſe ſtreams ſupply ſeveral canals. The bridge now mentioned opens on both ſides into a long ſtreet, 50 paces wide, that traverſes the whole city, and that is thronged with paſſengers, many of whom are richly dreſſed, and carried in their chairs and palanquins. This city has ſuffered much from repeated earthquakes, and alſo from a fire, which, in 1772, is ſaid to have conſumed ſix leagues of it in length, and three in breadth. Since theſe calamities have occurred the buildings have been improved, the ſtreets have been widened and made to croſs one another at right angles, and ſeveral palaces, temples, monaſteries, and public edifices have been erected in a more beautiful ſtyle. The moſt ſuperb ſtructure is the emperor's palace, which is ſurrounded with ſtone walls and ditches with draw-bridges, forming of itſelf a conſiderable town, which is ſaid to be five leagues in circumference. It conſiſts of three incloſures, the innermoſt of which is the reſidence of the emperor, and behind it are magnificent gardens, and the other two are occupied by the princes and lords that compoſe his court. The police of the town is under the conduct of two governors, who act alternately for a year; and beſides, there are ſeveral ſubordinate magiſtrates who ſuperintend the ſtreets, the tradeſmen, handicrafts, &c. who are very numerous, and of various deſcriptions. Like other Japaneſe cities, Jedo has neither walls nor fortifications; but it includes a great number of ſhops and markets, furniſhed with all ſorts of neceſſaries and merchandize, which are ſold at a higher price than in any other city of the empire, on account of the population of the place, and the difficulty of importation. N. lat. 36° 30′. E. long. 140°.

JEDOGAWA, a river of Japan, which paſſes by Oſaka, where it is croſſed with ſeveral bridges of cedar, from 300 to 360 feet in length.

JEDOWITZ, a town of Moravia, in the circle of Brunn; 10 miles N.N E. of Brunn.

JEEAGUR, a town of Bengal; 43 miles S.S.E. of Curruckpour.

JEEMBAREE, a town of Bengal; 12 miles N.N.W. of Koonda.

JEEMWOREE, a town of Hindooſtan, in Oude; 40 miles E. of Fyzabad.

JEER-Capstan, in *Nautical Language*. See Capstan.

JEERS, or Jears, in a *Ship*, an aſſemblage of tackles, by which the lower yards of a ſhip are hoiſted up along the maſt to their uſual ſtation, or lowered from thence as occaſion requires; the former of which operations is called *ſwaying*; and the latter *ſtriking*.

In a ſhip of war the jeers are uſually compoſed of two ſtrong tackles, each of which has two blocks, *viz.* one faſtened to the lower maſt-head, and the other to the middle of the yard. The two blocks which are laſhed to the middle, or ſlings of the yard, are retained in this ſituation by means of two cleats, nailed on each ſide, whoſe arms incloſe the ropes by which the blocks are faſtened to the yard. The two ropes which communicate with theſe tackles lead down to the deck on the oppoſite ſide of the maſt, according to the ſituation of the upper jeer-blocks. The jeers in merchant-ſhips have uſually two large ſingle blocks on the oppoſite ſide of the maſt-head, and another of the ſame ſize in the middle of the yard. The rope, which communicates with theſe, paſſes through one of the blocks hanging at the maſt-head, then through the block on the yard, and afterwards through the other hanging-block upon the maſt. To the lower ends of this rope, on the oppoſite ſides of the maſt, are fixed two tackles, each of which is formed of two double blocks, the lower one being hooked to a ring-bolt in the deck, and the upper one ſpliced or ſeized into the lower end of the great rope above, which is called the tye. By this contrivance the mechanical power of the tackle below is tranſmitted to the tye, which, communicating with blocks on the yard, readily ſways up or lowers it, either by the effort of both jeers at once, on the oppoſite ſides of the maſt, or by each of them ſeparately one after another. Falconer.

They ſay a man is brought to the jeers, when going to be puniſhed at the jeer-capſtan. This is done in the following manner; a capſtan-bar being thruſt through the hole of the barrel, the offender's arms are extended at full length croſs-wiſe, and ſo tied to the bar; having ſometimes a baſket of bullets, or ſome other like weight, hanging by his neck. In this poſture he continues till he be either brought to confeſs ſome plot or crime, whereof he is ſuſpected; or that he has ſuffered what he is cenſured to undergo, at the diſcretion of the captain.

JEETKA, in *Geography*, a town of Bengal; 28 miles N.N.W. of Dacca.

JEFFERIES, George, in *Biography*, an Engliſh judge, whoſe name has already been mentioned in ſome foregoing articles with becoming indignation, was born at Acton in Denbighſhire, and educated at Weſtminſter ſchool, after which he removed to the Inner Temple, where he ſtudied the law with great application. By attaching himſelf to the duke of York (ſee James II.) he obtained the place of a Welch judge, the honour of knighthood, and the chief-juſticeſhip of Cheſter. In 1683 he was appointed chief-juſtice of the king's bench, and in 1685 lord chancellor. His cruelties on the weſtern circuit upon the followers of the duke of Monmouth were of the moſt ſavage kind: they were, however, quite ſatisfactory to the king, who merrily (a wretched ſubject for royal merriment) denominated this particular circuit "Jefferies's campaign." By ſupporting all the arbitrary meaſures of the court, he rendered himſelf ſo obnoxious to the people, that when James abdicated the throne and fled from the kingdom, he would gladly have followed his maſter, but being detected in the diſguiſe of a ſailor, he was ſeized, and would have been torn to pieces by the people, had he not been reſcued by the civil power: he was afterwards committed to the Tower, where he died in 1689. Hume's Hiſt.

JEFFERSON, in *Geography*, a county of Kentucky, in America, bounded N. and W. by Ohio river, S. by Nelſon county, and S.E. and E. by Shelby; it contains 8395 inhabitants, of whom 2330 are ſlaves. The chief town is Louiſville.—Alſo, a county of Georgia, formed in 1796 from the counties of Burke and Warren, bordering on Ogechee river, and Briar and Big creeks. It contains 5684 inhabitants.—Alſo, a county in Teneſſee, Hamilton diſtrict, watered by ſeveral rivers, and containing, together with the county of Cocke, 9017 inhabitants, of whom 695 are ſlaves.—Alſo, a county of the ſtate of Ohio, bounded S. by the Ohio, and N. by the lake Erie, including the tract called the Connecticut reſerve; and containing 8766 inhabitants. Its chief town is Stubenville.—Alſo, a poſt-town of Virginia, on the N. ſide of Roanoke river, 19 miles below the Oeconeachey iſlands. N. lat. 36° 32'.—Alſo, a town in Grafton county, North Hampſhire, containing 112 inhabitants.—Alſo, a town of Pennſylvania, nine miles from Amity, and ſeven from Scottville.—Alſo, a fort in the ſtate of Ohio, ſituated on a ſmall ſtream, which falls into the Great Miami, containing about 100 men; 21 miles N. of fort St. Clair. N. lat. 40° 4'.—Alſo, a fort on the E. bank of the Miſſiſippi, in Kentucky, near the line of the ſtate of Teneſſee.

JEFFERY, Thomas, in *Biography*, ſon of a reſpectable merchant, was born at Exeter towards the cloſe of the ſeventeenth century. He received his academical education in the ſeminary under the care of Mr. Joſeph Hallet; in connection with whom he afterwards, for ſome time, preached. In the year 1726 he ſettled at Little Baddow, in Eſſex, where he remained but two years, when he returned to his native city. He had already exhibited talents which led his friends to expect much from his future labours, but Death, who pays no regard to ſuperior abilities, took him away while he was ſtill a very young man. His publications, which were chiefly in defence of our common religion, met with the approbation of the wiſe and the learned, and even extorted high encomiums from his principal antagoniſt Mr. Anthony Collins. His principal pieces are entitled "The true Grounds and Reaſons of the Chriſtian Religion, in oppoſition to the falſe Ones, &c.;" "Chriſtianity the Perfection of all Religion, Natural and Revealed, &c." Mr. Jeffery poſſeſſed a ſtrong intellect; he devoted himſelf to the inveſtigation of the ſcriptures: ſo abſorbed was he in application and thought, that he would go a whole day without his uſual meals, and without recollecting that abſtinence to which were owing the languor and exhauſted ſpirits which he felt in the evening. He had an expanded, liberal, and candid mind. Dr. Kennicott highly applauded Mr. Jeffery's anſwers to Collins; and Dr. Doddridge ſpeaks of the writer as having treated the ſubject of prophecy, and the application of it in the New Teſtament, more ſtudiouſly, perhaps, than any one ſince the time when Euſebius wrote his "Demonſtratio Evangelica." Monthly Mag.

Jeffery, in *Geography*, a town of North Carolina; 40 miles W.S.W. of Halifax.

Jeffery's *Creek*, a river of South Carolina, which runs into the Great Pedee. N. lat. 34° 8'. W. long. 79° 29'.

JEFFERYS, George, in *Biography*, was born at Weldron, in Northamptonſhire, and educated at Weſtminſter ſchool, and Trinity college, Cambridge, where he obtained a fellowſhip. He afterwards ſtudied the law as his future profeſſion, but never practiſed in it. He died in 1755, at the age of 77: he had in the preceding year publiſhed his works in a collective form in one volume quarto, containing miſcellanies in proſe and verſe, and among other pieces, the tragedies of Edwin and Merope.

JEFFREY's Lodge, in *Geography*, a ſand-bank on the coaſt of Maſſachuſetts, between cape Ann and Caſco bay, extending from the N.W. to the S.E.; between 42° 40' and 47° 37' 30" N. lat. and between 68° 52' 30" and 69° 45' W. long.

JEGENOE, a ſmall iſland of Denmark, in Lymford gulf, containing two villages. N. lat. 56° 39'. E. long. 8° 38'.

JEGNI-BASAR, a town of Aſiatic Turkey, in Natolia; 28 miles N. of Mogla. N. lat. 37° 35'. E. long. 28° 12'.

JEGNICAN, a town of European Turkey, in Bulgaria; 12 miles E.S.E. of Sophia.

JEGNI-KEVI, a town of Aſiatic Turkey, in Natolia; 24 miles N.N.W. of Degnizlu.—Alſo, a town of European Turkey, in Romania; 44 miles W.S.W. of Burgas.

JEGNIPANGOLA, a town of European Turkey, in Bulgaria; 70 miles E.S.E. of Driſtra.

JEGNISHEHR, a town of Aſiatic Turkey, in Natolia; 15 miles S. of Iſnik.

Jegnishehr, or *Janichere*, a town of Aſiatic Turkey, in Natolia, ſituated near ruins, ſuppoſed to be thoſe of Antioch on the Meander; 28 miles W. of Degnizlu.

JEGUN, a town of France, in the department of the Gers, and chief place of a canton, in the diſtrict of Auch; 13 miles E. of Condom. N. lat. 43° 45'. E. long. 0° 32'.

The place contains 2050, and the canton 7978 inhabitants, a territory of 215 kiliometres, in 16 communes.

JEHAGH. See Giagh.

JEHANABAD, in *Geography*, a town of Hindooſtan, in Bahar. N. lat. 25° 3′. E. long. 83° 58′.

JEHAOUL, a town of Hindooſtan, in Moultan; 15 miles W.N.W of Adjodin.

JEHENABAD, a town of Hindooſtan, in Bahar; 20 miles S.S.W. of Patna. N. lat. 25° 12′. E. long. 15° 11′.

JEHOVAH, in *Theology*, one of the ſcripture names of God; ſignifying the Being who is ſelf-exiſtent, and who gives exiſtence to others. (See God.) When God declared to Moſes, that he had not made known his name Jehovah, he does not mean that they were ignorant of him, as God the creator, ſelf-exiſting; but that he had not revealed this name, which ſo well expreſſes his nature, and by which he would be invoked afterwards.

So great a veneration had the Jews for this name, that after the Babyloniſh captivity they left off the cuſtom of pronouncing it; whereby its true pronunciation was forgotten. They call it *tetragrammaton*, or the name with four letters; and believe that whoever knows the true pronunciation of it, cannot fail to be heard by God. Simon the Juſt, they ſay, was the laſt who was acquainted with it. The author of the Talmud denounces terrible curſes againſt thoſe who pronounce it; they ſcruple even trying to do it; and pretend that the angels have not this liberty. But it would be endleſs, and no leſs unprofitable, to recite the various whims and fancies which the Jews, the Cabbaliſts, and the Mahometans have indulged with regard to this name, and that of Allah, correſponding to it among the latter. See Adonai.

JEJUARA, in *Geography*, a town of Hindooſtan, in Bahar; 18 miles N.W. of Durbungah. N. lat. 26° 19′. E. long. 85° 50′.

JEJUNE Style. See Style.

JEJUNUM, the ſecond of the ſmall guts; thus called from the Latin *jejunus, hungry;* becauſe always found empty. See Inteſtines.

JEJURRY, in *Geography*, a town of Hindooſtan, in the country of Viſiapour; 12 miles E. of Poorundar.

JEJURY, a town in the Eaſt Indies, near which is an elegant temple, of conſiderable celebrity among the Hindoos. It is thus deſcribed by major Moor in his Hindoo Pantheon. "A handſome temple, dedicated to the worſhip of an avatara of Siva under the name of Kandeh Rao, (ſee Kandeh Rao,) is at Jejury, a town of ſome extent, about thirty miles to the S.E. of Poona. I have viſited this temple. It is ſituated in a beautiful country, on a high unconnected hill, and has a very commanding and majeſtic appearance: the temple, ſurrounding walls, and ſteps up to it, are well built of fine ſtone. I have had occaſion to remark, and it has alſo doubtleſs been remarked by others, that the ſcite of churches built by the Jeſuits are always on the moſt healthy, beautiful, and pictureſque points, evincing the judgment and taſte of that wonderful order of men: the ſame may, I think, be obſerved of Hindoo temples; generally, after allowing for the neceſſary proximity of water, the moſt beautiful the neighbourhood affords.

"The obtruſive importunity of the beggars prevented me from examining this fine temple at Jejury ſo fully as I wiſhed; indeed, from their officiouſneſs I could ſcarcely examine it at all. The Brahmans informed me, on ſubſequent enquiries, that a ſtone is there, about two feet ſquare, on which are two Lingas (ſee Linga), one larger than the other, whence Kandeh Rao, and I ſuppoſe Malſara, his conſort, (ſee Malsara,) ſprang: there are alſo two images of him, one of gold, one of ſilver, and one of ſilver of Malſara; all richly ornamented on great days, when they are mounted on horſeback or on elephants. If, however, there really be ſuch maſſive images in metal, they could ſcarcely be carried by a horſe. Images of lighter materials are, I apprehend, ſubſtituted; or, metallic heads are embodied, armed and arrayed with clothes; and thus carried about or exhibited. I have ſeveral of theſe hollow heads, to which bodies, &c. could eaſily be appended: I have alſo ſeveral braſs maſks, ſome as large as a man's face, that may anſwer, and, peradventure, may have anſwered on ſimilar occaſions.

"Jejury temple is very rich: it is ſaid to expend half a lak'h (50,000) rupees, about 6000*l.* ſterling, yearly in the expences and eſtabliſhment for Kandeh Rao; horſes and elephants are kept for him: he and his ſpouſe are bathed in Ganges water, and roſe water, perfumed with *atr*, and decorated with gems. The revenues, like thoſe of moſt other temples, are derived from houſes and lands given by pious people, and from preſents and offerings conſtantly making by all deſcriptions of votaries and viſitors, according to their means, or to their faith, hope, or charity. At the annual jatra, or fair, which commences on the laſt day of the dark half of the lunar month Chaitra (in January) a lak'h (100,000) or more perſons viſit Jejury. It is cuſtomary to ſacrifice a ſheep; and the Brahmans aſſured me, that twenty, or, in particular years, thirty thouſand are ſlain on this occaſion, and to the honour and glory of Kandeh Rao."

In another work the ſame author more particularly deſcribes Jejury as a pretty large town, but, with the exception of a few ſhopkeepers and retailers of fruit, vegetables, and ſuch ſmall wares, apparently wholly inhabited by Brahmans and beggars, the latter of whom were exceedingly importunate and troubleſome. Were it not for its temple, the town is not deſerving particular notice. The aſcent to the temple is on the north-eaſtern ſide, by a handſome flight of broad ſtone ſteps, and being of conſiderable height, and rather ſteep, the walk up is ſomewhat fatiguing: arches are in many places thrown acroſs over the ſtairs, which have, on each ſide, frequent buildings of ſtone of a pyramidal form for lights; others have the appearance of receſſes. The inner temple, where the deity is placed, is ancient and not very handſome; but the encloſure is elegant and extenſive, beautifully finiſhed with fine ſtone, and the pavement is alſo of large flags. The encloſure is open, and commands a fine view of the ſurrounding country. There is a very large bank, elegantly built with fine ſtone, a little to the ſouthward of the hill on which the temple ſtands, which is about two miles from a range of hills that runs in a ſouth-eaſterly direction.

In this temple are kept many beautiful young women as ſingers and dancers: from the account received by major Moor on the ſpot, there were more than two hundred at the time of his viſit (1792); ſuch as he ſaw were very handſome. They are here called *Murty;* which ſee.

JEKIMABAD, a town of Perſia, in the province of Segeſtan; 60 miles E.N.E. of Boſt.

JEKISINOKORI, a town of Japan, in the iſland of Niphon; 65 miles N.N.E. of Meaco.

JEKYL, *Sir* Joseph, in *Biography*, an Engliſh lawyer, was born in Northamptonſhire in 1663. Little is known of him in early life, but he diſtinguiſhed himſelf in the reign of William III. by a ſteady attachment to the Whigs. He was appointed one of the managers on the trial of Dr. Sacheverel, and on the acceſſion of George I. he was knighted, made maſter of the Rolls, and a privy counſellor. He ſucceſsfully maintained the independence of his office againſt the lord chancellor King, in a pamphlet, entitled "The Judicial Authority of the Maſter of the Rolls ſtated and vindicated." Sir Joſeph was an excellent patriot, a kind and benevolent man: when it was propoſed to ſubſidize foreign mercenaries, he contended that the practice was repugnant to the maxims by which England, in former times, had ſteered and ſquared her conduct with relation to her intereſt abroad; that the navy was the natural ſtrength of Great Britain; its beſt defence and ſecurity: but if, in order to avoid a war, they ſhould be ſo free-hearted as to buy and maintain the forces of foreign princes, they were never like to ſee an end to ſuch extravagant expences. On another occaſion, when it was propoſed by his own friends to proſecute the duke of Ormond for high treaſon, ſir Joſeph ſaid, if there were room for mercy he hoped it would be ſhewn to that noble, generous, and courageous peer, who had in the courſe of ſo many years exerted his talents for the good and honour of his country. He died in the year 1738. His brother, doctor Thomas Jekyl, was educated at Trinity college, Cambridge; became vicar of Rowd in Wiltſhire, lecturer at Newland in Glouceſterſhire, and miniſter of St. Margaret's-chapel, Weſtminſter. He was author of ſeveral ſermons and tracts; and of an "Expoſition of the Church Cathechiſm." Smollett's Continuation.

Jekyl *Iſland*, in *Geography*, a ſmall iſland in the Atlantic, near the coaſt of Georgia, at the mouth of the Alatamaha. N. lat. 31° 7'. W. long. 81° 40'. It is ſaid, that the ſound at the mouth of this river will afford ſafe riding for a dozen ſhips of 40 guns.

JELALABAD, a town of Hindooſtan, in Oude; 18 miles S.E. of Azimgur.—Alſo, a town in Oude; eight miles S. of Lucknow.—Alſo, a town in Rohilcund; 42 miles S. of Bereilly.

JELALPOUR, a town of Hindooſtan, in Oude; 17 miles N.N.E. of Raat.

JELATGUR, a town of Bengal; eight miles N. of Purneah.

JELAUL, a town of Hindooſtan, in Lahore; 13 miles N.W. of Rotas.

JELENGHIAN, a town of Curdiſtan; 60 miles S.E. of Van.

JELENY, a town of Bohemia; 14 miles S.E. of Konigingratz.

JELGOVAN, a town of Hindooſtan, in Bahar; 17 miles N.N.E. of Bahar.

JELINA, a town of Lithuania; 15 miles S.E. of Lida.

JELIOTTE, in *Biography*, a French vocal performer of great talents and public favour at Paris, which continued undiminiſhed to the end of his life.

He was a native of Berne, of a very good family of that province, and not intended for the profeſſion which he embraced, and which, luckily for the public, his early youth made him prefer to that which would have been more agreeable to his parents, and more befitting their rank in life.

No ſinger was ever gifted with a finer voice, or knew better how to uſe it, nor was a better muſician than Jeliotte. Though he had been dead 25 years when this article was written, (1780,) the charms of his voice, his taſte, and his action were not forgotten, nor the tranſports by which the public expreſſed their gratitude, whenever he appeared on the ſtage.

No one was ever ſo happy in a great number of friends, or ever better deſerved them than Jeliotte. His natural wit, ornamented and poliſhed by his knowledge of the world, and his agreeable perſonal qualities, made him always ſought, for his own ſake, as much as for the diverſity and charms of his talents. Laborde.

JELLA, in *Geography*, a town of Birmah, on the Ava; 10 miles S. of Lundſey.

JELLALÆAN, or **Gelalæan** *calendar*, *epocha*, and *year*. See Calendar, Epocha, and Year.

JELLANTRA, in *Geography*, a town of Hindooſtan; in the circar of Cicacole; 36 miles S.W. of Ganjam.

JELLASORE, a town of Bengal; 80 miles S.S.W. of Calcutta. N. lat. 21° 56'. E. long. 87° 16'.

JELLASSAR, a town of the province of Agra, on the borders of Dooab; 99 miles S.E. of Delhi. N. lat. 27° 25'. E. long. 78° 44'.

JELLING, a town of Denmark, in North Jutland, formerly a city and the reſidence of kings; 14 miles N. of Colding.

JELLINGHY, a town of Hindooſtan, in Bengal, on the right ſide of the Ganges; 90 miles N. of Calcutta. N. lat. 24° 6'. E. long. 88° 48'.—Alſo, a river which is a branch of the Ganges, that ſeparates from the main ſtream near Jellinghy, and after being joined by another branch about 50 miles N. of Calcutta, forms the Hoogly.

JELLOUD, a town of Hindooſtan, in Oude; 10 miles S.S.E. of Fyzabad.

JELLOULAH, a town of Africa, in Tunis; 10 miles N.W. of Cairoan.

JELLY, a form of food, or medicine, prepared from the juices of ripe fruits, boiled to a proper conſiſtence with ſugar, or of the ſtrong decoctions of the horns, bones, or extremities of animals, boiled to ſuch a height as to be ſtiff and firm when cold, without the addition of any ſugar. See *Harts'* Horn.

The jellies of fruits are cooling, ſaponaceous, and aceſcent, and therefore are good as medicines in all diſorders of the primæ viæ, ariſing from alcaleſcent juices, eſpecially when not given alone, but diluted with water. On the contrary, the jellies made from animal ſubſtances are all alcaleſcent, and are therefore good in all caſes in which an acidity of the humours prevails: the alcaleſcent quality of theſe is however in a great meaſure taken off, by the adding lemon juice and ſugar to them. There were formerly a ſort of jellies much in uſe, called *compound* jellies; theſe had the reſtorative medicinal drugs added to them, but they are now ſcarcely ever heard of.

The jelly obtained from the various parts of animals contains a mucous ſubſtance, very ſoluble in water, but not in alcohol; and it may be eaſily obtained by boiling theſe animal ſubſtances in water, and concentrating the decoction, until, by mere cooling, it aſſumes the form of a ſolid tremulous maſs. The jelly of harts-horn is extracted by a ſimilar operation, and afterwards rendered white with the milk of almonds. This kind of food, duly ſcented, is ſerved up at our tables by the name of "blanc-mangè." Jellies are in general reſtorative and nouriſhing; that of harts-horn is aſtringent and emollient. Jellies in general have, in their natural ſtate, no ſmell, and their taſte is inſipid. By diſtillation they afford an inſipid and inodorous phlegm, which eaſily putrefies. A ſtronger heat cauſes them to ſwell up, become black, and emit a fœtid odour, accompanied with white acrid fumes. An alkaline phlegm then paſſes over, ſucceeded by an empyreumatic oil, and a little carbonate of ammonia. A ſpongy coal remains, which is with difficulty reduced to aſhes, and affords by analyſis muriate of ſoda and phoſphate of lime. Water diſſolves jellies perfectly; hot water diſſolves a large quantity, as they become conſiſtent only by cooling. Acids and alkalies alſo diſſolve them. The nitric acid diſengages, as M. Berthollet has ſhewn, nitrogen gas. For other properties, ſee Gelatin.

If jelly be concentrated to ſuch a degree as to give it the form of a cake, it is deprived of the property of putrefying; and thus the dry or portable ſoups are formed, which may be of the greateſt advantage in long voyages. The following is a receipt given by M. Chaptal for preparing theſe cakes: calves feet, 4; leg of beef, 12lbs.; knuckle of veal, 3lbs.; leg of mutton, 10lbs. Let theſe be boiled in a ſufficient quantity of water, and the ſcum taken off as uſual; after which the ſoup is to be ſeparated from the meat by ſtraining and preſſure. The meat is then to be boiled a ſecond time in other water; and the two decoctions, being added together, muſt be left to cool, in order that the fat may be exactly ſeparated. The ſoup muſt then be clarified with five or ſix whites of eggs, and a ſufficient quantity of common ſalt be added. The liquor is then ſtrained through flannel, and evaporated in the water, both to the conſiſtence of a very thick paſte; after which it is ſpread rather thin upon a ſmooth ſtone, then cut into cakes, and laſtly, dried in a ſtove until it becomes brittle; theſe cakes are kept in well-cloſed bottles. The ſame proceſs may be uſed to make a portable ſoup of the fleſh of poultry; and aromatic herbs may be uſed as a ſeaſoning, if thought proper. Theſe tablets or cakes may be kept four or five years. When intended to be uſed, the quantity of half an ounce is put into a large glaſs of boiling water, which is to be covered, and ſet upon hot aſhes for a quarter of an hour, or until the whole is entirely diſſolved. It forms an excellent ſoup, and requires no addition but a ſmall quantity of ſalt. The cakes of "hockiac," which are prepared in China, and are known in France by the name of "colle de peau d'ane," are made with animal ſubſtances, they are uſed in diſorders of the lungs, in the doſe of from half a dram to two drams.

M. Prouſt, profeſſor of chemiſtry at Madrid, has publiſhed directions for preparing jelly from bones in a work, entitled "An Inquiry into the Means of Improving the Subſiſtence of the Soldier." In order to obtain this jelly in an expeditious and cheap manner, he directs that the bones ſhould be reduced into powder; which may be very readily done between a pair of toothed iron cylinders, as in the ammoniac works. The bones thus comminuted, are to be boiled in eight or ten times their weight of water for the ſpace of four hours, or till about half the water is waſted, when the liquor will be found on cooling of a due gelatinous conſiſtence. A veſſel with a tight cover ſhould be uſed, that the water may acquire as much heat as poſſible; but it ſhould not be of copper, as this metal is eaſily diſſolved by animal mucilage. According to the experiments of M. Prouſt, 5lbs. of the middle part of the bone of a leg of beef, will afford nine pints of jelly; the ſame quantity of the bone of the joint, 15 pints; of the ribs and ſpine, 11 quarts; of the rump and edge bone, 13 quarts. Five pounds of mutton bone of every ſort together, give 19 pints of jelly. Pig's bones yield a little more, the flavour of which is the moſt agreeable. In warm weather the liquor muſt be boiled down ſomewhat more, if it be intended to aſſume the ſame gelatinous conſiſtence when cold; as the ſame quantity of bone that would afford a quart of jelly in winter, will not yield above a pint and a half, or a pint and a quarter in ſummer, but then it contains proportionally more nouriſhment. If this jelly be boiled till it acquires a conſiſtence a little thicker than a ſyrup, then poured out into plates, and when cold cut into pieces, and dried on a net, it will keep a long time, and be particularly uſeful at ſea. One ounce of this dry portable jelly being ſoaked in water for a quarter of an hour to ſoften it, and then boiled, will make from a pint and a quarter to a quart of jelly, according to the ſeaſon, and equally as good as that which is freſh extracted. Mr. P. prepares, as he informs us, a very pleaſant reſtorative for the ſick, by 1½ ounce of ſugar, and a little ſalt, to 14 or 15 ounces of the jelly, and then making it into an emulſion with 12 ſweet and four bitter almonds, and a little orange peel. We ſhall here add, that Mr. P. chops the refuſe bones, before they are ground for extracting the jelly, into pieces about an inch long with a cleaver, then throws them into a kettle of water, and lets them boil for a quarter of an hour. The fat obtained in this manner from 16lbs. of rump and edge-bones weighed, when cold, two pounds; and from the ſame quantity of the bones of the joints he obtained four pounds of ſolid fat. This, he obſerves, when freſh, may be uſed for various ordinary purpoſes; when it has been kept for ſome time expoſed to the air, it becomes very good tallow for making candles.

Jelly, *Flax-ſeed.* See Flax-seed *Jelly.*

Jelly, *Oat,* a preparation of common oats, recommended by many of the German phyſicians in all hectic diſorders, to be taken with broth of ſnails or cray-fiſh.

It is made by boiling a large quantity of oats, with the huſk taken off, with ſome hartſhorn ſhavings and currants together, with a leg of veal cut to pieces, and with the bones all broken; theſe are to be ſet over the fire with a large quantity of water, till the whole is reduced to a ſort of jelly, which when ſtrained and cold will be very firm and hard. A few ſpoonfuls of this are to be taken every morning, diluted with a baſon of either of the above-mentioned broths, or any other warm liquor. See Gelatin.

Jelly, *Star-wort.* See Star-wort *Jelly.*

JELMO, in *Geography,* a ſmall iſland in the North ſea, near the coaſt of Lapland. N. lat. 74° 8'.

JELMORE, a town of Hindooſtan, in the circar of Cicacole; 15 miles N. of Cicacole.

JELNA, a town of Lithuania, in the palatinate of Wilna; 10 miles S.E. of Lida.

JELOLPOUR, a town of Hindooſtan; 22 miles N.N.W. of Benares.

JELONGA, a town of Bengal; 13 miles E. of Doeſa.

JELPESH, a town of Bengal; 30 miles W.N.W. of Beyhar.

JELPIGORY, a town of Bengal; 40 miles W. of Beyhar.

JELSO, a town of Norway, in the dioceſe of Bergen; 22 miles N.N.E. of Stavanger.

JELVADI, a town of Aſiatic Turkey, in Natolia; 23 miles E. of Iſbarteh.

JEMAMA. See Imamé.

JEMAPETTA, a town of Hindooſtan, in Barramaul; 12 miles S.E. of Namacul.

JEMARROW, a kingdom of Africa, on the S. ſide of the river Gambia; 120 miles from the ſea; inhabited by Mahometans.

JEMBA, a river of Ruſſia, which riſes in the province of Upha, and runs into the Caſpian ſea. N. lat. 46° 57'. E. long. 54° 39'.

JEMBUT, in the *Materia Medica,* a name uſed by Avicenna and others, to expreſs the ſeeds in the pods of the carob-tree, or ſiliqua dulcis; which they call charub or charnub, and the Greeks ceratium.

JEMME, El, in *Geography,* a town of Africa, in the kingdom of Tunis, called alſo Tiſdra or Tiſdrus. This town abounds with antiquities, ſuch as altars, ſtatues, and a ſpacious amphitheatre, in a decayed and mutilated ſtate; 40 miles S.S.E. of Cairoan.

JEMDAR, a town of Hindooſtan, in Bahar; 17 miles E. of Hajypour.

JEMLAH, a town of Thibet, which gives name to a diſtrict; 230 miles N. of Fyzabad. N. lat. 30° 35′. E. long. 81° 33′.

JEMMAPE, or GEMAPPE, a department of France, being one of the 13 belonging to the region, called the re-united country; formed of portions of Auſtrian Hainaut, of Brabant, of Liege, and of Namur; W. of the Sombre and Meuſe; in N. lat. 50° 30′. The capital is Mons. It contains, in extent of territory, 3865 kiliometres, and in population 412,129 perſons. It is divided into three diſtricts, *viz.* Tournay, Mons, and Charleroy, 32 cantons, and 423 communes. Tournay has 165,988 inhabitants, Mons 138,533, and Charleroy 107,608. The total of contributions is 3,158,038 francs, and for expences, adminiſtration, judiciary, and for public inſtruction, 267,267 fr. 76 cents. This department comprehends a great variety of ſoil and productions, with mines of iron, coal, quarries of marble, &c.

JEMMINGHEN, or JEMGUM, a town of Eaſt Frieſland; 8 miles S.E. of Emden.

JEMOO, a river on the N. ſide of the iſland of Java, which runs into the ſea. S. lat. 6° 47′. E. long. 111° 8′.

JEMRIGAUCHY, a town of Bootan; 15 miles N.E. of Taſſaſudon. N. lat. 28°. E. long. 89° 45′.

JEMROUD, a town of the kingdom of Candahar; 30 miles W. of Ghizni.

JEMSEG, a town of New Brunſwick; 25 miles E.S.E. of Frederick Town. N. lat. 45° 55′. W. long. 66° 13′.

JEMSERUM, a town of Sweden, in the province of Smaland; 45 miles N. of Calmar.

JENA, a town of Germany, in the principality of Eiſenach, near the Saale, ſituated in a pleaſant valley among riſing hills, which produce great quantities of wine. It is ſurrounded with walls, ditches, and towers, and it has an univerſity founded in 1548. The town has four fauxbourgs; 10 miles E. of Weimar. N. lat. 50° 54′. E. long. 11° 30′.—Alſo, a town of South America, in the province of Quito; 12 miles S. of Archidona.

JENET, a town of Africa, in Sahara; 200 miles S.E. of Gadamis. N. lat. 27° 50′. E. long. 13° 10′.

JENGHIJE, a town of the Arabian Irak, on the Tigris; 12 miles N.W. of Bagdad.

JENGHIKAND, a town of Turkeſtan, on the Sirr; 270 miles W.S.W. of Tonkat.

JENGI, a town of Hindooſtan, in the country of Cutch, near the coaſt; 21 miles S. of Tahej.

JENGOKO, a town of Japan, in the iſland of Niphon; 50 miles E. of Jedo.

JENHAT, a circar of Hindooſtan, in the ſubah of Lahore, ſituated between the rivers Behat and Chunaub, about 120 miles long from N. to S. and from 10 to 50 broad: the chief town is Gujurat.

JENJAPOUR, a town of Hindooſtan, in Bahar; 20 miles E.N.E. of Durbungah. N. lat. 26° 14′. E. long. 86° 28′.

JENI-BASAR, or NOVI-BASAR, a town of European Turkey, in Bulgaria, on a branch of the river Ibar, containing about 300 houſes, occupied by Chriſtians and Turks; anciently the capital of the Raſcians; 83 miles N.E. of Raguſa. N. lat. 43° 40′. E. long. 19° 59′.

JENJEREE, a town of Hindooſtan, in Bahar; 30 miles N.E. of Monghier.

JENJIAM, a town of Hindooſtan, in Moultan; 40 miles W. of Adjodin.

JENIKALE, a town of Ruſſia, in the government of Taurida, in the narrow channel, called the ſtrait of Taman, between the Black ſea and the ſea of Azoph; 15 miles N.E. of Kerch. N. lat. 45° 10′. E. long. 36° 10′.

JENIKOW, a town of Bohemia, in the circle of Czaſlau; 24 miles S.W. of Czaſlau.

JENISHEHR, a town of Perſia, in the province of Jorjan; 15 miles S.E. of Jorjan.

JENITZA, a town of European Turkey, in Macedonia, ſeated on a lake that communicates with the gulf of Saloniki by means of a canal about twelve miles long, anciently the capital of Macedonia, but now a heap of ruins; 24 miles W.N.W. of Saloniki. N. lat. 40° 48′. E. long. 22° 30′.

JENKIN, ROBERT, in *Biography*, was born at Minſter, in the iſle of Thanet, in Kent, in the year 1656. He received his claſſical education in King's ſchool at Canterbury, whence he was ſent to the univerſity of Cambridge when he was about eighteen years of age. In 1680 he was elected fellow of St. John's college, and five years afterwards appointed chaplain to Dr. Lake, upon the tranſlation of that learned prelate from Briſtol to the ſee of Chicheſter. In 1688 his patron gave him the precentorſhip of his cathedral church, but upon his refuſing to take the oaths at the revolution he was obliged to reſign that preferment, and to retire alſo from his fellowſhip. Little is known of Mr. Jenkin during the next twenty years, but we find him doctor of divinity and maſter of his college in the year 1711, and at the ſame time he was appointed lady Margaret's profeſſor of divinity. On the acceſſion of George I., an act was paſſed obliging all thoſe who held any poſt, of 5*l.* per ann., to take the abjuration oath. Dr. Jenkins had, at this period, no heſitation in conforming, but he was ſo much affected at being obliged to eject many worthy and conſcientious men who could not ſubſcribe, that he even fell into a ſtate of childiſhneſs. He died in the year 1727. As an author he is known by "An hiſtorical Examination of the Authority of General Councils, ſhewing the falſe Dealing which hath been uſed in publiſhing them:" "The Reaſonableneſs and Certainty of the Chriſtian Religion:" and many controverſial pieces, particularly "Remarks on ſome Books lately publiſhed, *viz.* M. Baſnage's Hiſtory of the Jews: Mr. Whiſton's eight Sermons: Mr. Locke's Paraphraſe, &c." In another work he accuſes M. Le Clerc of treating the fathers, eſpecially St. Auguſtine, with unjuſt ſeverity.

JENKIN'S *Town*, in *Geography*, a ſettlement on the coaſt of Africa, in the country of Scherbro. N. lat. 7°. W. long. 11° 50′.

JENKINS, *Sir* LEOLINE, in *Biography*, a ſtateſman, was born at Llantriſaint, in Glamorganſhire, in the year 1623. Having laid a good foundation in grammar-learning at Cowbridge, he went to Oxford, where he remained till after the death of the king in 1648. Upon that event he retired into his native country, and was employed in the tuition of the eldeſt ſon of ſir John Aubrey, and other young perſons of family attached to the epiſcopal church. At length, falling under ſome ſuſpicion, he thought it adviſable to go abroad. During three years he led his pupils through a courſe of ſtudy and travel upon the continent; when he returned and lived in retirement till the reſtoration. In 1661 he was choſen principal of Jeſus college, a poſt which he held till 1673. In the mean time he applied himſelf diligently to the civil law, was admitted an advocate of the court of arches, and roſe ſucceſſively to the offices of judge of the admiralty and judge of the prerogative court: he was likewiſe appointed one of the commiſſioners for recovering the effects of the queen-mother of France, lately dead. For his ſervices on this occaſion he had the honour of knighthood conferred upon him. In 1673 he was appointed one of the ambaſſadors plenipotentiary for concluding the peace of Nimeguen, and on his return to England he was elected repreſentative in parliament for the univerſity of Oxford, where he oppoſed the bill for the excluſion of the duke of York, ſoon after he was made ſecretary of ſtate and a privy counſellor. He died in 1685, and was buried in the chapel of Jeſus college, to which he was a great benefactor. His letters and papers were printed in two volumes folio. "He was," according to biſhop Burnet, "a man of exemplary life, and conſiderably learned; but he was dull and ſlow: he was a great aſſertor of the divine right of monarchy, and was for carrying the prerogative very high. He neither ſpoke nor wrote well." He bequeathed the greater part of his property to charitable uſes. Biog. Brit.

JENKINS, JOHN, an Engliſh muſician of great eminence in the 17th century, was born at Maidſtone, in Kent, 1592. He was a voluminous compoſer of fancies for viols during the reign of Charles I. and the interregnum, which were in great favour throughout the kingdom. Inſtrumental muſic was in a very rude ſtate at this time. His firſt publication, however, was vocal, being a collection of ſongs under the title of "Theophila, or Love's Sacrifice," folio, 1651. None of the infinite number of pieces that he compoſed for viols, which occur in all the manuſcript collections of the times, were printed; yet, in 1660, he publiſhed twelve ſonatas for two violins and a baſe, with a thorough-baſe for the organ or theorbo, which were re-printed in Holland, 1664. Theſe were profeſſedly in imitation of the Italian ſtyle, and the firſt of the kind which had ever been produced by an Engliſhman. It was at this time an inſtance of great condeſcenſion for a muſician of character to write expreſsly for ſo ribald and vulgar an inſtrument, as the violin was accounted by the lovers of lutes, guitars, and all the fretful tribe.

In manuſcript memoirs of muſic, written by the honourable Roger North, of Rougham, in Norfolk, brother of the lord keeper North, to which we were allowed acceſs by his deſcendant, the late Rev. Dr. Montague North, canon of Windſor, there is a very diffuſive account of Jenkins, the circumſtances of whoſe life have ſuggeſted to the author many moral reflections on the inſtability of muſical renown. "It is of ſmall importance," ſays he, "to the ſtate of the world, or condition of human life, to know the names and ſtyles of thoſe compoſers of our own country who have excelled the Italians themſelves in every ſpecies of muſic, but that for the voice; therefore the oblivion of all ſuch things is no great loſs. But for curioſity ſake, as other no leſs idle antiquities are courted, it would doubtleſs afford ſatisfaction to profeſſors and lovers of the art, if they could acquire true information concerning their names, characters, and works: of the latter, much knowledge might be obtained, if the old collections, not yet rotten, of many patrons of muſic were acceſſible. In theſe we might ſtill find the productions of Alphonſo, Feraboſco, Coperario, Lupo, Mico, Eſte, and divers others, eſpecially of John Jenkins, whoſe muſical works are more voluminous, and, in their time, were more eſteemed than all the reſt, though they now (1728) lie in the utmoſt contempt.

"I ſhall endeavour to give a ſhort account of this maſter, with whom it was my good chance to have had an intimate acquaintance and friendſhip. He lived in king James's time, and flouriſhed in that of king Charles I. His talents lay chiefly in the uſe of the lute and baſe, or rather lyra-viol. He was one of the court muſicians, and was once brought to play upon the lyra-viol before king Charles I. as an extraordinary performer. And when he had done, the king ſaid he did wonders upon an inconſiderable inſtrument. The lyra-viol was a viol da gamba, with more ſtrings, but differently tuned from the common ſix-ſtring baſe. Its notation, like that of the lute, was written in entablature. He left London during the rebellion, and paſſed his time at muſical gentlemen's houſes in the country, where he was always courted, and at home, wherever he went; and in moſt of his friends houſes there was a chamber called by his name. For, beſides his muſical excellencies, he was an accompliſhed and ingenious perſon, and of ſuch inoffenſive and amiable manners, that he was eſteemed and reſpected for his virtues and diſpoſition, long after age had deprived him of his muſical powers.

"It is not poſſible to give an account of his compoſitions, they were ſo numerous, that he himſelf outlived the knowledge of them. A Spaniſh nobleman ſent ſome papers to ſir Peter Lely, containing fragments of a conſort (concerto), in four parts, of a ſprightly kind, ſuch as were then called *fancies*, deſiring that he would procure for him the reſt, *coûte qui coûte*. Lely gave me theſe papers, as the likelieſt perſon to get them perfected. I ſhewed them to Jenkins, who ſaid he knew the conſort to be his own; but when or where compoſed he knew not, and was unable to recollect any more about it.

"His fancies were full of airy points, grave and triple movements, and other variety. And all that he produced till his declining age, was lively, active, decided, and fanciful. And of this kind he compoſed ſo much, that the private (or chamber) muſic, in England, was in a great meaſure ſupplied by him; and they were the more coveted, becauſe his ſtyle was new, and, for the time, difficult: for he could hardly forbear diviſions, and ſome of his conſorts were too full of them. But it muſt be owned, that being an accompliſhed maſter on the viol, all his movements laid fair for the hand, and were not ſo hard as they ſeemed.

"His vein was leſs happy in vocal muſic, though he was fond of ſetting words, and occaſionally of teaching to ſing; but he had neither voice nor manner fit for it. In his ſprightly moments he made catches, [nothing of this kind now remains of Jenkins, but his little round: "A boat, a boat, haſte to the ferry," which is a happy ſelection and combination of pleaſing ſounds,] and ſtrains that we called rants, with a piece called "The Cries of Newgate," which was all humour and very whimſical. But of all his concerts, none flew about with his name ſo univerſally as the ſmall piece called his "Bells," or "The Five Bell Conſorte." In thoſe days the country fiddlers were not ſo well ſupplied with light muſic from London, as ſince; and a maſter that furniſhed them with new tunes, that they were able to play, was a benefactor."

Jenkins lived to the great age of eighty-ſix, eighteen years after the reſtoration. And Mr. North, the author of theſe memoirs, who was born in 1650, lived till 1733.

JENKINS's *Bay*, in *Geography*, a bay on the back part of the iſland of St. Euſtatius.

JENKINS's *Iſland*, a ſmall iſland near the coaſt of South Carolina. N. lat. 32° 20′. W. long. 80° 40′.

JENKING, in *Mining*, is applied, in ſome diſtricts, to the laſt operations in a coal-pit, or ſome part of the ſame, which is about to be abandoned: that of perforating, or robbing of the pillars or ribs of coal which have been left to ſupport the roof.

JENKYNS, David, in *Biography*, an intrepid judge, was born at Pendoylen, in Glamorganſhire, and admitted a commoner of Edmond-hall, Oxford, in 1597. From thence he removed to Gray's-inn, and became an eminent counſellor. By king Charles I. he was appointed a Welch judge, and in 1645 he was taken priſoner at Hereford for his activity in the royal cauſe, and ſent to the Tower. Being brought to the bar of the houſe of commons he denied the authority of the houſe, and refuſed to kneel, for which he was fined 1000*l.* and remanded to priſon. In 1650 an act was paſſed for his trial, but it never took place. He expected to be hanged, and declared that he would die with the bible under one arm, and magna charta under the other. In 1656 he obtained his liberty, and died in 1663. His tracts on legal and political ſubjects were printed in 1681, in one vol. 12mo.

JENNE', in *Geography*, a town of Africa, in Bambarra, ſituated on an iſland in the river Niger or Joliba, at the diſtance of two days' journey from the lake Dibbie in the ſame river; about 150 miles N.E. of Sego, and about 165 miles S.W. from Tombuctoo. N. lat. 15° 13'. W. long. 0° 40'. Although the town of Jenné is nominally a part of the king of Bambarra's dominions, it is in fact a city of the Moors; the chief part of the inhabitants conſiſting of Buſkreens, or Mahometans, and even the governor himſelf being of the ſame ſect.

JENNÉ, a town of Japan, on the N. coaſt of Niphon; 8 miles N.W. of Kanazava.

JENNET, in *Horſemanſhip*. See HORSE.

JENNIDAH, in *Geography*, a town of Bengal; 14 miles N.W. of Mahmudpour.

JENNINGS, David, in *Biography*, ſon of an ejected miniſter, was born at Kibworth, in Leiceſterſhire, in the year 1691. He obtained a good ſtock of grammar learning at the free-ſchool of his native place, and about the year 1709 he was ſent to purſue a courſe of academical ſtudies in London, under the care of Dr. Chauncey. Having finiſhed his ſtudies he was appointed one of the preachers at an evening lecture at Rotherhithe, and in 1716 choſen aſſiſtant preacher at the meeting near Haberdaſhers-hall. Two years afterwards he was elected paſtor to the congregational church in Old Gravel-Lane, Wapping, with which he maintained that relation during forty-four years. Within a year after he entered this charge, he ſhewed his reſpect and attachment to the rights of conſcience, by refuſing to comply with the requiſition brought forwards by many of the brethren at Salters-hall, to ſign certain articles relating to the Trinity. Mr. Jennings, about the year 1730, publiſhed a ſmall volume of ſermons addreſſed to the young, entitled "The Beauty and Benefit of early Piety," which was followed by other publications of a practical nature. In the year 1740 he entered the liſts againſt Dr. John Taylor, concerning Original Sin. He juſtified the doctrine, and did not act as the fair and liberal antagoniſt; but notwithſtanding their difference in doctrinal points, they were in habits of intimacy and friendſhip with each other as gentlemen. In the year 1743 Mr. Jennings was elected truſtee of Mr. Coward's charities, and one of the lecturers at St. Helen's; and in the following year he became divinity tutor, in the room of Mr. Eames, at the academy, at that time chiefly ſupported by Mr. Coward's funds. In this work he was earneſtly intent: nothing ever diverted him from a daily attendance in the lecture room; and he was indefatigable in the diſcharge of the duties belonging to his office. The habits of early riſing, of order in the arrangement of buſineſs, and of punctuality in his engagements, enabled him to perform more than moſt men would have been able to get through. As a relief to the ſtudies of the mind he employed himſelf in the common mechanical arts of life. His method of communicating inſtruction was eaſy and familiar, and his general deportment towards his pupils affable and friendly. In ſome inſtances he was betrayed into acts of illiberality, which ill accorded with that ſpirit which in younger life led him to reſiſt the impoſition of a formulary of faith, deviſed by the miniſters at Salters-hall. He was determined to maintain, in his academy, the reputation for orthodoxy which it had acquired, and would not ſuffer young men to deviate from his ſtandard of faith. In ſome caſes he had recourſe to expulſion, although the characters of the pupils thus treated were moſt blameleſs and exemplary. In the year 1747 Mr. Jennings publiſhed "An Introduction to the Uſe of the Globes," &c. which maintained a conſiderable degree of popularity for more than half a century. In 1749 the univerſity of St. Andrew's in Scotland conferred on the author the degree of doctor of divinity. After this, he publiſhed "An Appeal to Reaſon and Common Senſe for the Truth of the Holy Scriptures." He died in September 1762, when he was ſeventy-one years of age. He was highly valued by his acquaintance, and he had the honour to educate many pupils who proved ornaments to the diſſenting intereſt, and have rendered eminent ſervice to ſcience and the world, ſome of whom ſtill ſuſtain, by a diligent application of great talents, a reſpectable and commanding rank in life. After his death, was printed, from a MS. copy, "An Introduction to the Knowledge of Medals," conſiſting of a courſe of lectures on the hiſtory, the nature, ſize and ſhape;—the orders into which they are to be diſtinguiſhed;—the impreſſion and form, and value and uſe of medals. In 1766 a more elaborate work was publiſhed by Dr. Furneaux from the MSS. of Dr. Jennings, entitled "Jewiſh Antiquities: or a Courſe of Lectures on the Three Firſt Books of Godwin's Moſes and Aaron: to which is annexed a Diſſertation on the Hebrew Language:" in two vols. 8vo. This is a work of great merit, and deſerves the peruſal of all who would obtain an intimate acquaintance with the ſcriptures, particularly of the Old Teſtament. A new edition of the "Jewiſh Antiquities" was publiſhed about three years ſince, it having been long out of print, and very much called for.

JENNINGS's *Iſland*, in *Geography*, a ſmall iſland in the gulf of Florida, near the coaſt of Eaſt Florida. N lat. 25° 28'. W. long. 80° 28'.

JENNY WREN. See WREN.

JENOYPOUR, in *Geography*, a town of Hindooſtan, in Allahabad; 24 miles N. of Gazypour.

JENSON, or JANSON, NICHOLAS, in *Biography*, an eminent printer of the 15th century, was brought up to the art of engraving. He was taken away from his employment by Lewis XI., and ſent to Mentz to endeavour to bring away the ſecret of the new diſcovery of typography. By another account it ſhould ſeem that he was ſent on this miſſion by Charles VII. in 1458, and it ſays, that Jenſon, on his return, finding that the king was dead, went and ſettled elſewhere. He exerciſed his profeſſion at Venice, in which he acquired a high degree of reputation in the the three branches of cutting punches, founding types, and printing. He formed the preſent Roman character, the neatneſs of his types command admiration even in the modern improved ſtate of the art, and his editions are in great requeſt with the curious. The firſt work which iſſued from Jenſon's preſs is one entitled "Decor Puellarum," in 1471. Several editions of Latin books followed, of which the one of the lateſt date is 1481, thought to be the laſt year of his life.

JENTLING, in *Ichthyology*, the name of a river fiſh caught in the Danube, and moſt of the great rivers in Germany, and called by the Germans *ſchead*, *ſcheat*, *jent*, and *koppen*; and by Geſner *capito cæruleus*, the blue chub. See Cyprinus *Jeſes*

JENUCHSHADEGA, in *Geography*, an Indian village in Pennſylvania, on the W. bank of Alleghany river; 14 miles S. E. from the outlet of Chataughque lake.

JENYNS, Soame, in *Biography*, the only ſon of ſir Roger Jenyns, of Bottiſham-hall, Cambridgeſhire, was born in London in 1704. He was educated under his father's roof till he was ſeventeen years of age, when he was entered a fellow-commoner of St. John's college, Cambridge. He was diligent in his ſtudies, and ſpent three years at the univerſity, after which he entered upon a courſe of life well adapted to a man of independent fortune. In his firſt marriage he was not fortunate, a ſeparation took place, which the lady did not long ſurvive: but his ſecond wife outlived him. In younger life he ſuſtained the character of a beau, and his polite attention to the ladies was diſplayed in his firſt performance, as an author, which was a poem on "The Art of Dancing," publiſhed in 1728, and dedicated to lady Fanny Fielding. From this period he continued to make himſelf known occaſionally by pieces in verſe, which were ſufficiently numerous to be collected into a volume in 1752. At the death of his father his fortune enabled him to become a repreſentative in parliament for the county of Cambridge. He began his ſenatorial career by ſupporting ſir Robert Walpole, probably on account of his attachment to the Whig intereſt, and he continued ever afterwards the habitual adherent to the miniſter for the time being. This pliant conduct was rewarded by the place of one of the lords of the Board of Trade, which he held from 1755, through every change, till the Board itſelf was aboliſhed, as an uſeleſs appendage to government, in the year 1780. He was ever inclined to moderate meaſures, and was in his own mind againſt the coercion made uſe of with regard to the Americans; he wrote in defence of dean Tucker's ſcheme of leaving the coloniſts to themſelves, with the expectation, that when tired of freedom, they would gladly reſume their dependence on the mother country. As an author, Mr. Jenyns attained a conſiderable ſhare of celebrity. His poems conſiſt of a variety of miſcellaneous pieces; but his proſe works are, in point of ſtyle, of a ſuperior degree of excellence: his language is pure and perſpicuous, and at the ſame time animated with wit and embelliſhed with eloquence. He was a contributor to the periodical publication entitled "The World," and his papers, five in number, are diſtinguiſhed by humour and vivacity. In 1757 he publiſhed a "Free Enquiry into the Origin of Evil, in ſix Letters." To account for the exiſtence of evil under the government of an infinitely wiſe and good Being, he thought that to produce good excluſive of evil is one of thoſe impoſſibilities which even divine power cannot accompliſh. This related to natural or phyſical evil: with reſpect to moral evil, his theory was, that it is permitted in order to provide objects for the juſt infliction of thoſe natural evils which were unavoidable. His work produced many able replies, beſides a very ſevere and maſterly critique from the pen of Dr. Johnſon, which appeared in the Literary Magazine, and which Jenyns never forgot nor forgave. In 1756 he publiſhed a pamphlet in favour of a "National Militia," and in 1767 another, entitled "Thoughts on the Cauſes and Conſequences of the High Price of Proviſions," &c. which proves that he paid much attention to political economy. In 1776 he reſumed his theological diſcuſſions by a work which was much read, *viz.* "A View of the Internal Evidence of the Chriſtian Religion." The foundation of his reaſoning in this piece is, that this religion contains a ſyſtem of ethics not only ſuperior to, but unlike every thing which had before entered into the mind of man, and therefore that it muſt have had a divine origin. He contends that it not only carries moral purity to a degree beyond what was ever inculcated by any ſect of philoſophers, but that it wholly omits or diſparages many virtues on which they lay a great ſtreſs; as valour, patriotiſm, and friendſhip. He contends that it muſt be of divine origin becauſe no man could have imagined or propoſed ſuch a ſyſtem. This kind of defence of the truth of our holy religion led to the ſuſpicion that he was, under the maſk of friendſhip, undermining its foundation, and he met with ſome ſevere ſtrictures from ſeveral friends of rational religion, who were unwilling to abandon reaſon in their regard for Chriſtianity. Upon, however, a fair and candid view of the ſubject, Mr. Jenyns was probably a very ſincere Chriſtian; the whole of his life and converſation bore witneſs to the ſincerity of his views. In 1782 he publiſhed "Diſquiſitions on various Subjects;" in theſe he argues for the pre-exiſtent ſtate of mankind for the purpoſe of accounting for the miſeries to which they are expoſed in this world: and with regard to Chriſtianity he ſays that its doctrines are "ſo adverſe to all the principles of human reaſon, that, if brought before her tribunal, it muſt evidently be condemned:" but the chief force of his wit and argument is directed againſt the principles of civil liberty, towards which he ſhews the moſt determined hoſtility. He died at the advanced age of eighty three, in December 1787. As a country gentleman he maintained a very reſpectable character: he was upright in his conduct, and exemplary in the performance of religious duties. With the livelineſs of a man of wit he joined the urbanity of a polite well-bred gentleman, and his ſocial intercourſe is repreſented as highly engaging and delightful. His works have been collected in 4 vols. 12mo., to which is prefixed an account of his life.

JEOFAILE, or Jeofayle, in *Law*, a compound of three French words *je ay faille*, *I have failed*. It is uſed in a legal ſenſe, when the parties to any ſuit have, in pleading, proceeded ſo far, that they have joined iſſue, which ſhall be tried, or is tried by a jury, and this pleading or iſſue is badly joined, ſo that it will be error if they proceed.

In this caſe, one of the parties might, by their counſel, ſhew it to the court, as well after verdict given, as before the jury was charged, by ſaying, *This inqueſt you ought not to take*; or, *To judgment you ought not to go.*

But this occaſioning great delays in ſuits, for the redreſs thereof ſeveral ſtatutes were made; *viz.* 32 Hen. VIII. cap. 30. by which it was enacted, "That if the jury have once paſſed upon the iſſue, though afterwards there be found a jeofaile in the pleading, yet ſhall judgment be given according to the verdict of the jury." Other ſtatutes have alſo been made relating to the ſame thing, in the time of queen Elizabeth and king James I.

The 18th Eliz. cap. 14. ordains, that after verdict given in any court of record, there ſhall be no ſtay of judgment, or reverſal, for want of form in a writ, count, &c. or for want of any writ original or judicial; or by reaſon of inſufficient returns of ſheriffs, &c. But this is not to extend to appeals of felony, indictments, &c. By 21 Jac. I. cap. 13. if a verdict ſhall be given in any court of record, the judgment ſhall not be ſtayed or reverſed for variance in form between the original writ or bill, and the declaration, &c. or for want of averment of the party's being living; or becauſe the *venire facias* is in part miſawarded; for miſnomer of jurors; want of return of writs, or becauſe the return officer's name is not ſet to the return, &c. The ſtat. 16 & 17 Car. II. cap. 8. enacts that judgment ſhall not be ſtayed or reverſed after verdict in the courts of record at Weſtminſter, &c. for default in form; or becauſe there are not pledges to proſecute upon the return of the original writ, or becauſe the name of the ſheriff is not returned upon it, for default of alleging the bringing into court of any bond, &c. or for the omiſſion of *vi et armis*, or *contra pacem;* miſtaking the Chriſtian name or ſurname of either party, or the ſum of money, day, month, or year, &c. in any declaration or pleading, being rightly named in any record, &c. preceding, &c. &c. But all ſuch defects as are not againſt the right of the matter of the ſuit, or whereby the iſſue or trial are altered, ſhall be amended by the judges, though not in ſuits of appeal, of felony, indictments, informations on penal ſtatutes, which are excepted out of the act. The 22 & 23 Car. II. cap. 4. made this act perpetual. By 4 & 5 Ann. cap. 16. all the ſtatutes of jeofails ſhall extend to judgments, entered by confeſſion, *nil dicit*, or *non ſum informatus*, in any court of record; and no ſuch judgment ſhall be reverſed, nor any judgment or writ of inquiry of damages thereon ſhall be ſtayed, for any defect which would have been added by thoſe ſtatutes, if a verdict had been given; ſo as there had been an original writ filed, &c. The 5 Geo. I. cap. 13. ordains, that, after verdict given, judgment ſhall not be ſtayed or reverſed for defect in form or ſubſtance, in any bill or writ, or for variance therein, from the declaration, or any other proceeding.

JEOGERY, in *Geography*, a town of Africa, in the kingdom of Jagra. N. lat. 13° 12′. W. long. 14° 57′.

JE OUASET, a town of the Arabian Irak, on the Tigris; 110 miles N.W. of Baſſora.

JEPHTHAH, in *Scripture Hiſtory*, one of the judges of Iſrael, was a ſon of Gilead by one of his concubines, (Judg. xi. 1, 2.) who, upon his father's marriage, was expelled by the family from their houſe; and who, retiring into the land of Tob, became captain of a band of rovers. The Iſraelites, who inhabited beyond Jordan, being preſſed by the Ammonites, applied to Jephthah for aſſiſtance, and offered to place themſelves under his command; accordingly he conſented to ſuccour them on condition that at the end of the war they would acknowledge him for their prince. A.M. 2817. B.C. 1187. Jephthah, having been inveſted with the chief command, remonſtrated with the king of the Ammonites on the injuſtice of the war in which he was engaged, and obtaining no ſatisfactory reply, he levied a powerful army, and marched againſt him to battle. But before he engaged, he made a vow, that he would ſacrifice, or conſecrate to him, the firſt living creature that ſhould come out of his houſe to meet him on his return. The conteſt was ſoon decided by a complete victory; and the conqueror, as he approached his houſe at Mizpeh, perceived his daughter, an only child, advancing to congratulate him on his ſucceſs, with muſic and dancing, and other tokens of filial affection. Recollecting his vow, the interview occaſioned the moſt poignant diſtreſs; but when he communicated it to his daughter, ſhe received the intelligence with a firm and ſubmiſſive mind; and determining to acquieſce in the accompliſhment of her father's vow, ſhe merely requeſted a delay of two months, that ſhe might retire with her companions to lament her infelicity in being devoted to a life of celibacy. At the expiration of the ſtipulated interval, ſhe returned to her father, "who did with her according to the vow which he had vowed." As to the object of this vow, and the manner in which it was fulfilled, Jewiſh and Chriſtian writers, both ancient and modern, have entertained very different ſentiments. It has been a very generally received opinion, that Jephthah offered his daughter as a burnt ſacrifice; and in favour of this notion it has been alleged, that it is moſt agreeable to the natural conſtruction of the Hebrew text; that there is no rule, or precedent in ſcripture, to juſtify the practice of devoting perſons to perpetual virginity, and that this would have been as contrary to the law of God as if he had ſacrificed her; that when Jephthah made this vow, he could have expected no perſon to come out of his door to meet him, but a human perſon; that if he had intended no more than the ſacrifice of a bullock, or a ram, there was no occaſion for ſuch a ſolemn vow, or if he had meant a brutal ſacrifice, he would have vowed the offering of hecatombs rather than of a ſingle animal, on an occaſion which he thought ſo important and intereſting; and, moreover, that it was a "cuſtom in Iſrael, that the daughters of Iſrael went yearly to lament the daughter of Jephthah," (Judg. xi. 39, 40.) and this cuſtom, it is ſaid, ſeems to have been intended for an annual rite *in perpetuum*, and not that they went yearly to talk with her, as long as ſhe lived. On the other hand, it has been maintained by writers of great celebrity, that Jephthah, a judge of the Hebrew people, who were mere worſhippers of the true God, whoſe law did not admit of human ſacrifices, who had often declared his abhorrence of ſuch abominations, and who had on this account rejected the Canaanites, could not have been guilty of this groſſeſt act of heathen ſuperſtition; more eſpecially as his name is connected with other ancient worthies, who in the epiſtle to the Hebrews (xi. 32.) are enumerated as illuſtrious inſtances of the power of faith. Accordingly they have argued that Jephthah devoted his daughter to perpetual virginity, for the honour, and in the ſervice, of God. They allege, that ſhe deſired time, before the vow was accompliſhed, to bewail her virginity, and not the loſs of her life. (Judg. xi. 37.) The object of the vow was, therefore, perpetual virginity, and not death; and Jephthah would naturally be troubled, when his daughter met him (v. 35.) becauſe ſhe was his only child (v. 34.), and the accompliſhment of his vow, in the milder ſenſe of it, would render his family extinct in Iſrael, and he would thus exclude himſelf from the proſpect of having the Meſſiah among his deſcendants. In favour of the milder interpretation of this vow it is further pleaded, that the words לתנות לבת־יפתח (Judg. xi. 40.) which we render "to lament the daughter of Jephthah," ſhould be rendered "to talk with the daughter of Jephthah," that is, to viſit and comfort her in her recluſe life: the word תנה being juſtly rendered (Judg. v. 11.) to rehearſe. It is further ſaid, that in the words והיה ליהוה והעליתיהו עולה that occur in Jephthah's vow (Judg. xi. 31.), the ו (vau) ſhould be underſtood not copulatively, but disjunctively; and then the meaning would be, "whatſoever cometh to meet me, ſhall either be the Lord's, or I will offer it up for a burnt offering;" that is, in caſe it ſhould be a creature fit for ſacrifice. Others have thought it neceſſary to vindicate Jephthah's character from the blemiſh of murder; they have alſo pleaded, that he is not cenſured in any part of ſacred hiſtory for this act; that God would not have given victory and ſucceſs to Jephthah in his expedition againſt the Ammonites, upon his obliging himſelf under a ſolemn vow to offer a human ſacrifice; and that he is mentioned, as we have already ſaid, in the catalogue of believers in the epiſtle to the Hebrews. Although we can lay no great ſtreſs on ſome of the arguments that are alleged in vindication of Jephthah's character, and we cannot help conſidering his vow as raſh and unguarded; we muſt incline to the more favourable opinion. It is not improbable, that Homer grounded his fable of Agamemnon's ſacrificing his daughter Iphigenia on ſome tradition of Jephthah's ſacrifice; and it is urged, that the name of Iphigenia ſeems to be a corruption of Jephthigenia, the daughter of Jephthah. Ovid, who has dreſſed up the ſtory in his way, makes Diana put a ſtag in her room; and ſeems, therefore, to have blended the tradition of Abraham's ſacrifice with that of Jephthah.

Soon after Jephthah was exalted to that dignified ſtation, which was the recompence of his valour, the Ephraimites, envious of that glory in which they had not been allowed to participate, combined againſt him; but the conteſt was ſoon determined by their entire defeat. The Gileadites, whom he had commanded, ſeized the fords of the river Jordan, and put to death all thoſe fugitives who endeavoured to eſcape into their own country; and in order to diſtinguiſh Ephraimites from other Iſraelites, who had occaſion to croſs the river, he ordered them to pronounce the word "Shibboleth," ſignifying an ear of corn, and which was pronounced "Sibboleth" by thoſe of that tribe. As many, therefore, as were detected by this teſt were killed without mercy. The number of the Ephraimites that fell on this occaſion amounted to 42,000. After this event we know nothing more of Jephthah, excepting that he judged Iſrael, or the two tribes and a half beyond Jordan, ſix years, and then died about the year 1182 B.C. Judges, xi. xii. Calmet's Hiſt. Bible. Capelli Diatrib. de voto Jephth. Apud Criticos Sacros in Jud. xi. Hallet's note on Heb. xi. 32. Jenning's Jewiſh. Ant. vol. i. b. 1. c. 1.

JERAAN, in *Geography*, a town of Perſia, in the province of Segeſtan; 90 miles W. of Zareng.

JERABEES, a town of Syria, on the right bank of the Euphrates, anciently "Gerrhæ;" 14 miles S. of Beer.

JERAGHI, a town of Bengal; 10 miles N. of Burwah.

JERBAH, a town of Bengal; 13 miles N.W. of Ramgur.

JERBOA, in *Zoology*. See DIPUS *Sagitta* and *Jaculus*.

JERBOSAJA, in *Geography*, a town of Africa, in the country of Quoja.

JEREJA, a town of Africa, in the kingdom of Fonia.

JEREMIAH, in *Scripture Hiſtory*, a canonical book of the Old Teſtament. The divine writer was of the race of the ten prieſts: the ſon of Hilkiah of Anathoth in the tribe of Benjamin. He was called when very young to the prophetic office, about the thirteenth of Joſiah, or 628 B.C.; and continued in the diſcharge of it above forty-one years. Jeremiah's life was often expoſed to danger, and he was committed to priſon, on account of his remonſtrances againſt the kings of Judah, and the predictions, delivered by him, which announced the calamities that awaited them; particularly under the reign of Jehoiakim and of Zedekiah. After the conqueſt of Jeruſalem by Nebuchadnezzar, he was ſet at liberty by order of the king, and it was left to his option either to accompany Nebuzaradan, the general of Nebuchadnezzar, to Babylon, or to remain in Judea with Gedaliah, who was appointed governor of the miſerable remnant of the people that was left in that country. Jeremiah preferred the latter alternative, and went to reſide with Gedaliah at Mizpeh. After the aſſaſſination of Gedaliah, Jeremiah, accompanied by Baruch, removed to Egypt. Of the ſubſequent events of his life, we have no authentic account. He is ſaid by St. Jerom, &c. to have been ſtoned to death by the Jews at Tahpanhes, where he reſided, for preaching againſt their idolatry; but it is moſt likely that he died in Egypt, much advanced in years, and broken by the calamities which happened to himſelf and his country. Some rabbis, however, aſſert, that he returned to Judea, and others ſay that he went to Babylon, and died there.

There were ſeveral collections of Jeremiah's prophecies; one made by God's command in the fourth year of Jehoiakim, chap. xxxvi. 2. This contained all the prophecies he had publiſhed to that time, as well againſt the other nations as againſt the Jews. The former of theſe in our preſent collection are put by themſelves at the end of the book, from chap. xlvi. to the end of the laſt. But in the preſent copies of the Septuagint they follow immediately after the thirteenth verſe of the twenty-fifth chapter. Another collection of theſe prophecies, mentioned chap. i. 3. comprehends all thoſe which Jeremiah had uttered to the time of the captivity, and were probably collected by Baruch, his amanuenſis, and are put together without any regard to the order of time. To this was added another collection of prophecies, publiſhed about the time of his going down into Egypt, contained in chap. xlii. xliii. xliv. at the end of which Ezra, or ſome others, after the captivity, added thoſe prophecies which Jeremiah delivered againſt the Gentiles. The fifty-ſecond chapter was probably added by Ezra, and is chiefly taken out of the latter part of the ſecond book of Kings, with additions, which Ezra might ſupply out of the public records. The book of Jeremiah is altogether written in Hebrew, except the eleventh verſe of the tenth chapter, which is Chaldee.

It has been obſerved, that there is great confuſion in the arrangement of Jeremiah's prophecies. A late excellent commentator, Mr. Blaney, has endeavoured, with great judgment, to reſtore their proper order, by a tranſpoſition of the chapters, wherever it appeared to be neceſſary. The firſt twelve chapters ſeem to contain all the prophecies that were delivered in the reign of Joſiah. Soon after the acceſſion of Jehoiakim to the throne, upon the depoſition of Jehoahaz, Jeremiah was commiſſioned to denounce the divine judgments againſt him and the people, unleſs they repented of their wickedneſs. He thus provoked their indignation; and they accuſed him as a perſon whoſe ſedition deſerved death. He was acquitted, however, by the nobles, and by a powerful influence preſerved from the king's vengeance. About four years afterwards he predicted the deſtruction of Jeruſalem and of the temple, and the Babyloniſh captivity, which he foretold would laſt 70 years. For this prophecy he was ſent to priſon, and he narrowly eſcaped with his life. His prophecies under this reign are continued from the 13th to the 20th chapter incluſively; to which we muſt add the 22d, 23d, 25th, 26th, 35th and 36th chapters, together with the 45th, 46th, 47th, and probably the 48th, as far as the 34th verſe of the 49th chapter. Under the reign of Zedekiah, the laſt king of Judah, Jeremiah was frequently deputed to the exerciſe of his prophetic office. His predictions in this reign were contained in the 21ſt and 24th chapters, the 27th to the 34th, and the 37th to the 39th incluſively, together with the laſt ſix verſes of the 49th chapter, and the 50th and 51ſt chapters concerning the fall of Babylon. It does not appear at what period of Jeremiah's life he delivered the prophecy concerning the future reſtoration of Iſrael to their own land, and the re-eſtabliſhment of their civil and religious conſtitution under the Meſſiah, comprized in the 30th and 31ſt chapters.

St. Jerom has obſerved upon this prophet, that his ſtyle is more eaſy than that of Iſaiah and Hoſea; that he retains ſomething of the ruſticity of the village where he was born; but that he is very learned and majeſtic, and equal to thoſe two prophets in the ſenſe of his prophecy.

We ſhall cloſe this article with an extract from the admirable lectures of biſhop Lowth (ſee lect. xxi.) relating to the character of Jeremiah as a writer. "Iſaiah," he ſays, "Jeremiah, and Ezekiel, as far as relates to ſtyle, may be ſaid to hold the ſame rank among the Hebrews, as Homer, Simonides, and Æſchylus, among the Greeks." "Jeremiah, though deficient neither in elegance nor ſublimity, muſt give place in both to Iſaiah. Jerom ſeems to object againſt him a ſort of ruſticity of language, no veſtige of which, I muſt however confeſs, I have been able to diſcover. His ſentiments, it is true, are not always the moſt elevated, nor are his periods always neat and compact; but theſe are faults common to thoſe writers, whoſe principal aim is to excite the gentler affections, and to call forth the tear of ſympathy or ſorrow. This obſervation is very ſtrongly exemplified in the *Lamentations* (ſee that article), where theſe are the prevailing paſſions; it is however frequently inſtanced in the prophecies of this author, and moſt of all in the beginning of the book (ch. ix. xiv. 17, &c. xx. 14—18.) which is chiefly poetical. The middle of it is almoſt entirely hiſtorical. The latter part, again, conſiſting of the ſix laſt chapters, is altogether poetical (ch. xlvi—li. to v. 59.); it contains ſeveral different predictions, which are diſtinctly marked, and in theſe the prophet approaches very near the ſublimity of Iſaiah. On the whole, however, I can ſcarcely pronounce above half the book of Jeremiah to be poetical."

The verſion of Mr. Blaney, publiſhed in 1784, and accompanied with numerous and valuable notes, is deemed to be the beſt extant; the author having availed himſelf of the aſſiſtance afforded by Dr. Kennicott's collection, and other ſources of information, domeſtic and foreign. Blaney's notes. Lowth de Sacra Poeſi Præl. lect. xxi. Dupin. Lowth's Paraph. Gen. Biog.

JEREMIAH, in *Geography*, a town of Paleſtine, anciently called *Anathoth*, the birth-place of the prophet Jeremiah; 6 miles E. of Jeruſalem.

JEREMIE, CAPE, a cape on the S. coaſt of the iſland of Hiſpaniola. N. lat. 18° 16′. W. long. 17° 15′.

JEREMIE, a juriſdiction, town, and cape, within the bay of Leogane, on the ſouthern peninſula of the iſland of St. Domingo. The juriſdiction contains two pariſhes, and its ſoil is excellently adapted for the culture of coffee. The town is ſeated on the W. ſide of the bay; and point Jeremie lies in N. lat. 18° 42′ 30″. W. long. from Paris 76° 32′.

JEREMYSQUAM, an iſland of America, in Lincoln county and ſtate of Maine, which, with Folly iſland, forms the mouth of Sheepſcott river, in Wiſcaſſet bay.

JERF, a town of Norwegian Lapland; 100 miles W.S.W. of Wardhuys.

JERFALCON, the Engliſh name of the gyrfalco, a very fierce, bold, and large bird, the largeſt of all the falcon kind. See GYRFALCON.

JERGUER, in the *Cuſtom Houſe*, one who overſees the accounts and conduct of the waiters.

JERICHO, in *Ancient Geography*, a conſiderable city of Paleſtine, in the tribe of Benjamin, about ſix miles W. from Jordan, and 22 almoſt E. from Jeruſalem. It was ſituated in a ſpacious plain, producing all ſorts of fruits, eſpecially palm-trees, whence it was called "the city of palm-trees." Jericho was the firſt city in Canaan taken by Joſhua. (Joſh. ii. 1, 2, &c.) in the year 1469 B.C., and burnt by ſpecial order. About 537 years afterwards, Hiel of Bethel undertook to rebuild it (1 Kings, xvi. 34.); and on this occaſion loſt his two ſons. But before this period there was a city of Jericho in the vicinity of the original place of the ſame name. The Jericho of Hiel acquired its original ſplendour and population: it was adorned with a magnificent palace and other edifices by Herod, and it gained reputation from having been the place where Jeſus Chriſt performed many miracles. Its importance and ſplendour remained for many ages, till at length it was ſacked by Veſpaſian. Adrian re-eſtabliſhed it A.D. 138, and after ſubſequent diſaſters, it was repaired by the Chriſtians, and made the ſeat of a biſhop; but in the 12th century it was finally deſtroyed by the infidels. This famous city, the walls of which were 20 ſtadia, or 2½ miles in circumference, is now reduced to a poor village, called "Raha," on a plain ſix or ſeven leagues long, by three wide, round which are ſeveral barren mountains, that render it extremely hot. Inſtead of the balm of Mecca, which it formerly produced, there is another ſpecies, reſembling a plum-tree, called "Zakkoun," which yields a ſweet oil, celebrated for healing wounds. This is now the ſole commerce of Raha.

JERICHO, a town of the duchy of Magdeburg, ſeated on the Elbe; 32 miles N.N.E. of Magdeburg. N. lat. 52° 30′. E. long. 12° 5′.—Alſo, the circle of the ſame duchy, which includes the town, alſo Burg and Sandau, and a few villages.

JERICHO, *Roſe of*, in *Botany*. See ANASTATICA.

JERICO, in *Geography*, a poſt-town in Chittenden county, Vermont, S.E. of Eſſex, and N.E. of Williſton, ſeparated from the latter by Onion river, and containing 728 inhabitants.—Alſo, a poſt-town of New York, in Chenengo county, on the E. branch of the Suſquehanna, containing 939 inhabitants.

JERJERAIA, a town of the Arabian Irak, on the Tigris; 36 miles S.E. of Al-Modain.

JERIM, a ſmall town of Arabia, in the province of Yemen, the ſeat of a Dola, who reſides in a caſtle ſituated on a rock. The houſes are built of ſtone, and of bricks which had been dried in the ſun. After a dry ſeaſon, locuſts are very numerous in a plain near this town; they are then gathered and dried for winter proviſions at Jerim, as well as in other places of Arabia. The market is a place of amuſement. Taylors, ſhoemakers, blackſmiths and other artiſans ſat along the ſtreets, behind low walls, and wrought at their trades in the open air. Surgeons were ſeen drawing blood with a common knife, and dreſſing the wound with pieces of hartſhorn, cut off at the root of the horn. The number of houſes in this place is about 2000; 80 miles N.E. of Mocha. N. lat. 14° 17′. E. long. 44° 22′.

JERKIN, a name given by ſome to the male of the jerfalcon. See GYRFALCON.

JERKITTYA, in *Geography*, a town of Hindooſtan, in Bahar; 22 miles S.E. of Bettiah.

JERMAH, or GERMAH, a town of Africa, in Fezzan, ſuppoſed to be built on the ſcite of Garama, the capital of the country of the Garamantes; ſituated S. of Zuéela, and nearly at the ſame diſtance from Mourzouk. It is diſtinguiſhed, like Zuéela, by numerous herds, eſpecially of ſheep and goats, that are obſerved around it; by the various and abundant produce of its fields; and by numerous and majeſtic ruins that indicate its former ſplendour; though at preſent the houſes are cottages built of clay; 60 miles S.E. of Mourzouk.

JERMOLI, in *Biography*, the principal tenor ſinger in the comic opera, ſucceeded Trebbi in 1777, when the Todi was the firſt Buffa. Neither his voice, action, or ſtyle of ſinging, were of the firſt claſs, or above mediocrity ; and when Lovattini quitted this country, he left a blank in the comic opera, which has never ſince been filled up to our ſatisfaction.

JERMUK, in *Geography*, a river of Syria, anciently "Hieromax," which runs into the lake of Tiberias, near its ſouthern extremity.

JEROM, or JEROME, *St.*, EUSEBIUS HIERONYMUS, in *Biography*, an eminent father of the Chriſtian church, was born of Chriſtian parents at Stridon, on the confines of Dalmatia and Pannonia, probably about the year 342 ; though others date his birth in 329, 330, or 331 ; and as he died in the year 420, they ſay that he was about 90 years of age when he died. Several circumſtances corroborate the former ſtatement, aſſigned by Lardner as the era of his birth. He commenced his ſtudies in grammar and other parts of literature at Rome, where he reſided at the time of the emperor Julian's death. Donatus, the celebrated grammarian, was one of his preceptors ; and his ſtudies in logic and various branches of philoſophy were directed by other teachers. His application and proficiency were very diſtinguiſhed at an early period of life ; and it appears that, during his reſidence at Rome, he cultivated the theory and practice of rhetoric, and laid the foundation of that extenſive acquaintance with theology and eccleſiaſtical hiſtory, and alſo with the Hebrew language, in which he afterwards excelled. From Rome he removed to Gaul ; and at Aquileia he formed an intimate acquaintance with Rufinus, a preſbyter of that city. He afterwards returned to Italy, having collected, while he was in the weſtern-empire, a conſiderable library, to which in the progreſs of his life he made many valuable additions. From Italy he went into the Eaſt, where he ſpent ſeveral years, partly in the deſerts of Syria, partly at Antioch, and partly at Conſtantinople. At Antioch he was ordained preſbyter by Paulinus in 378 ; accepting the office on condition that he ſhould not be confined to one church, or be drawn away from that monaſtic life which he conceived to be moſt favourable to the proſecution of his ſtudies. On this kind of life he ſeems to have entered when he was 30 years of age ; and though during a period of four years he enlarged his acquaintance with the oriental languages, and with thoſe branches of knowledge which aſſiſted him in underſtanding and interpreting the ſcriptures, the auſterities he practiſed had ſo impaired his health, that it became neceſſary for him to return to Antioch, in order to recruit his ſtrength. The church at Antioch was at this time diſtracted by contending parties ; but Jerome declined taking a decided part with either of them, till he had obtained a letter from Damaſus, biſhop of Rome, which determined him to eſpouſe the cauſe of Paulinus. Having, after his ordination, which we have already mentioned, reſided for ſome time at Bethlehem, he made an excurſion from thence to Conſtantinople, with a view of deriving benefit from the inſtructions of Gregory Nazianzen, and from whom he learned, as he himſelf acknowledges, the right method of expounding the holy ſcriptures. In the year 382, he accompanied Paulinus, biſhop of Antioch, and Epiphanius, biſhop of Salamis in the iſland of Cyprus, to Rome ; and here he was employed by pope Damaſus, as his ſecretary, in conducting a variety of negotiations for extending the authority of the papal power. In the ſuperintendance of a ſociety of Roman ladies, who had renounced the world, and devoted themſelves to a religious life, which Damaſus aſſigned him, he acquitted himſelf to the ſatisfaction of the pope ; but not without incurring the diſpleaſure of the friends and relations of thoſe weak females, who abandoned their ſtations in civil ſociety, and miſapplied their wealth to the ſupport of uſeleſs and pernicious inſtitutions. He had likewiſe other enemies, who diſapproved the freedom with which he reprehended the corrupt manner of the clergy, and the vices of the people. Another circumſtance that rendered his ſituation at Rome unpleaſant to him was the part he took in his diſputes with the followers of Origen, whom he had often commended, and many of whoſe works he had tranſlated into Latin, but whoſe peculiar opinions he now oppoſed as heretical. The Origeniſts were thus exaſperated, and circulated ſome ſcandalous but unfounded reports of a diſreputable connection with Paula, in whoſe houſe he lodged, and who afterwards, with her daughter, followed him to the Eaſt. (See EUSTOCHIUM.) Jerome, thus diſquieted at Rome, determined to return to the Eaſt ; and the death of Damaſus haſtened the execution of his purpoſe ; and in 385 he embarked on board a ſhip bound for Antioch. From Antioch he went to Jeruſalem, where he pretends to have been witneſs to a number of miracles, which have gained little credit either among Proteſtants or reſpectable Catholics. In Egypt he attended the lectures of the learned Didymus, and he viſited the monaſteries in the deſert of Nitria. In 385 he ſettled at Bethlehem, where he was joined by Paula and other ladies who had followed him from Rome, as well as by many other perſons of both ſexes, who admired his piety, and who were attached to his ſtrict diſcipline. At Bethlehem Paula founded a church and four monaſteries, one for men, which was committed to the ſuperintendance of Jerome, and three for women, over which ſhe herſelf preſided. In this ſituation he employed his talents and learning to many uſeful purpoſes, in the education of ſeveral young perſons of rank, and in the compoſition of various works, that reflect honour on his name and memory : and he might have been as happy as he was uſeful, if he had not indulged an intemperate deteſtation of the opinions of Origen, and engaged in numerous ardent conteſts with thoſe who defended and propagated them. In 410 the monaſtery of Jerome afforded an aſylum to many of thoſe fugitives who ſought relief in the Holy Land from the ravages of the Goths, who laid Italy waſte, and beſieged Rome ; but ſuch was the unjuſtifiable bigotry of his temper, that he excluded all who favoured the opinions of Origen from a ſhare in his hoſpitality. At Bethlehem Jerome terminated his life in the year 420.

Few will be inclined to diſpute Jerome's title to the character of being the moſt learned of all the Latin fathers. This title is evinced by the teſtimony of the beſt judges, and by the numerous works of which he was the author. His judgment, however, was not ſound and diſcriminating ; nor was his reaſoning perſpicuous and accurate ; and his ſtyle has been juſtly repreſented as more declamatory than argumentative. But the acrimony of his temper, and the total want of candour that appears in his controverſial writings, throw a dark ſhade over all his other good qualities. "His complexion," ſays Moſheim, "was exceſſively warm and choleric ; his bitterneſs againſt thoſe who differed from him extremely keen ; and his thirſt of glory inſatiable. He was ſo prone to cenſure, that ſeveral perſons, whoſe lives were not only irreproachable, but even exemplary, became the objects of his unjuſt accuſations." The learned Cave ſays, "he was a very hot and furious man, who exerciſed no command over his paſſions. When once provoked, he treated his adverſaries in the rougheſt manner, and did not even abſtain from invective and ſatire ; witneſs what he has written againſt Rufinus, who was once his friend, John of Jeruſalem, Jovinian, Vigilantius, and others. Upon theſe men, when they gave him the ſlighteſt provocation, he poured forth a torrent of all the abuſive terms which he could deviſe, without any regard to their perſons, dignity, or learning." His behaviour to the Origeniſts; his declaration principally reſpecting ſuch, "we receive and entertain all ſtrangers without regard to merit; none are excepted but heretics;" and his other declaration in his controverſy with Rufinus, "let us but have the ſame faith, and we are reconciled," preclude the charge of want of candour, if we ſay that Jerome would not have confined himſelf to the mere abuſe and invective of words, if he had been entruſted with power. There is but a ſtep between ſtarving heretics in diſtreſs, and tying them to the ſtake. None can approve of the high terms in which he extols celibacy and virginity, ſo as to ſeem to diſparage the marriage ſtate; and of his culpable credulity we have ample evidence. The candid Lardner, without diſguiſing or condemning the charges which have been alleged againſt him upon the beſt authority by others, allows him to bear teſtimony in his own favour, and he acquits him from the imputation of vanity: thus he ſpeaks of himſelf in various paſſages collected from his works: "That he had been from the beginning diligent and inquiſitive; that all his days he had been employed in the ſchools of rhetoricians and philoſophers, or in reading the ſcriptures of the Old and New Teſtament; that, beſide Latin and Greek, he had endeavoured to make himſelf maſter of Hebrew; that he did not rely upon his own judgment and underſtanding in interpreting the ſcriptures, but conſulted other commentators, and was willing to improve by their labours; that he never thought himſelf too old to learn, but embraced all opportunities of increaſing in knowledge; that he was not employed, as many monks were, in making baſkets of ruſhes, and ſkreens of palm-leaves, to get a livelihood, but in ſtudying the ſcriptures, and putting out correct editions of them."

Of all the productions of Jerome, the moſt uſeful are his interpretations of the ſacred ſcriptures, and thoſe of his letters, which contain critical remarks and diſſertations on particular texts in the bible. The principal of his works, which are enumerated by Cave and Dupin, are, a new Latin verſion of the whole "Old Teſtament," from the Hebrew, accompanied with a corrected edition of the ancient verſion of the "New Teſtament," which, after having been at firſt much oppoſed, was adopted by the Catholic church, and is commonly diſtinguiſhed by the appellation of "Vulgate," which ſee; "Commentaries" on moſt of the books of the Old and New Teſtament; "A Treatiſe on the Lives and Writings of Eccleſiaſtical Authors;" "A Continuation of the Chronicle of Euſebius;" moral, critical, hiſtorical, and miſcellaneous "Letters." The firſt printed edition of his works was that at Baſil, under the care of Eraſmus, 1516—1526, in ſix vols. folio, of which there have been ſeveral ſubſequent impreſſions at Lyons, Rome, Paris, and Antwerp. The moſt correct edition is that of Paris, by Father Martianay, a Benedictine monk of the congregation of St. Maur, 1693—1706, in five vols. fol. Cave, H. L. vol. i. Dupin. Moſheim. Jortin's Rem. E. H. b. ii. pt. ii. Lardner's Works, vol. v. Gen. Biog.

In Jerom's works many particulars occur relative to the muſic of his time, and the chants of the church, eſpecially in his commentary on the epiſtle to the Epheſians, ch. v. ver. 19. p. 652, where there is a memorable paſſage in favour of eccleſiaſtical ſinging: "Speaking to yourſelves in pſalms and hymns, and ſpiritual ſongs, ſinging and making melody in your heart to the Lord," cries out, "Audiant hæc adoleſcentuli: audiant hi quibus pſallendi in eccleſia officium eſt, Deo non voce, ſed corde cantandum: nec in Tragœdorum modum guttur et fauces dulci medicamine colliniendas, ut in eccleſia theatrales moduli audiantur et cantica, ſed in timore, in opere, in ſcientia ſcripturarum."

Jerome *of Prague*, ſo called from the name of the city in which he was born, devoted his youth to the purſuit of knowledge, which he ſought after in all the more conſiderable cities of Europe; particularly in thoſe of Prague, Paris, Heidelberg, Cologn, and Oxford. In the four former univerſities he was admitted to the degree of M.A., and in one of them to that of D.D. in the year 1399. At the latter place he became acquainted with the works of Wickliff, many of which he tranſlated into his native language. Upon his return to Prague, in the year 1400, he openly avowed himſelf a follower of Wickliff, and became attached to Huſs, who was at the head of the party in Bohemia, which had eſpouſed the doctrines of the Britiſh reformer. Jerome, though ſuperior to Huſs in abilities and learning, was not ſo well qualified as the leader of a party, becauſe, with all his great and good qualities, he wanted that gentle, conciliatory temper for which Huſs was diſtinguiſhed. They both concurred, however, in ardent efforts for reſtraining the deſpotiſm of the papal court, and reforming the licentiouſneſs of the clergy. In the year 1410 he was invited by the king of Poland to regulate the univerſity at Cracow; from Poland he went to Hungary, in which country he was accuſed of hereſy; and upon his removal to Vienna he was impriſoned on account of his opinions, but obtained his liberty in conſequence of the ſolicitation of the univerſity of Prague. As ſoon as he heard that his friend Huſs was at Conſtance, ready to appear before the Council, he pathetically exhorted him to maintain a firm and unyielding temper in this great trial, and ſtrenuouſly to inſiſt upon the corrupt ſtate of the clergy, and the neceſſity of reformation, aſſuring him, at the ſame time, that if he ſhould receive information in Bohemia, that his adverſaries were likely to overpower him, he would immediately repair to Conſtance, and give him every kind of aſſiſtance in his power. Huſs earneſtly diſſuaded him from the execution of his purpoſe, as equally unprofitable to him and dangerous to Jerome himſelf; but he was invincible, and arrived at Conſtance on the fourth of April, 1415, about three months before the death of Huſs. Although he entered the town privately, his viſit and the deſign of it was ſoon made public; and he was informed by his friends that he could be of no ſervice to Huſs, and that the council, ſo far from being diſpoſed to hear him, intended to ſeize him. In theſe circumſtances he thought it moſt prudent to retire, and accordingly withdrew to Iberling, an imperial town about a mile from Conſtance. From this place he addreſſed a letter to the emperor, profeſſing his readineſs to appear before the council, if that prince would give him a ſafe-conduct. But Sigiſmund had the honeſty to refuſe. Jerome then tried the council, but could obtain no favourable anſwer. In this ſtate of perplexity he poſted papers in all the public places of Conſtance, avowing himſelf prepared to appear at Conſtance in defence of his character and doctrine, which had been much defamed; and alſo his reſolution to retract every error that ſhould be proved againſt him, on condition that the faith of the council might be pledged for his ſecurity. As he received no anſwer to theſe papers, he ſet out on his return to Bohemia, carrying with him a certificate ſigned by ſeveral of the Bohemian nobility then at Conſtance, which teſtified that he uſed all poſſible means, which prudence ſuggeſted, in order to procure a hearing. At a village, upon the borders of the Black Foreſt, Jerome fell by accident into company with ſome prieſts, and a converſation occurring with reference to the council of Conſtance, Jerome became warm, and among other ſevere things he called that aſſembly the "ſchool of the devil," and "a ſynagogue of iniquity." The prieſts, incenſed by this language, informed againſt him to the chief magiſtrates, by whom he was arreſted and delivered into the hands of the duke of Sultzbach. The duke, having Jerome in cuſtody, wrote to the council for directions; and he was deſired to ſend his priſoner immediately to Conſtance. The elector-palatine then met him, and conducted him in triumph to the town; himſelf riding on horſeback, with a numerous retinue, who led Jerome, in fetters, by a long chain, after him. As ſoon as he was brought before the council, the clamour againſt him became loud and tumultuous; and among others, who diſgraced themſelves on this occaſion, was John Gerſon, chancellor of the univerſity of Paris, one of the moſt learned, as well as the moſt knowing men of his time, but deſtitute of that candour which uſually attends knowledge. In the chancellor's invective and reproach the rectors of the univerſities of Cologn and Hiedelberg concurred; but Jerome had no opportunity of replying. A thouſand voices burſt out from every quarter, "Away with him! burn him! burn him!" After an interval of about half an hour the tumult partly ſubſided; and Jerome, availing himſelf of a momentary pauſe, looked round the aſſembly with a noble air, and cried out aloud, "Since nothing can ſatisfy you but my blood, God's will be done." He was then carried from the aſſembly into a dungeon, under the cuſtody of a guard. Whilſt he was ruminating upon his approaching fate in this cell, he heard a voice addreſſing him in theſe words, "Fear not, Jerome, to die in the cauſe of that truth, which, during thy life, thou haſt defended." "Whoſoever thou art," replied the intrepid priſoner, directing his eyes to the window from which the voice ſeemed to proceed, "who deigneſt to comfort an abject man, I give thee thanks for thy kind office. I have indeed lived defending what I thought the truth: the hardeſt taſk yet remains, to die for its ſake; but God, I hope, will ſupport me againſt fleſh and blood." The guard was alarmed, and Maddonwitz, who had rendered ſervices to Huſs, was diſcovered to be the offender. This incident was a pretence for a more ſevere treatment of Jerome, who was immediately conveyed to a ſtrong tower, where, his hands being tied behind his neck, he was left to languiſh in that painful poſture for two days, without any aliment beſides bread and water. Theſe ſeverities were inflicted with the deſign of forcing him to make a recantation; and the illneſs which they occaſioned, in the courſe of which he urged the council to allow him a confeſſor, afforded an opportunity of preſſing him with arguments to this purpoſe. Jerome, however, remained immoveable. A ſimilar attempt was made upon him immediately after the death of Huſs; but he was ſtill invincible. However, though he was not to be ſubdued by the ſimple fear of death, impriſonment, chains, hunger, ſickneſs, and even torture, through a ſucceſſion of many months, was too great a trial for human nature. Three times was he brought before the council, and carried back to the horrors of his dungeon, before his enemies could prevail againſt him. At length he began to waver; and on the 23d of September, a fatal day, which he recollected with ſhame and grief, he read a loud and ample recantation of all the opinions he had maintained, couched in words directed by the council. In this paper he acknowledged the errors of Wickliff and Huſs, entirely aſſented to the condemnation of the latter, and declared himſelf, in every article, a firm believer with the church of Rome. Having thus acted againſt his conſcience, he retired from the council with a heavy heart. His chains, indeed, were taken away; but the load was transferred from his body to his mind. Vain were the careſſes of thoſe about him: they only mocked his ſorrow. His priſon was now indeed a gloomy ſolitude. The anguiſh of his own thoughts had made it ſuch. Paletz and Du Caſſis, the chief managers againſt him, ſoon perceived this change; and they determined to bring him to a new trial. Several perſons, however, and particularly the cardinals of Cambray and Florence, objected to a new trial. But their endeavours were ineffectual, a torrent of zeal and bigotry bore down all oppoſition; and even the learned Gerſon again diſgraced himſelf by joining in the tumultuous clamour; with great indecency employing his pen, as well as his tongue, upon this occaſion. This kind of agitation continued for half a year: ſo that it was not till May in the year 1416, when Jerome was called again before the council. The proſpect afforded him pleaſure, and he rejoiced at an opportunity of acknowledging publicly that ſhameful defection, which hung ſo heavy upon him. The chief articles alleged againſt him were, his adherence to the errors of Wickliff—his having had a picture of that heretic in his chamber, arrayed in the common ornaments of a ſaint—his counterfeiting the ſeal of the univerſity of Oxford in favour of Wickliff—his deſpiſing the authority of the church after excommunication—and his denial of tranſubſtantiation. Having proteſted his innocence, and given a circumſtantial detail of his coming to Conſtance, and of all that had ſince befallen him, he raiſed his voice, and having expreſſed himſelf with ſome aſperity againſt his accuſers, he told them that he was going to lay himſelf more open to them than he had yet done. He then, with great emotion, declared before the whole aſſembly, that the fear of death only had induced him to retract opinions which from his heart he maintained: that he had done injuſtice to the memory of thoſe two excellent men, John Wickliff and John Huſs; whoſe examples he revered, and in whoſe doctrine he was determined to die. He concluded with a ſevere invective againſt the clergy; the depravity of whoſe manners, he ſaid, was now every where notorious. His ſpeech produced a wonderful effect on the whole aſſembly; and many wiſhed that his life might be ſaved. His judges, however, precipitated the paſſing of ſentence; and on the ſame day, or a few days after, he was condemned for having held the errors of Wickliff, and for apoſtatizing. He was then immediately delivered over to the civil power, and, attired with a cap like that with which Huſs had been adorned, he was led to execution. The poſt to which he was chained was hewn into a monſtrous and uncouth figure of Huſs, and ornamented into a ridiculous likeneſs of him. When the wood began to blaze, he ſang a hymn; and when the flames ſcorched him, he was heard to cry out "O Lord God! have mercy upon me!" and a little afterwards, "Thou knoweſt how I have loved the truth." The wind parting the flames, his body, full of large bliſters, exhibited a dreadful ſpectacle to the beholders; his lips continued ſtill moving, as if actuated by intenſe devotion. During a full quarter of an hour, he diſcovered the ſigns, not only of life, but of intellect. Even his enemies thought the rage of his judges purſued him too far, when they ſaw his wretched coverlet, and the other miſerable garniture of his priſon, by their order, conſumed in the fire after him; and his aſhes, as thoſe of Huſs had been, thrown into the Rhine.

The celebrated Poggio of Florence was preſent at the trial of Jerome, and in a letter to his friend Leonard Aretine, has given an intereſting account of it. For the whole letter we refer to Shepherd's life of Poggio Bracciolini, and for ſeveral extracts to Gilpin's life of Jerome. "It was indeed amazing," ſays this celebrated writer, "to hear with what force of expreſſion, with what fluency of language, and with what excellent reaſoning he anſwered his adverſaries;

adverſaries ; nor was I leſs ſtruck with the gracefulneſs of his manner ; the dignity of his action ; and the firmneſs and conſtancy of his whole behaviour."—" Here," ſaid Jerome," as cited by this writer, ſtanding in the midſt of the aſſembly, " here is juſtice ; here is equity. Beſet by my enemies ; I am already pronounced a heretic ; I am condemned, before I am examined.—Were you Gods omniſcient, inſtead of an aſſembly of fallible men, you could not act with more ſufficiency. Error is the lot of mortals ; and you, exalted as you are, are ſubject to it. But conſider, that the higher you are exalted, of the more dangerous conſequence are your errors.—As for me, I know I am a wretch below your notice : but at leaſt conſider, that an unjuſt action, in ſuch an aſſembly, will be of dangerous example." When Jerome was accuſed of hating and defaming the holy ſee, the pope, the cardinals, the prelates, and the whole eſtate of the clergy, he ſtretched out his hands, and ſaid, in a moſt moving accent, " On which ſide, reverend fathers, ſhall I turn me for redreſs ? whom ſhall I implore ? whoſe aſſiſtance can I expect ? which of you hath not this malicious charge entirely alienated from me ? which of you hath it not changed from a judge into an inveterate enemy ?—It was artfully alleged indeed ! Though other parts of their charge were of leſs moment, my accuſers might well imagine, that if this were faſtened on me, it could not fail of drawing upon me the united indignation of my judges."

On the third day of this memorable trial, what had paſt was recapitulated ; when Jerome, having obtained leave, though with ſome difficulty, to ſpeak, began his oration with a prayer to God ; whoſe divine aſſiſtance he pathetically implored. He then obſerved, that many excellent men, in the annals of hiſtory, had been oppreſſed by falſe witneſſes, and condemned by unjuſt judges. Beginning with profane hiſtory, he inſtanced the death of Socrates, the captivity of Plato, the baniſhment of Anaxagoras, and the unjuſt ſufferings of many others. He then inſtanced the many worthies of the Old Teſtament, in the ſame circumſtances, Moſes, Joſhua, Daniel, and almoſt all the prophets ; and laſtly thoſe of the New, John the Baptiſt, St. Stephen, and others, who were condemned as ſeditious, profane, or immoral men. An unjuſt judgment, he ſaid, proceeding from a laic was bad ; from a prieſt, worſe ; ſtill worſe from a college of prieſts ; and from a general council, ſuperlatively bad.—Theſe things he ſpoke with ſuch force and emphaſis, as kept every one's attention awake.

" The perjured witneſſes," ſaid Jerome, " who have appeared againſt me, have won their cauſe ; but let them remember they have their evidence once more to give before a tribunal, where falſhood can be no diſguiſe."

" His voice," ſays Poggio, " was ſweet, diſtinct, and full : his action every way the moſt proper, either to expreſs indignation, or to raiſe pity ; though he made no affected application to the paſſions of his audience. Firm and intrepid he ſtood before the council ; collected in himſelf ; and not only contemning, but ſeeming even deſirous of death. The greateſt character in ancient ſtory could not poſſibly go beyond him. If there is any juſtice in hiſtory this man will be admired by all poſterity.—I ſpeak not of his errors : let theſe reſt with him. What I admired was his learning, his eloquence, and amazing acuteneſs. God knows whether theſe things were not the ground-work of his ruin.

" With a cheerful countenance, and more than Stoical conſtancy, he met his fate ; fearing neither death itſelf, nor the horrible form in which it appeared. When he came to the place, he pulled off his upper garment, and made a ſhort prayer at the ſtake : to which he was ſoon after bound with wet cords, and an iron chain ; and incloſed as high as his breaſt with faggots.

" Obſerving the executioner about to ſet fire to the wood behind his back, he cried out ' Bring thy torch hither. Perform thy office before my face. Had I feared death, I might have avoided it.'

" As the wood began to blaze, he ſang an hymn, which the violence of the flames ſcarcely interrupted.

" Thus died this prodigious man. The epithet is not extravagant. I was myſelf an eye-witneſs of his whole behaviour. Whatever his life may have been, his death, without doubt, is a noble leſſon of philoſophy." See Bracciolini.

Jerome de Santa Fé, a learned Spaniſh Jew in the fifteenth century, whoſe original name was Joſhua Larchi. He became a Chriſtian, and upon his baptiſm changed his name for that under which he has been juſt deſcribed. He was phyſician to Peter de Luna, who was choſen pope by the cardinals at Avignon in oppoſition to Boniface IX., and took the name of Benedict XIII. When this pontiff was in Spain, in the year 1412, he ordered a public conference to be held between ſome learned Chriſtians at Tortoſa, and the moſt celebrated Jewiſh rabbis in Arragon and Catalonia, on the ſubject of the Meſſiah's character, and the evidence brought forwards to prove that Jeſus of Nazareth was that perſon : on this occaſion Jerome acquitted himſelf with credit to his own learning and abilities, and to the new faith which he had embraced. In the following year he preſented to the pope a treatiſe in confutation of the errors of the Jews, and another againſt the Talmud, which are ſaid to have produced ſuch an impreſſion upon the Jews, that more than five thouſand became Chriſtians. They were publiſhed at Frankfort under the title of " Hebræo-magiſtis," in the year 1602.

Jerom's *Channel, St.*, in *Geography*, an inlet in the ſtraits of Magellan, which branches off to the N.N.W. about 20 miles in length, forming a communication between the Straits and Indian ſound.

Jerom's *Point, St.*, a cape on the coaſt of Patagonia, in the ſtraits of Magellan, forming the W. point of entrance into St. Jerom's channel ; 11 miles E. of cape Quad.

JERONIMO de Taos, *St.*, a town of New Mexico, on the Brava ; 62 miles N. of Santa Fé.

JERONYMITES, or Hieronymites, a denomination given to divers orders, or congregations of religious ; otherwiſe called *Hermits of St. Jerom.*

The firſt, called *Hermits of St. Jerom* of Spain, owe their origin to the third order of St Francis, whereof the firſt Jeronymites were members. Gregory the eleventh confirmed this order under the name of St. Jerom, whom they had choſen for their patron, and their model ; and gave them the conſtitutions of the convent of St. Mary of the Sepulchre, with the rule of St. Auguſtine ; and for habit, a white tunic, with a ſcapulary, a little capuche, and a mantle, all of their natural colour, without dyeing, and of a mean price.

The Jeronymites are in poſſeſſion of the convent of St. Laurence, in the Eſcurial, where the kings of Spain are buried.

In Spain there is likewiſe an order of nuns of St. Jerom, founded by a lady towards the cloſe of the 15th century. Sixtus put them under the juriſdiction of the Jeronymites, and gave them the conſtitutions of the monaſtery of St. Martha of Cordova, which were afterwards changed by Leo X. for thoſe of the order of St. Jerom.

Hermits of St. Jerom, of the Obſervance, or *of Lombardy,* were founded by Lupus d'Olmedo in 1424, in the mountains of Cazalla, in the dioceſe of Seville.

The third order of Jeronymites was founded by Peter Gambacorti, about the year 1377; but the vows they made were only ſimple, till 1568, when Pius V. appointed them to be ſolemn. They have houſes in Tyrol, Italy, and Bavaria.

The fourth congregation of Jeronymites, are the *Hermits of St. Jerom of Fiezoli*, begun in 1360, when Charles de Montegraneli, of the family of the count of that name, retiring into ſolitude, firſt eſtabliſhed it at Verona. It was approved by Innocent VII. under the title and conſtitutions of St. Jerom. But Eugenius IV. changed it for that of St. Auguſtine. As the founder was of the third order of St. Francis, they preſerved that habit; but, in 1460, Pius, permitting ſuch as pleaſed to change it, occaſioned a diviſion among them. This order was finally ſuppreſſed by Clement XI. in 1668.

JEROPOTAMO, in *Geography*, a river of Candia, anciently "Lathæus," which runs into the Mediterranean, 8 miles N.N.W. of cape Metala.

JERSEY, an iſland in the Britiſh Channel, N. lat. 49° 25'. W. long. 2° 11', ſituated about four leagues from the coaſt of Normandy, and 25 from that of England. It is conſidered as belonging to Hampſhire, and comprizes an area of 12 miles in length by ſix in breadth; forming about 72 ſquare miles, Engliſh meaſure. The iſland is divided into 12 pariſhes (having only eight churches), ſubordinate to the ſee of Wincheſter, and contains the two towns of St. Helier's and St. Aubin's. The population of the iſle amounts to about 20,000, of which 3000 are able to bear arms, and are formed into two regiments. The ſhores abound with rocks and quickſands. On the northern ſide the cliffs are from 40 to 50 fathoms in height; but the ſouthern ſhore is nearly level with the ſea. A mountainous range runs through the centre, the ſides of which abound with orchards; from the produce large quantities of cyder are made annually. It is computed that 24,000 hogſheads have been made in one year. This propenſity of the inhabitants for cyder has occaſioned them to convert their arable lands into orchards; and hence they have been obliged to import corn from the Baltic, England, and, in times of peace, from France. Formerly they raiſed enough, not only for home conſumption, but for exportation. An abundance of cattle and ſheep are reared here; and native wool forms an important article for trade and manufacture. There were formerly five monaſtic foundations in the iſland. All the acceſſible parts of the coaſt are well fortified with batteries, watch towers, &c. The latter have embraſures for ſmall cannon, and loopholes for muſketry. St. Aubin's bay is guarded by two very ſtrong caſtles, or forts. Theſe, and the whole military government of the iſland, are under the controul of a governor, an officer nominated by the Engliſh miniſtry. The civil juriſdiction is veſted in a bailiff and 12 jurors, who are regulated by local laws chiefly derived from the ducal cuſtoms of Normandy. Jerſey, Guernſey, Sark, and Alderney, were formerly part of the duchy of Normandy; and, though now united to the Britiſh crown, ſtill preſerve many Norman cuſtoms and laws. The legiſlature of England cannot enforce any law here unleſs it has previouſly been ſanctioned by the bailiff and jurors. Some of the Jerſey merchants employ ſeveral veſſels in the Newfoundland trade. The French language is generally ſpoken here, and this is moſtly uſed both in the pulpit and at the bar. Elizabeth caſtle, the principal fort of the iſland, was begun by queen Elizabeth, and hence its name. King Charles I. enlarged it; and king Charles II. who was twice here, increaſed and completed it. The governor and garriſon now reſide here, and the whole occupies an iſland in St. Aubin's bay. Mount-Orgeuil caſtle was a place of ſtrength before Henry the Fifth's reign, and was a fortreſs of very conſiderable conſequence in the time of Edward III. This was alſo ſtrengthened by queen Elizabeth. It ſtands on an eminence which is aſcended by 200 ſteps. From the top may be ſeen the cathedral of Conſtance. This iſland is ſaid to have abounded with druidical temples and altars. Bindaxtro, who wrote ſome tracts concerning Jerſey, and died in 1691, ſtates, that there "were not leſs than 50 of theſe temples and altars in the iſland," of which the greater part were deſtroyed when Falle wrote his hiſtory. The Cromlechs are here called Pouquelays. In Camden's Britannia, vol. iii. p. 751, edit. 1789, is an extract of a letter from Mr. Morant to Dr. Stukeley, giving an account of ſeveral of theſe remains; and in Groſe's Antiquities is a particular deſcription, with two plates, of a very ſingular circular temple, which was found covered over with earth near the town of St. Helier. This was removed to Park Place, Berkſhire, by general Conway, who was governor of the iſland when it was found.

In January 1781, the French, under baron de Rullicourt, landed here, and took poſſeſſion of the garriſon, the governor, &c. Major Pierſon, the ſecond in command, attacked the French, and ſo deſperate was the conflict that both of the commanders were killed, but the invaders were compelled to ſurrender as priſoners of war. Falle's Account of Jerſey. Camden's Britannia. Groſe's Antiquities of England.

JERSEY, *New*, one of the United States of America, ſituated between 39° and 41° 24' N. lat. and between the meridian of Philadelphia and 1° E. long.; and bounded E. by Hudſon river and the ſea; S. by the ſea; W. by Delaware bay and river, which divides it from the ſtates of Delaware and Pennſylvania; N. by a line drawn from the mouth of Mahakkamak river, in lat. 41° 24' to a point on Hudſon river in lat. 41°. This province is 160 miles long and 52 broad, and contains about 8320 ſquare miles, or 5,324,800 acres. It is ſaid to have been firſt diſcovered by capt. Hudſon, who, in 1609, entered into the ſervice of the Dutch, by whom it was firſt ſettled, about the year 1614. Its original inhabitants were a tribe of Indians, who called themſelves Linnellinopes; by the French they were denominated Les Loups, and by the Engliſh, Delawares. This confederacy compriſed numerous ſubordinate clans, of which the principal were the Chihocki, who dwelt on the W. ſide of the river Delaware; the Wanami, who ranged from the Raritan in New Jerſey to the ſea-coaſt; the Munſeys, on the upper ſtreams of the Delaware, down to the Leheigh; the Wabingas, or river Indians, who reſided between the Delaware and Hudſon, and from the Kittatany to the Raritan; and the Mohickons or Mankattans, who occupied Staten iſland, York iſland, and part of Long iſland, from the highlands to the ocean. Theſe confederate tribes waged war for the greateſt part of a century with the Iroquois, or five nations, but were at laſt ſubdued, and reduced to the moſt humiliating terms, about the year 1682, when William Penn landed in Pennſylvania.

This province formed a part of a large tract of country called New Belgium, or New Netherland; and being ceded to the Engliſh, it was granted, in 1664, by Charles II. to his brother James, duke of York, who made it over to lord Berkeley and ſir George Carteret. After ſeveral diviſions and transfers, which were ſources of quarrels and confuſion, the proprietors, in the year 1702, ſurrendered their charter to the crown, and the country was united to the government of New York. In 1706 Jerſey was made a ſeparate government. New Jerſey is now divided into 13 counties, which are ſubdivided into 94 precincts or townſhips, as in the annexed table.

TABLE.

TABLE.

	Counties.	Principal Towns.	Length.	Breadth.	Total Number of Inhabitants.	Number of Slaves.
These ſeven counties lie from S. to N. on Delaware river. Cape May and Glouceſter extend acroſs to the ſea.	Cape May	None	30	9	571	141
	Cumberland	Bridgetown	50	20	8,248	120
	Salem	Salem			10,437	172
	Glouceſter	Woodbury and Glouceſter	30	22	13,360	191
	Burlington	Burlington and Bordentown	60	30	18,095	227
	Hunterdon	Trenton	37	12	20,253	1,301
	Suſſex	Newtown			19,500	439
These four counties lie from N. to S. on the eaſtern ſide of the ſtate.	Bergen	Hackinſak			12,601	2,301
	Eſſex	Newark and Elizabethtown			17,785	1,171
	Middleſex	Amboy and part of Brunſwic			15,956	1,318
	Monmouth	Freehold	80	30	16,918	1,596
	Somerſet	Boundbrook and part of Brunſwic			12,296	1,810
	Morris	Morriſtown	25	20	16,216	636
Total,	Thirteen.				184,139	11,423

The militia of this ſtate in 1793 amounted to 19,077, between the ages of 18 and 45 years; and the whole number of men capable of bearing arms amounted to between 30 and 40,000. The government of this ſtate is veſted in a governor, choſen annually by the council and aſſembly jointly, a legiſlative council compoſed of one member from each county, choſen annually by the people and general aſſembly, compoſed of three members choſen as above. The governor ſits in and preſides over the legiſlative council; his privy or executive council conſiſts of any three members of the legiſlative council; and the governor and any ſeven members of the council are a court of appeal in the laſt reſort as to points of law in civil caſes, and poſſeſs a power of pardoning criminals in all caſes whatever. The council may originate any bills, excepting preparing and altering any money bill, which is the ſole prerogative of the aſſembly. Every bill is read three times in each houſe. None of the judges of the ſupreme court, or other courts, ſheriffs, or any perſon poſſeſſing any poſt of profit under the governor, juſtices of peace excepted, is entitled to a ſeat in the aſſembly. The courts of juſtice in this ſtate are juſtices' courts, courts of quarter-ſeſſions of the peace, courts of common-pleas, ſupreme courts, orphans' courts, courts of chancery, and high court of errors and appeals. The Engliſh laws, as far as they are not repugnant to revolution principles, are adopted by the conſtitution; but in the diſtribution of property, where there is no will, each ſon has two ſhares, and each daughter has one ſhare. In this ſtate there are about 50 Preſbyterian congregations, ſubject to the care of three preſbyteries: *viz.* thoſe of New York, New Brunſwick, and Philadelphia. Beſides theſe there are upwards of 40 congregations of Friends, 30 of the Baptiſts, 25 of Epiſcopalians, 28 of Dutch Reformers, 20 of the Methodiſts, and a ſettlement of Moravians. All are allowed by the conſtitution to worſhip God according to the dictates of their own conſciences; and are not compelled to attend or ſupport any worſhip contrary to their own faith and judgment. All Proteſtant inhabitants, of peaceable behaviour, are eligible to the civil offices of the ſtate. For the colleges in this ſtate, ſee COLLEGE. The capital town of this province is Trenton; beſides which there are Burlington, Perth Amboy, Brunſwick, Elizabethtown, Newark, Swedeſborough, Salem, &c. which ſee reſpectively. The rivers in this ſtate, though not large, are numerous; the principal are the Paſſaik, Raritan, Hackinſack, Delaware, Cohanſey creek, Mulicus, Alloway creek, Ancocus creek, Paulin's Kiln, Racoon creek, Salem creek, and ſome others. This ſtate is remarkable for mill-ſeats, 1100 of which are already improved; 500 with flour-mills, and the reſt with ſaw-mills, fulling-mills, forges, furnaces, ſlitting and rolling-mills, paper, powder, and oil-mills. The greateſt part of the ſoil of New Jerſey is ſandy; ſome of it barren and unfit for cultivation; but that near the ſea-coaſt is ſaid to be many feet deep, in ſome places 50, without rocks or ſtones, when you come to ſalt-marſh, and has much the appearance of being artificial; the good land in the ſouthern counties lies principally on the banks of rivers and creeks; the ſoil on theſe banks being generally a ſtiff clay, which, in its natural ſtate, produces various ſpecies of oak, hickory, poplar, cheſnut, aſh, &c. The barren parts produce little elſe but ſhrub-oaks and yellow pines. Theſe ſandy lands yield an immenſe quantity of bog-iron ore, which is wrought very advantageouſly in the iron-works in theſe counties. The ſalt meadows along the lower part of the Delaware river and bay afford plentiful paſture for cattle in ſummer, and hay in winter; but the ſwarms of muſkitoes in the months of June, July, and Auguſt, are very troubleſome both to man and beaſt. The inhabitants along the ſea-coaſt ſubſiſt principally by feeding cattle on the ſalt-meadows, and by various kinds of fiſh, abundantly ſupplied by the ſea, rivers, and creeks. They raiſe Indian corn, rye, potatoes, &c. but not for exportation. Their ſwamps afford lumber, which is conveyed with eaſe to a good market. The ſugar maple-tree is common in Suſſex county, upon the Delaware. In the hilly and mountainous parts of the ſtate, which are not too rocky for cultivation, the ſoil is of a ſtronger kind, covered, in a ſtate of nature, with ſtately oaks, hickories, cheſnuts, &c. and when cultivated, producing wheat, rye, Indian corn, buck wheat, oats, barley, flax, and fruits of all kinds common to the climate. The land in this hilly country is good for grazing, and farmers feed great numbers of cattle for the markets of New York and Philadelphia ; and many of them keep large dairies, as there are large tracts of fine meadows between the hills. The orchards in many parts of the ſtate are ſaid to be equal to any in the United States, and the cider is reckoned the beſt in the world. Thoſe parts of New Jerſey that are contiguous to New York and Philadelphia, ſupply their markets with many kinds of vegetables, as apples, pears, peaches, plums, ſtrawberries, cherries, and other fruits ; cider in large quantities, and of the beſt quality, butter, cheeſe, beef, pork, mutton, and other meats.

The trade of New Jerſey is carried on almoſt ſolely with New York and Philadelphia ; though it has ſome good ports of its own. The articles exported are chiefly wheat, flour, horſes, live cattle, hams which are much commended, lumber, flax-ſeed, leather, iron in great quantities, and formerly copper-ore. The imports conſiſt chiefly of Weſt India goods. The manufactures of this ſtate have been inconſiderable, though they are now improving ; and they conſiſt principally of the articles of iron, nails, and leather. Tanneries are numerous and valuable ; paper-mills and nail manufactories are wrought with profit in ſeveral parts of the ſtate. Wheat is alſo manufactured into flour, and Indian corn into meal ; and theſe are profitable articles. But iron is the moſt ample ſource of wealth to the ſtate. Iron-works are erected in Glouceſter, Burlington, Suſſex, Morris, and other counties. In the whole ſtate it is ſuppoſed there are yearly made about 1200 tons of bar-iron, 1200 ditto of pigs, and 80 ditto of nail-rods, excluſive of hollow ware, and various other caſtings, to a great amount. This ſtate affords vaſt quantities of iron and copper-ore. The iron-ore is of two kinds : one capable of being manufactured into malleable iron, and found in mountains and low barrens ; and the other called bog-ore, found in rich bottoms, and yielding iron of a hard, brittle quality, which is commonly manufactured into hollow ware, and uſed ſometimes inſtead of ſtone in building. Many copper-mines have been diſcovered in different parts of the ſtate. Mines have alſo been diſcovered of lead and plaſter of Paris, and the ſtate is ſaid alſo to contain coal. In the town of Newark and its vicinity, there are immenſe quarries of valuable ſtone, much uſed in building.

The inhabitants of this ſtate are a collection of Low Dutch, Germans, Engliſh, Scotch, Iriſh, and New Englanders, or their deſcendants ; and of courſe differ much in their manners and character ; and this difference is in ſome meaſure increaſed by different forms of religion, and alſo by intercourſe with the inhabitants of other ſtates. The people in Weſt Jerſey trade to Philadelphia, and incline to the faſhions and manners of that city : whilſt thoſe of Eaſt Jerſey trade to New York, and acquire a reſemblance to the inhabitants of this capital. But whatever differences may ſubſiſt among them in conſequence of theſe circumſtances and of their different occupations and profeſſions, the people of New Jerſey are generally induſtrious, frugal, and hoſpitable. The women are allowed to be diſcreet, amiable, genteel, and alſo handſome, in due proportion to their whole number. Morſe's American Univerſal Geography, vol. i. 1805.

JERSEY, *New*, in *Botany*. See CEANOTHUS.

JERSEY, among *Woolcombers*, denotes the fineſt wool, taken from the reſt by dreſſing it with a Jerſey comb.

JERTH, in the *Materia Medica*, a name given to a certain kind of moſs, according to Schæffer, growing very plentifully in Lapland, and other cold countries. The root of this is the part uſed in medicine, and the method of giving it is in decoction. They boil a large quantity of it in the whey made of rein-deer's milk, and give the patient large draughts of it warm every hour or two ; by that means keeping up a good perſpiration, which they increaſe or diminiſh according to the nature of the caſe. The principal diſeaſes to which they are ſubject are pleuriſies and the ſmall-pox ; and it is wonderful to find how well they get through theſe two dangerous complaints by this regimen alone. Upon the whole, the virtue of ſo much warm and diluting liquor ſeems the principal thing to be depended upon by them ; for if they cannot readily get the jerth root, they ſcruple not to ſupply its place with the ſtalks of angelica, and the medicine ſeems to ſucceed as well this way as the other, both in the ſmall-pox and other caſes.

JERVAS, CHARLES, in *Biography*, a portrait painter, whoſe name is more indebted for its reputation to his pupil Pope having offered falſe incenſe to him in a copy of verſes, than to his own merits. He was a pupil of Kneller, and acquired a fortune by marriage. He died in 1739.

JERVIS's CANAL, in *Geography*, an inlet or arm of the Pacific ocean, on the W. coaſt of North America, in the gulf of Georgia, examined and ſo named by captain Vancouver in the year 1792. N. lat. 49° 40′. E. long. of the entrance 236° 22′.

JERUSALEM, derived from ראה, *to ſee*, and שלם, *peace*, *q. ſ.* the viſion or inheritance of peace, a celebrated city of Aſia, the capital of Paleſtine or Judea, is ſuppoſed, though perhaps without ſufficient authority, to have been built on the ſcite of Melchizedek's *Salem*, and hence called "Salem" and "Solyma." It was ſituated in the midſt of a rocky and barren country, on the frontiers of the two tribes of Benjamin and Judah, ſo that it was ſometimes conſidered as a part of the one, and ſometimes of the other ; but by the diſtribution of Joſhua (ch. xviii. 28.) it belonged to Benjamin, whereas it pertained to Judah by right of conqueſt, this tribe having twice ſubdued it, firſt under the Judges, and afterwards under David. After the building of the Temple, it was conſidered as the metropolis of the nation, belonging to all Iſrael in common, and not properly either to Benjamin or Judah. Jeruſalem was founded upon hills, and ſurrounded by mountains : the two largeſt hills were Zion and Acra, upon which the firſt buildings were erected ; and on mount Moriah, Solomon, at a ſubſequent period, built the temple. Mount Zion bounded to the ſouth the whole circumference, and reached from eaſt to weſt : the weſtern ſide was the moſt elevated, and circumſcribed by the valley of Hinnom, or Ge-hinnom, as the eaſtern was by that of Jehoſaphat, which is ſuppoſed to have joined the other towards the ſouth. Here were the fountains of Gihon and Siloam, the brook Kidron, and the waters of Ethan, which Pilate, at a much later period, conveyed through aqueducts into the city. To the north of Zion was another valley, called by Joſephus "the valley of Cheeſemongers," probably the ſame as that diſtinguiſhed in Zephaniah (ch. i. 11.), by the epithet "Machtheſh," which the LXX have tranſlated την κατακεκομενην, *q. d.* that which was cut in or made hollow. Acra, with the ſaid valley to the ſouth, ſtood to the north of Zion, having its declivity on every ſide equal. Upon Zion ſtood the High city, called, in the time of Joſephus, the High Market-place ; the Lower city ſtood upon Acra, but before that period bore other names. The ancient city Jebus, which David took from the Jebuſites, was not large: it ſtood on a mountain S. of the temple. When David ſubjected and expelled the Jebuſites, he ſeized their fortreſs and city, B. C. 1048, and called the latter after his own name, "the City of David." Between the mountains, Zion and Acra, on which the Upper and Lower cities were erected, there was a valley, which ſeparated the two cities, but which was filled up by David and Solomon, ſo that the two cities were joined. 1 Kings, ix. 15. 24. xi. 27.

Jeruſalem, in its moſt flouriſhing ſtate, was divided into four parts, each incloſed within its own walls; namely, the old city of Jebus, which ſtood on mount Zion, where the prophets dwelt, and where David built a magnificent caſtle and palace, which became the reſidence both of himſelf and his ſucceſſors; on which account it was emphatically ſtyled "the City of David." The "Lower City," called alſo the "Daughter of Zion," being built after it, on which ſtood the two magnificent palaces which Solomon built for himſelf and his queen; that of the Maccabean princes; and the ſtately amphitheatre raiſed by Herod, capable of containing 80,000 ſpectators; the ſtrong citadel by Antiochus, to command the temple, afterwards razed by Simon the Maccabee, who recovered the city from the Syrians; and laſtly, a ſecond citadel, built by Herod, upon a high and craggy rock, called by him Antonia. The "New City," moſtly inhabited by tradeſmen, artificers, and merchants: and "Mount Moriah," on which appeared the celebrated temple of Solomon, deſcribed in the 6th and 7th chapters of the 2d book of Kings, deſtroyed by Nebuchadnezzar, re-built by the Jews on their return from Babylon, and afterwards renewed, augmented, adorned, and enriched by Herod. See TEMPLE.

Little is ſaid concerning the walls of Jeruſalem. We read, however, that after David had taken "the ſtrong hold of Zion," he called it the city of David, and dwelt in that fort, having built round about Milla and inward. Solomon, from whoſe time the appellation of Jeruſalem ſeems to have ſuperſeded that of Jebus, and his ſucceſſors, took care to improve the walls. Hezekiah built up that part which was demoliſhed by Joaſh, king of Iſrael, and added another without. After the reign of Manaſſeh, there is mentioned a new city, called the "Second," incloſed with walls by that prince. (2 Chron. xxiv. 22. xxxiii. 14. 2 Kings, xxii. 24.) The Maccabees conſiderably enlarged it on the north, by incloſing a third hill, as part of Jeruſalem. Joſephus ſpeaks of a 4th hill, called "Bezetha," which Agrippa joined to the city: this new city lay north of the temple, along the brook Kidron, or Cedron. In ancient Jeruſalem there were ten gates, five from W. to E. by S., and five others by N. Nehemiah mentions alſo four towers. It is not eaſy to aſcertain the extent of this city in its different changes. Its moſt ancient ſtate of perfection was in the reign of Solomon, in whoſe time this city appeared in its greateſt ſplendour. In this ſtate of uncertainty about its limits, we may venture to ſtate its circumference at firſt to have been ſeven or eight ſtadia, or a Roman mile. In Solomon's time it was, without doubt, twice or three times as large. After the captivity, when it was rebuilt, it occupied much the ſame ſpace as before, as we may infer from Nehemiah's deſcription of the ruins, and its condition after it was repaired. According to Joſephus, the whole circumference of Jeruſalem was 33 ſtadia, or about four miles 125 paces. But Hecatæus, who deſcribes it as it was in his time, under Ptolemy Lagus, gives it no leſs than 50 ſtadia, probably including the out-parts, which did not properly belong to it; and Hecatæus adds, that there were in Jeruſalem 120,000 inhabitants; which ſtatement is not improbable. The circumference of the ancient city, according to Euſebius, (Præp. Evang. l. ix. c. 36.) was 27 ſtadia, or 2550 toiſes. A plan, ſays Gibbon, taken on the ſpot, aſſigns no more than 1980 for the modern town. For the different opinions reſpecting its meaſurement, we refer to Villalpendus and Reland.

From the period of the reign of Solomon, when the temple was dedicated, B. C. 1004, to the deſtruction of the city, it underwent many revolutions and viciſſitudes; ſome of the principal of which we ſhall recite. In the fourth year of the reign of Rehoboam, ſon of Solomon, B. C. 971, the city was beſieged and taken by Shiſhak, or Seſac, king of Egypt, who carried away the treaſures of the temple, as well as of the royal palace. In about a century after, B. C. 826, Jehoaſh, king of Iſrael, advanced to Jeruſalem, having taken Amaziah, king of Judah, and plundered the temple and royal palace, and demoliſhed the city-walls. (2 Kings, xiv. 13. 2 Chron. xxv. 23.) In the year B. C. 608, Pharaoh Necho, king of Egypt, having ſlain Joſiah, king of Judah, captured his ſon Jehoahaz, who had been raiſed to the throne in the room of his father, impoſed upon Jehoiakim, appointed by Necho as his ſucceſſor, a tax of 100 talents of ſilver, and 10 of gold, pillaged the city and temple, and thus made Jeruſalem tributary to Egypt. In the 4th year of Jehoiakim, B. C. 606, Nebuchadnezzar beſieged Jeruſalem, which now fell under the dominion of the Chaldeans. When Jehoiakim attempted three years after to throw off the yoke of ſervitude, the king of Chaldea ſent a powerful army againſt him, which deſolated Judea, took Jehoiakim priſoner, and put him to death, carrying away a number of his ſubjects as ſlaves to Babylon. His ſon Jehoiachin, who ſucceeded him, reigned at Jeruſalem only three months. Nebuchadnezzar laid ſiege to Jeruſalem, and compelling Jehoiachin to ſurrender, carried him, his family, and many of the inhabitants captive to Babylon. Upon this occaſion Nebuchadnezzar ſeized on all the riches of the temple and royal palace, and deſtroyed thoſe golden veſſels which Solomon had appropriated to the ſervice of God. In the room of Jehoiachin, Zedekiah was raiſed to the throne; but when this prince rebelled againſt the king of Chaldea, he ſent an army againſt Jeruſalem, which, in the 11th year of Zedekiah, B. C. 588, took the city, and, after putting out his eyes, carried him away as a captive. Nebuchadnezzar, being then at Kiblah, a city of Syria, ſent his general Nebuzaradan utterly to deſtroy Jeruſalem. The walls of the city were razed, the royal palace and temple were demoliſhed, their riches and ornaments tranſported to Babylon, and the people were carried away into ſlavery. Cyrus, king of Perſia, having conquered Babylon in the year B. C. 538, ſet the Hebrews at liberty, and in the year B. C. 536, iſſued an edict for their return to their own land, for a reſtoration of the ſacred veſſels carried away by Nebuchadnezzar, and for the rebuilding of their temple, after a captivity of 70 years, if we reckon from the fourth year of Jehoiakim, B.C. 606. (See CAPTIVITY.) The Jews, obſtructed by the Samaritans, and other hindrances, were 20 years employed in conſtructing this new edifice, ſo that it was finiſhed in the year B.C. 515. But the walls and gates were not rebuilt till after the return of Nehemiah, in the ſpace of 12 years and four months, the 82d year after the decree of Cyrus, or B.C. 454. After the time of Nehemiah, Jeruſalem enjoyed peace till the year B.C. 332, when Alexander, having taken Tyre, demanded aſſiſtance of the Jews; and being refuſed by the chief prieſt, who pleaded as an oath made to Darius not to take part with his enemies, the conqueror was incenſed, and repairing to Jeruſalem, determined to be revenged on the city and its inhabitants;

but being met by a multitude of people dreſſed in white, the prieſts arrayed in their robes, and the high prieſt in a garment of purple and gold, having on his head a tiara, with a plate of gold above it, upon which was inſcribed the name of the Lord, his paſſion ſubſided; and approaching the high prieſt, he offered his adoration to God, and paid his reſpects to Jaddua, and ſaluted all the Hebrews. After the death of Alexander, Jeruſalem remained ſubject to the kings of Egypt; Ptolemy Soter, the ſon of Lagus, having taken it by ſtratagem in the year B.C. 320, and having carried into captivity about 100,000 perſons. In the year B.C. 170, Antiochus Epiphanes beſieged Jeruſalem, pillaged the city and temple, put to death 80,000 of the inhabitants, made 40,000 of them ſlaves, and ſold 40,000 more. Three years after, the ſacrifices were interrupted in the temple, the ſtatue of Jupiter Olympius was placed on the altar, and the abomination of deſolation was ſeen in the houſe of God. After three years, Judas Maccabæus went up to Jeruſalem, purified the temple, and reſtored the ſacrifices. In the following year B.C. 164, Antiochus Eupator laid ſiege to Jeruſalem, but a peace being concluded, he was received into the city by Judas Maccabæus; however, he violated his oath, and cauſed the wall between the temple and the citadel, which defended the former from the attacks of the Syrians, to be utterly demoliſhed. In the year B.C. 143, Simon Maccabæus fortified Jeruſalem, by erecting high and ſtrong towers on the walls; and he took and deſtroyed the citadel, which was then in the hands of the Syro-Macedonians, and which had kept Jeruſalem 26 years dependent on the king of Syria. John Hyrcanus ſucceeded his father Simon in the year B.C. 135, and ſoon after Antiochus Sidetes, king of Syria, declared war againſt him, beſieged Jeruſalem, deſtroyed the walls of the city, and then retired, in the year B. C. 63. Pompey, having ſubdued Syria, laid ſiege to Jeruſalem, and made Judea tributary to the Roman empire. But though he and ſome of his officers entered into the moſt holy places of the temples, they took nothing away. During the reign of Herod the Great, Jeruſalem was much enlarged and embelliſhed. He conſtructed a ſuperb royal palace, a theatre, and an amphitheatre, for the purpoſe of celebrating various games in honour of Auguſtus. He alſo projected the deſign of rebuilding the temple, or at leaſt of enlarging that which had been erected after the return of the Jews from the Babyloniſh captivity, and having begun the work in the 18th year of his reign, he completed it in eight years. (See TEMPLE.) Under the reign of the emperor Tiberius, Jeruſalem was made ſignal in all future ages by the death and reſurrection of our Lord and Saviour JESUS CHRIST, who was unjuſtly accuſed and condemned, and crucified on mount Calvary. (See CALVARY.) It is needleſs to recite any of thoſe trivial circumſtances that pertain to this city, between the event now mentioned, and its deſtruction by Titus. The country of Judea, and Jeruſalem in particular, had been reduced to a wretched ſtate by contending factions, and by reſiſtance to the oppreſſion of Roman governors. The diſſatisfaction that prevailed at length terminated in the deſolation and carnage of war. This was commenced, according to Joſephus, (Ant. l. 20. xi. 1.) in the ſecond year of the government of Geſſius Florus, who ſucceeded Albinus, the ſucceſſor of Porcius Feſtus, mentioned in the Acts of the Apoſtles, in the month of May, in the 12th year of the emperor Nero, and the 17th year of Agrippa, mentioned Acts, xxv. and xxvi, that is, in the month of May, A.D. 66. The emperor Nero entruſted the conduct of it, on the part of the Romans, to his general Veſpaſian, who, accompanied by his ſon Titus, and a powerful army, arrived in Syria, A.D. 67. Veſpaſian, ſoon after ſucceeding to the empire, committed the proſecution of the war againſt the Jews to his ſon Titus, who joined the army, amidſt the acclamations of the populace, A.D. 70. Jeruſalem was in the moſt woeful condition when Titus undertook the ſiege of it, April 14th, A.D. 70. Having made himſelf maſter of the firſt wall, May 4th, he cauſed a great part of it towards the north to be demoliſhed. His favourable offer of terms to the beſieged was rejected; and five days after he took the ſecond wall, and after a repulſe, he gained poſſeſſion of it again in four days, and demoliſhed the part that remained of it in the northern quarter. Failing to batter down the third wall, Titus renewed his propoſal to the inhabitants, and for this purpoſe employed Flavius Joſephus, who had been taken priſoner, and who, after having received his liberty, had attached himſelf to the Roman camp. The majority of the people were inclined to accept the eaſy conditions that were propoſed; but they were reſiſted by ſome zealots, and Joſephus was treated with every mark of indignity and reproach. Titus was enraged, and his clemency was changed into unjuſtifiable ſeverity. He ordered the hands of thoſe who had ſought ſhelter in his camp to be cut off, and in this mutilated ſtate ſent them back to the city; and others were crucified in the ſight of their countrymen. Within the city famine began to make dreadful havoc, ſo that parents were obliged to ſatisfy their hunger by devouring the fleſh of their own children; an action which appeared ſo unnatural to the Roman general, that he ſwore he would bury the remembrance of it under the ruins of Jeruſalem. Titus accelerated by all the means in his power the operations of the ſiege, and at length, applying his battering rams to the third wall, or the wall encloſing the fortreſs, he made himſelf maſter of the tower of Antonia. The Romans wiſhed to get poſſeſſion of the temple without deſtroying it; but a ſoldier threw a burning torch amidſt a quantity of combuſtible materials in the northern part of it, and thus ſet it on fire. The temple was burnt on the 18th day of the month of Auguſt, A.D. 70, the ſame day and month, on which it had been burnt by the king of Babylon. The Romans with concern, and the inhabitants with the moſt poignant ſorrow, perceived this building reduced to aſhes; and very ſoon, *viz.* on the 8th day of September, A D. 70, and in the 2d year of the reign of Veſpaſian, the city of Jeruſalem fell into the hands of Titus. It was then given up to be plundered by the ſoldiers, and moſt of its inhabitants were put to the ſword. In conformity to the orders of Titus, the city was deſtroyed to its foundations, and even the ruins of the temple were demoliſhed. A plough-ſhare, it is ſaid, was drawn over the conſecrated ground, as a ſign of perpetual interdiction. According to Joſephus, whoſe account of the Jewiſh war, and of the ſiege and capture of Jeruſalem, is in almoſt every one's hands, the number of priſoners taken during the whole war was 97,000, and that the number of thoſe who periſhed in the ſiege amounted to 1,100,000; but Tacitus, who lived in the firſt century, in the time of Veſpaſian and Titus, heard it reported, that the number of the beſieged, including thoſe of every age and ſex, was only 600,000. Notwithſtanding the deſtruction of their city, many Jews remained in the town or in its vicinity, and erected new buildings for their accommodation; but they paid tribute to the Romans, and became ſubject to their laws. It is a circumſtance that deſerves to be recorded, that, as we have good reaſon to believe, no Chriſtians were involved in the miſeries of the laſt ſiege of Jeruſalem. They are ſuppoſed to have left it before the ſiege began. Some went to Pella, as Euſebius mentions (H. E. l. iii. c. 5), a city on the other ſide of the Jordan. Others might go elſewhere, into Aſia, or other remote countries, where they could get a ſettlement. St. John, it is ſuppoſed, left Judea, and went to Epheſus in the year 66, or about that time, juſt before the war commenced. Some Jews of Jeruſalem, and other parts of Judea, might go with him, or follow him afterwards. And, under his direction and aſſiſtance, they might procure a comfortable ſettlement in places not far from him. After the termination of the war in Judea, it is ſuppoſed that the Chriſtian believers, who had retired into the country beyond Jordan, returned to Jeruſalem, and formed a church there.

In proceſs of time, the Jews incenſed Adrian by their turbulent diſpoſition, and he reſolved to level the city of Jeruſalem with the ground, that is, thoſe buildings which the Jews had erected, to deſtroy three towers that were left by Titus for the convenience of the Roman garriſon, and to ſow ſalt in the ground on which the city had ſtood. Thus did Adrian, whatever were his motives, literally fulfil the prediction of our Saviour, that neither in the city nor the temple ſhould one ſtone be left upon another. This final deſtruction took place 47 years after that of Titus. The further attempts of Adrian are recited under the article ÆLIA *Capitolina*. For an account of the honours paid to Jeruſalem and its vicinity by the mother of Conſtantine the Great, ſee CALVARY, *Invention of the* CROSS, and HELENA. For Julian's attempt to rebuild the temple at Jeruſalem, ſee JULIAN and TEMPLE. The emperor Juſtinian erected a magnificent church to the Virgin Mary at Jeruſalem. For the foundation of this church a level was formed, by raiſing part of a deep valley to the height of the mountain. The ſtones of a neighbouring quarry were hewn into regular forms; each block was fixed on a peculiar carriage drawn by 40 of the ſtrongeſt oxen, and the roads were widened for the paſſage of ſuch enormous weights. Lebanon furniſhed her loftieſt cedars for the timbers of the church; and the ſeaſonable diſcovery of a vein of red marble ſupplied its beautiful columns, two of which, the ſupporters of the exterior portico, were eſteemed the largeſt in the world. To complete the celebrity of this church, the holy veſſels of the Jewiſh temple, recovered by Beliſarius after their long peregrination, ſays Gibbon, were depoſited in it.

In the year 614, the Perſians, under the command of Choſroes, took Jeruſalem by aſſault. The ſepulchre of Chriſt, and the ſtately churches of Helena and Conſtantine, were conſumed, or at leaſt damaged by the flames; the devout offerings of 300 years were rifled in one ſacrilegious day; the patriarch Zachariah, and the "true croſs" were tranſported into Perſia; and the maſſacre of 90,000 Chriſtians is imputed to the Jews and Arabs, who ſwelled the diſorder of the Perſian march. However, in 628, Jeruſalem and the holy croſs were reſtored to Heraclius, who baniſhed from the city all the Jews, and prohibiting their coming within three miles of it. After the battle of Yermuk in 626, and a ſiege of four months, Jeruſalem ſurrendered to the Saracens, under the command of the caliph Omar, and it remained for ſeveral centuries under the government of the caliphs, who were Mahometans, and of courſe the prevailing religion was Mahometan. The Turks, after having reduced Damaſcus by fire and ſword, took poſſeſſion of Jeruſalem A.D. 1076; and under the government of theſe maſters, the condition of the Chriſtians was very deplorable; the pilgrims, who were numerous from all parts of the world, were grievouſly inſulted and oppreſſed by the Turkmans; the pathetic tale of their ſufferings excited the millions of the weſt to march under the ſtandard of the croſs to the relief of the Holy Land. "A nerve," ſays Gibbon, "was touched of exquiſite feeling; and the ſenſation vibrated to the heart of Europe." The Turks were conſtrained to ſurrender Jeruſalem to the caliph of Egypt; but after a ſhort poſſeſſion he was obliged to deliver it to the Cruſaders. See CROISADE.

Jeruſalem, long ſo famed in hiſtory for its ſanctity and its opulence, is now reduced to a poor, thinly inhabited town, of at moſt three miles in circuit. It is called by the Turks "Cudſembaric" and "Coudſheriff." The Orientals, however, never call it by any other name than "Elkods," the Holy: ſometimes adding the epithet "el ſherif," the noble. The ground between Rome and Jeruſalem is rugged, mountainous, and barren. When its ſituation is conſidered, deſtitute of water, and ſurrounded by dry channels of torrents and ſteep heights, we may well be aſtoniſhed at its ancient greatneſs. It is ſeated on an eminence, but ſurrounded by others of greater height; and its walls, which remain tolerably perfect, and conſtructed of a reddiſh ſtone, form the chief object in the approach. The beſt view of Jeruſalem is from the mount of Olives, on the eaſt of the city. In front is the chief moſque, which, according to the tradition of the Mahometans, contains the body of Moſes; from the ſame mount may be diſcovered, on a clear day, the "Dead Sea," nearly S.E., reflecting a whitiſh gleam; the intervening region appearing very rocky. The "tombs of the kings," as they are called, are worthy of notice, being of Grecian ſculpture on a hard rock. There are ſeveral ornaments on the ſarcophagi of foliage and flowers, and each apartment is ſecured with a maſſive pannelled door of ſtone. Theſe tombs, which have been frequently ravaged in ſearch of treaſure, are ſuppoſed to have been conſtructed in the time of Herod and his ſucceſſors, kings of Judea. The inhabitants are partly Chriſtians and partly Mahometans, and they are actuated by a ſpirit of diſcord and hatred towards one another. From the reſpect which they profeſs for the ſacred places contained in this city, one would be apt to imagine that they were a very devout people; but Volney repreſents them as well deſerving the reputation of the vileſt people in Syria, not excepting even thoſe of Damaſcus. He ſuppoſes their number to amount to 12 or 14,000: Browne ſtates the preſent population of Jeruſalem at from 18 to 20,000. The Chriſtian women, who abound in Jeruſalem, wear white veils, as a diſtinction from the Mahometan, who wear other colours. Arabic is the general language, except among the Armenians and Greeks. Jeruſalem has had from time to time governors of its own, with the title of Pachas: but it is now governed by an aga, motſallam, or deputy governor, appointed by the pacha of Damaſcus, who is allowed ſo few troops, that all Paleſtine may be regarded as in the power of the Arabs. The motſallam, availing himſelf of the diſpoſition to make pilgrimages to Jeruſalem and its vicinity, which has prevailed for many ages, and which ſtill continues, farms his government, and receives the revenues ariſing from the Miri, the cuſtoms, and eſpecially from the follies of the Chriſtian inhabitants. In order duly to appreciate the value of this laſt article, it muſt be underſtood, that the different communions of Schiſmatic and Catholic Greeks, Armenians, Copts, Abyſſinians, and Franks, mutually envying each other the poſſeſſion of the holy places, are continually endeavouring to outbid one another in the price they offer for them to the Turkiſh governors. They are conſtantly endeavouring to obtain ſome privilege for themſelves, or to take it from their rivals; and each ſect is perpetually informing againſt the other for irregularities. Hence proceed thoſe hatreds, and that eternal jangling which prevail between the different convents, and the adherents of each communion. Every diſpute yields profit to the Turks; and alſo perquiſites for the motſallam, which annually amount to upwards of 100,000 piaſtres.

Every pilgrim pays him an entrance fee of ten piaſtres, and another for an eſcort for the journey to the Jordan, beſides other ſums as fines for miſbehaviour during the ſtay of the pilgrims, and duties on the exportation of certain ſingular commodities from Jeruſalem, ſuch as beads, relics, ſanctuaries, croſſes, paſſions, agnus deis, ſcapularies, &c. of which near 300 cheſts are ſent off annually. The fabrication of theſe utenſils of piety procures ſubſiſtence for the greateſt part of the Chriſtian and Mahometan families of Jeruſalem and its neighbourhood; men, women, and children being employed in carving and turning wood and coral, and embroidering in ſilk, with pearls, and gold and ſilver thread. The convent of the Holy Land, alone, lays out annually to the amount of 50,000 piaſtres in theſe wares, and thoſe of the Greeks, Armenians, and Copts, taken together, pay a larger ſum. Theſe commodities, exported to Turkey, Italy, Portugal, and eſpecially to Spain, produce a return of conſiderable ſums, either in the form of alms or payments. To this the convents join another article not leſs lucrative, *viz.* "the viſits of the pilgrims." It is well known that at all times the devout curioſity of viſiting the "holy places" has occaſioned Chriſtians of every country to reſort to Jeruſalem. It was formerly taught by the miniſters of religion as indiſpenſibly neceſſary to ſalvation, and this pious zeal pervading all Europe, gave riſe to the cruſades. (See CROISADES.) Since their unfortunate iſſue, the zeal of Europeans has cooled, the number of pilgrims has diminiſhed, and they are now reduced to a few Italian, Spaniſh, and German monks; but this is not the caſe with the Orientals, their prieſts and monks, deriving advantage from this fervour, do not ceaſe to promote it. The Greeks, eſpecially, declare that "the pilgrimage enſures plenary indulgence, not only for the paſt, but even for the future; and that it abſolves not only from murder, inceſt and pederaſty; but even from the neglect of faſting, and the non-obſervance of feſtivals, which are far more heinous offences." Accordingly, every year a crowd of pilgrims of both ſexes, and of all ages, ſet out from the Morea, the Archipelago, Conſtantinople, Anatolia, Armenia, Egypt, and Syria, the number of whom, in 1784, amounted to 2000. This zeal, however, is found to be very expenſive: ſince the moſt moderate pilgrimage never coſts leſs than 166*l.* and ſome of them, by means of offerings, amount to 2500*l.* Yafa is the port where the pilgrims diſembark; they arrive in November, and repair without delay to Jeruſalem, where they remain, in inconvenient but very expenſive lodgings, till after the feſtival of Eaſter. The pilgrims muſt alſo be at great charge in paying for maſſes, ſervices, and exorciſms, and alſo in the purchaſe of crucifixes, beads, &c. On Palm Sunday they go to purify themſelves in the Jordan, which is an expenſive expedition. One year with another, it produces to the governor 15,000 Turkiſh ſequins, or 4687*l.* When Eaſter is paſt, each perſon returns to his own country, proud of being able to rival the Mahometan in the title of pilgrim, and bearing imprinted on their hands, wriſts, or arms, figures of the croſs or ſpear, with the cypher of Jeſus and Mary. The difference between theſe two claſſes of pilgrims is, that thoſe of Mecca are called "Hadjes," and thoſe of Jeruſalem "Mokodſi," a name formed from that of the city, "El-Kods." The number of pilgrims who reſide at Jeruſalem for five or ſix months, leave behind them a ſum not leſs than 62,500*l.* (See PILGRIMAGE.) Theſe pilgrims draw together to Jeruſalem a ſwarm of mendicants; and yet notwithſtanding the wealth accumulated and expended in this city under the influence of prieſtcraft and ſuperſtition, the church of the Holy ſepulchre, the glory of former times, and the monument of Helena's piety, is ſo much neglected, that the ſnow falls into the middle of it: the beams, ſaid to be cedar, are falling, and the whole roof is in a ruinous ſtate. The Armenian convent is ſaid to be elegant, and ſo extenſive as to furniſh accommodation for no leſs than 1000 pilgrims. When Mr. Browne viſited this city in February 1797, a very deep ſnow lay upon the ground for 12 or 13 days. The Catholic convent has a large ſubterraneous ciſtern, into which the ſnow, melting from the roof and other parts, is conveyed, and ſupplies the monks with water for a great portion of the year. Anc. Un. Hiſt. vol. ii. Calmet's Dict. Bible. Gibbon's Rom. Hiſt. vol. iv, vii. viii. ix. x. Volney's Trav. vol. ii. Browne's Travels, quarto.

JERUSALEM, a poſt-town of America, in the county of Ontario, and ſtate of New York; lying on the W. ſide of Seneca lake, and containing about 50 families, and 1219 inhabitants; 30 miles N.E. by N. of Bath.

JERUSALEM, or *Funks-town*, a town of Maryland, in Waſhington county, about 2½ miles S.W. of Elizabeth town; containing about 50 dwellings and a German church.—Alſo, a poſt-town in Southampton county, Virginia; 250 miles from Waſhington.

JERUSALEM, *Old.* See FALLEN *City.*

JERUSALEM, a town of the duchy of Courland; 44 miles E.S.E. of Seelburg.—Alſo, a town of the duchy of Stiria, celebrated for its wine; four miles S.S.W. of Fridaw.

JERUSALEM, *New*, in *Theology.* See MILLENNIUM.

JERUSALEM *Artichoke*, in *Botany.* See HELIANTHUS.

JERUSALEM *Cowſlip.* See PULMONARIA.

JERUSALEM *Croſs.* See LYCHNIS.

JERUSALEM *Oak.* See CHENOPODIUM.

JERUSALEM *Sage.* See PHLOMIS.

JERUSALEM, *Sage of.* See PULMONARIA.

JERUYO, in *Geography*, a ſingular mountain, ſituated in the valley of Urecho, in Mexico or New Spain; which before the year 1760 was a ſmall hill, bearing a ſugar plantation, but from September in that year it has continued to emit fire and burning rocks, that have formed themſelves into three high mountains, whoſe circumference in 1766 was nearly ſix miles. At the eruption the aſhes were forced to the diſtance of 150 miles.

JERXHEIM, a town of the principality of Wolfenbuttel; 13 miles E.S.E. of Wolfenbuttel.

JESAN, a delightful mountain of Japan, near the lake of Oitz; which is eſteemed ſacred, and, according to Kæmpfer, is ſaid to preſent not leſs than 3000 temples.

JESAW, a town of Pruſſia, in the circle of Natangen; 10 miles S. of Konigſberg.

JESEN, in *Ichthyology.* See JENTLING.

JESENITZA, in *Geography*, a town of Croatia; 35 miles N.W. of Bihacs.

JESERNICO, a town of Italy, in the country of Friuli; 12 miles W. of Palma la Nuova.

JESERO, a ſingular lake in the iſle of Cherſo, which only diffuſes its waters every fifth year.

JESHANA, in *Scripture Geography*, a city of Ephraim (2 Chron. xiii. 19.), probably the ſame with *Zin* (Numb. xxxiv. 4.), placed by Euſebius and Jerom ſeven miles N. of Jericho.

JESHIMON, probably the ſame with *Heſmona*, *Aſcmona*, or *Eſcmona*, a city in the wilderneſs of Maon, belonging to Simeon, lying in the S. of Paleſtine, and even in Arabia Petræa, 1 Sam. xxiii. 24.

JESI, in *Geography*, a town of the marquiſate of Ancona; the ſee of a biſhop, containing three churches and ten convents; 16 miles W.S.W. of Ancona. N. lat. 40° 31′. E. long. 13° 10′.

JESILBASCH, *Green-head*, a name of reproach which the Perſians give to the Turks, becauſe their emirs wear a green turban.

JESIORO, in *Geography*, a town of Poland, in the palatinate of Kiev; 56 miles S.S.W. of Czyrkaſſy.

JESSAMINE, in *Botany*. See JASMINUM.

JESSAMINE, in *Geography*, a county of Kentucky, in America; containing 5438 inhabitants, of whom 1553 are ſlaves. The chief town is Nicholasville.

JESSANT, formed from the obſolete French *jeſſer, to riſe*, or *ſpring out*, in *Heraldry*, is applied to a fleur-de-lis, or the like figure, ſeeming to ſpring or ſhoot out of ſome other charge. He bears ſable; three leopards' heads; jeſſant, fleurs-de-lis, or.

JESSE, a large braſs candleſtick, with many ſconces hanging down in the middle of a church or choir. This invention was firſt called *jeſſe*, from the ſimilitude of the branches to thoſe of the *arbor jeſſæ*. This uſeful ornament of churches was firſt brought over into this kingdom by Hugh de Flory, abbot of St. Auſtin's, in Canterbury, about the year 1100.

JESSELMERE, in *Geography*, a town of Hindooſtan, in the circar of Bickaneer; 60 miles W. of Bickaneer. N. lat. 27° 28′. E. long. 72° 51′.

JESSEN, a town of Saxony, on the Elſter; 10 miles E.S.E. of Wittenberg. N. lat. 51° 48′. E. long. 13° 3′.

JESSES denote ribbons hanging down from garlands and crowns; alſo the ſhort ſtraps of leather faſtened to a hawk's legs, and ſo to the vervels; and birds, in *Heraldry*, are ſaid to be *jeſſed*, when theſe jeſſes are of a different tincture from the other parts.

JESSIMA, in *Geography*, one of the iſlands of Japan.

JESSNITZ, a town of Germany, in the principality of Anhalt, on the Muldau; nine miles S. of Deſſau. N. lat. 51° 42′. E. long. 12° 20′.

JESSO, JEDSO, or *Yedſo*, a large iſland in the North Pacific ocean, N. of Niphon, which having received ſome Japaneſe colonies, is generally regarded as ſubject to Japan; but, being inhabited by a ſavage people, is rather conſidered as a foreign conqueſt than as a part of this civilized empire. The inhabitants live chiefly on fiſh and game. This iſland is divided by a narrow ſtrait, about 20 miles broad, from the iſland of *Segalian*, or *Tchoka*, which ſee. N. lat. 42° to 45°. E. long. 146° 10′ to 147° 10′.

JESSORE, a town of Bengal; 54 miles N.E. of Calcutta. N. lat. 23° 7′. E. long. 89° 16′.

JESTING, or *Conciſe Wit*, as diſtinguiſhed from continued wit or *humour* (which ſee), lies either in the thought, or the language, or both. In the firſt caſe it does not depend upon any particular words or turn of the expreſſion. But the greateſt fund of jeſts lies in the language, *i. e.* in tropes or verbal figures; thoſe afforded by tropes conſiſt in the metaphorical ſenſe of the words, and thoſe of verbal figures principally turn upon a double ſenſe of the ſame word, or a ſimilitude of ſound in different words. The third kind of jokes, which lie both in the ſenſe and language, ariſe from figures of ſentences, where the figure itſelf conſiſts in the ſenſe, but the wit turns upon the choice of the words. Ward's Orat. vol. ii. Lect. 40. See WIT.

JESUATES, JESUATÆ, an order of religious, otherwiſe called *Apoſtolical Clerks*, or *Jeſuates of St. Jerom*.

They were founded by John Colombini in 1368, and approved of by Urban V. in 1369, at Viterbo; where he himſelf gave, to ſuch as were preſent, the habit they were to wear. They followed the rule of St. Auguſtin, and were ranked by Pius V. among the order of Mendicants.

They were called Jeſuates, becauſe their firſt founders had the name of Jeſus continually in their mouths: to which they added the name of St. Jerom, becauſe they choſe that ſaint for their protector.

For two centuries the Jeſuates were mere lay-brothers; but in 1606, Paul V. gave them leave to enter into holy orders. In moſt of their houſes they were employed in pharmacy, diſtributing their medicines gratis; others practiſed diſtillation, and ſold aqua vitæ; which occaſioned their being called *aqua-vitæ mongers*.

Being very rich in the ſtate of Venice, that republic ſolicited their ſuppreſſion, and obtained it of Clement IX. in 1668, their effects being employed towards ſupporting the expences of the war in Candia.

JESUITISSÆ, in the *Romiſh Church*, an order of nuns which followed the rule of the Jeſuits, which was ſuppreſſed by pope Urban VIII. in the year 1630.

JESUITS, an order of religious, founded by Ignatius Loyola, a Biſcayan military gentleman, of a fanatical and ambitious ſpirit, called alſo *the Society of Jeſus*.

They are alſo ſometimes called *Loyolites*, and ſometimes *Inighiſts*, from the Spaniſh name of their founder, which was *Inigo de Guipuſcoa*.

This order, which was the moſt political and beſt regulated of all the monaſtic orders, and from which mankind have derived more advantages, and received greater hurt, than from any other of theſe religious fraternities, has rendered itſelf very conſiderable by its miſſions into the Indies, and by its other employments relating to the ſtudy of the ſciences, and the education of youth. The council of Trent calls them "Regular Clerks of the Company of Jeſus."

In the year 1538, Ignatius, having aſſembled ten of his companions at Rome, choſen moſtly out of the univerſity of Paris, propoſed to them to make a new order. After this, he preſented the plan of his inſtitution, ſuggeſted, as he gave out, and his followers ſtill teach, by the immediate inſpiration of heaven, to the Roman pontiff, Paul III. who appointed a committee of cardinals to examine it; upon whoſe report, that the eſtabliſhment was unneceſſary as well as dangerous, Paul refuſed to approve it. This oppoſition was principally urged by the learned and worthy cardinal Guidiccioni.

This oppoſition was vanquiſhed by the dexterity of Ignatius, who propoſed, that beſides the three vows of poverty, chaſtity, and monaſtic obedience, the members of this ſociety ſhould take a fourth vow of obedience to the pope; binding themſelves to go whitherſoever he ſhould command, for the ſervice of religion, and without requiring any thing from the holy ſee for their ſupport. However, Ignatius, and his company in the ſame charter of their order in which they declare their implicit and blind allegiance to the court of Rome, promiſe a like implicit and unlimited allegiance to the general of their ſociety. The pontiff, perceiving this inſtitution to be an object of conſequence, confirmed it under the name of the "Company of Jeſus" by a bull in 1540; and appointed Ignatius Loyola to be the firſt general of the order. Loyola was originally an illiterate ſoldier, and is ſuppoſed by many to have been only a flexible inſtrument in the hands of able and ingenious men, who made uſe of his fortitude and fanaticiſm to anſwer their purpoſes, and perſons much more learned were employed to compoſe the writings which bear his name. Geddes's Tracts, vol. iii. p. 429.

By this bull the number was reſtrained to ſixty; but that reſtriction was taken away two years afterwards by another bull. The order has ſince been confirmed by ſeveral ſucceeding popes, who have added many new rights and privileges to it.

In leſs than half a century after its inſtitution, the ſociety obtained eſtabliſhments in every country that adhered to the Roman Catholic church; in the year 1608, the number of Jeſuits had increaſed to 10,581. In the year 1710, the order poſſeſſed 24 profeſſed houſes; 59 houſes of probation; 340 reſidencies; 612 colleges; 200 miſſions; 150 ſeminaries and boarding-ſchools; and conſiſted of 19,998 Jeſuits.

The conſtitution and laws of the ſociety were perfected by Laynez and Aquaviva, the two generals who ſucceeded Loyola, men far ſuperior to their maſter in abilities, and in the ſcience of government. Several circumſtances concurred to the rapid progreſs and extenſive influence of the Jeſuits. They were taught to conſider themſelves as formed for action, and bound to exert themſelves continually, as ſoldiers in the ſervice of God, and of the pope, his vicar on earth. And that they might have full leiſure for their active ſervice, they were totally exempted from thoſe functions, the performance of which is the chief buſineſs of other monks. They were required to attend to all the tranſactions of the world; to ſtudy the diſpoſitions of perſons in high rank, and to cultivate their friendſhip; and by the conſtitution as well as genius of the order, a ſpirit of action and intrigue was infuſed into all its members. Beſides, the form of government of this order was peculiar: Loyola, full of the ideas of implicit obedience, which he had derived from his military profeſſion, appointed that the government of this order ſhould be purely monarchical. A general, choſen for life by deputies from the ſeveral provinces, poſſeſſed power that was ſupreme and independent, extending to every perſon and to every caſe. He, by his ſole authority, nominated provincials, rectors, and every other officer employed in the government of the ſociety, and could remove them at pleaſure. In him was veſted the ſovereign adminiſtration of the revenues and funds of the order. Every member belonging to it was at his diſpoſal; and by his uncontrollable mandate, he could impoſe upon them any taſk, or employ them in whatſoever ſervice he pleaſed. To his commands they were required to yield not only outward obedience, but to reſign to him the inclinations of their own wills, and the ſentiments of their own underſtandings. There is not in the annals of mankind any example of ſuch a perfect deſpotiſm, exerciſed not over monks ſhut up in the cells of a convent, but over men diſperſed among all the nations of the earth. It is carefully provided, that the general ſhould be perfectly informed with reſpect to the character and abilities of his ſubjects. Every novice, who offered himſelf a candidate for entering into the order, was obliged to manifeſt his conſcience to the ſuperior, or to a perſon appointed by him every ſix months: each member was likewiſe enjoined to obſerve the words and actions of the novices, and to diſcloſe every thing of importance to the ſuperior. The provincials and heads of the ſeveral houſes were alſo obliged to tranſmit to the general, regular, frequent, and minute reports concerning the members under their inſpection. Theſe reports were digeſted and arranged in regiſters, by which the general might eaſily ſurvey the ſtate of the ſociety in every corner of the earth; obſerve the qualifications of its members, and chooſe proper inſtruments for any neceſſary ſervice. The number of theſe reports received annually by the general was 6584, which divided by 37, the number of provinces in the order, gives 177 reports concerning the ſtate of each province tranſmitted annually to Rome. The general alſo received, by the conſtitution of the order, an account of the civil affairs of the country where his ſubjects reſided; ſo that he was furniſhed with full information concerning the tranſactions of every prince and ſtate in the world. The Jeſuits, from their firſt inſtitution, conſidered the education of youth as their peculiar province; and before the expiration of the 16th century, they had obtained the chief direction of this buſineſs in every Catholic country in Europe. They had alſo become the confeſſors of almoſt all its monarchs; they were the ſpiritual guides of almoſt every perſon eminent for rank or power; and they poſſeſſed the higheſt degree of confidence and intereſt with the Papal court, as the moſt zealous and able champions for its authority. The order, notwithſtanding the vow of poverty which they contrived to elude, acquired ample poſſeſſions in every Catholic country. Beſides the ſources of wealth common to all the regular clergy, they obtained, under a pretext of promoting the ſucceſs of their miſſions, and of facilitating the ſupport of their miſſionaries, a ſpecial licence from the court of Rome to trade with the nations which they laboured to convert. In conſequence of this, they engaged in an extenſive and lucrative commerce, both in the Eaſt and Weſt Indies: they alſo aimed at obtaining ſettlements, and accordingly acquired poſſeſſion of a large and fertile province in the ſouthern continent of America, and reigned as ſovereigns over ſome hundred thouſand ſubjects.

The progreſs and influence of the Jeſuits were likewiſe much promoted by their mutual union for the good of the common cauſe; by their reputation for learning and ſcience, in which they excelled all the other orders, though M. d'Alembert ſays, that the order has never produced one man, whoſe mind was ſo much enlightened with ſound knowledge as to merit the name of a philoſopher: by the ſeverity of their diſcipline and regularity of their conduct and manners; by propagating a ſyſtem of relaxed and pliant morality, which accommodated itſelf to the paſſions of men, juſtified their vices, tolerated their imperfections, and authorized almoſt every action, which the moſt audacious or crafty politician would wiſh to perpetrate. So that the abbé Boileau ſays of them, they are a people who lengthen the creed and ſhorten the decalogue; by extending the juriſdiction and abſolute power of the court of Rome; and by the zeal which they have manifeſted in combatting the opinions and checking the progreſs of the Proteſtants.

The end principally propoſed by this order was to gain converts to the Romiſh church; with which view they diſperſed themſelves in every country and nation, and with amazing induſtry and addreſs purſued the end of their inſtitution. No difficulty ſo great that they could not ſurmount, no danger ſo imminent that they would not undergo; and, as ſome ſay, no crimes ſo ſhocking that have not been perpetrated by them for the ſervice of their cauſe.

Of all the Jeſuits, who diſtinguiſhed themſelves by their zealous and laborious attempts to extend the limits of the church, none acquired a more ſhining reputation than Francis Xavier, commonly called "The Apoſtle of the Indians." He failed for the Portugueſe ſettlements in India in 1522, and ſoon diffuſed the knowledge and profeſſion of the popiſh religion over a great part of the continent and neighbouring iſlands. In 1529 he laid the foundation of a conſiderable church in Japan; againſt which, however, a violent perſecution was commenced in 1615, and laſted ſeveral years, and terminated in the utter extirpation of Chriſtianity, and an edict forbidding all Europeans, a few Dutch merchants excepted, to approach the Japaneſe dominions; and having embarked for China, he died in 1552, within ſight of it. Others, after his death, and particularly

Ricci, an Italian, penetrated into China, and eſtabliſhed churches, ſome remains of which ſubſiſt to this day. Robert de Nobili is much celebrated by the Jeſuits on account of his ſucceſs in proſelyting the Brachmans: for the method he uſed, ſee BRACHMANS. The Jeſuits are charged by the Janſeniſts and Dominicans with many fraudulent practices in their attempts to propagate Chriſtianity in China; and particularly with endeavouring to perſuade the Chineſe, that the doctrine of Confucius and that of the goſpel were not eſſentially different, and that Jeſus Chriſt had been known and worſhipped in their nation many years ago. Ricci allowed the Chineſe converts to retain the profane cuſtoms and the abſurd rites of their Pagan anceſtors; but his opinion was condemned by the Dominicans and Franciſcans. This difference laid the foundation of a long and violent conteſt. Innocent X. in 1645, pronounced ſentence in favour of the Dominicans; but, about eleven years after, Alexander VII. granted the Chineſe the indulgence propoſed by Ricci. Complaints were renewed by the Dominicans in 1661, and again in 1674, under the pontificate of Innocent XI.; and the diſpute was carried on both in Europe and China, from the year 1684, till the queſtion was decided to the diſadvantage of the Jeſuits in the year 1704, by Clement XI.; but this edict was mitigated in 1715. It is well known that the inquiſition erected by the Jeſuits at Goa, where the body of Xavier lies interred, and is worſhipped with the higheſt marks of devotion, and the penal laws, whoſe terrors they employed ſo freely in propagation of the goſpel, contributed much more than their arguments and exhortation, which were but ſparingly uſed, to engage the Indians to embrace Chriſtianity.

About the beginning of the 17th century, the Jeſuits obtained admiſſion into the fertile province of Paraguay, in South America, where they found the inhabitants in a barbarous and ſavage ſtate; they began with inſtructing and civilizing them; cultivating amongſt them the arts and manufactures, and accuſtoming them to the bleſſings of ſociety, ſecurity, and order. By this method they ſecured their eſteem and confidence; and a few Jeſuits preſided over ſome hundred thouſand Indians. However, it appears from the moſt credible relations, that they ſoon changed their views from the propagating of Chriſtianity, to ſchemes of inſatiable avarice and boundleſs ambition: and they have ſent yearly to the members of their order, in Europe, immenſe quantities of gold, drawn from ſeveral American provinces where they have power and property, but chiefly from Paraguay, which belonged to them only: and it is evident, from later diſcoveries, which have proved the ruin of the Jeſuits in Spain and Portugal, that they had eſtabliſhed an independent empire in this province, ſubject to their ſociety alone, and which, by the ſuperior excellence of its conſtitution and police, could ſcarcely have failed to extend its dominions over all the ſouthern continent of America. They cut off every kind of communication between the Spaniards and Portugueſe in the adjacent ſettlements, and the Indians; inſpired the latter with hatred and contempt of theſe nations; induſtriouſly avoided giving the Indians any knowledge of the Spaniſh, or other European language; inſtructed them in the art of war; formed them into bodies of cavalry and infantry, and provided them with artillery and magazines ſtored with all the implements of war. Such was the ſtate of things when, in the year 1750, the courts of Madrid and Liſbon entered into a treaty for fixing the limits of their reſpective dominions in South America. In the execution of the treaty, in the year 1752, the Jeſuits demurred; and a war enſued between the Spaniſh and Portugueſe on one ſide, and the Indians, animated by the Jeſuits, on the other; which was the real and original cauſe of the diſgrace of the Jeſuits at the court of Portugal.

The Jeſuits have been juſtly charged with inculcating the moſt licentious and dangerous maxims with regard to morality and religion: ſuch are the following extracted from their writings. That perſons truly wicked and void of the love of God, may expect to obtain eternal life in heaven, provided that they be impreſſed with a fear of the divine anger, and avoid all heinous and enormous crimes through the dread of future puniſhment: that thoſe perſons may tranſgreſs with ſafety, who have a probable reaſon for tranſgreſſing, *i. e.* any plauſible argument or authority in favour of the ſin they intended to commit: that actions intrinſically evil, and directly contrary to the divine laws, may be innocently performed, by thoſe who have ſo much power over their own minds, as to join, even ideally, a good end to this wicked action, or to ſpeak in their ſtyle, who are capable of directing their intention aright: that philoſophical ſin is of a very light and trivial nature, and does not deſerve the pain of hell: by philoſophical ſin they mean an action contrary to right reaſon, which is done by a perſon who is either abſolutely ignorant of God, or does not think of him during the time this action is committed: that the tranſgreſſions committed by a perſon blinded by the ſeduction of luſt, agitated by the impulſe of tumultuous paſſions, and deſtitute of all ſenſe and impreſſion of religion, however deteſtable and heinous they may be in themſelves, are not imputable to the tranſgreſſor before the tribunal of God; and that ſuch tranſgreſſions may often be as involuntary as the actions of a madman: and that the perſon who takes an oath, or enters into a contract, may, to elude the force of the one, and the obligation of the other, add to the form of words that expreſs them, certain mental additions and tacit reſervations. Some of theſe maxims were condemned by a public edict of pope Alexander VII. in 1659; and that relating to philoſophical ſin met with the ſame fate in 1690, under the pontificate of Alexander VIII. Neither of theſe bulls are to be found in the "Bullarium Pontificum;" but they are induſtriouſly preſerved by the Janſeniſts and Dominicans. The corrupt morality of the Jeſuits was humourouſly and learnedly attacked by the famous Paſcal, in his work, entitled "Les Provinciales, ou Lettres écrits par Louis de Montalte, à un Provincial de ſes Amis et aux Jeſuits, ſur la Morale et la Politique de ces Pères." The Jeſuits, however, obtained a ſentence againſt the Provinciales, by which they were condemned to be burnt publicly at Paris. Another excellent book, by Perrault, publiſhed at Mons, in 3 volumes 8vo., in the year 1702, entitled "La Morale des Jeſuits, extrait fidélement de leurs Livres, imprimés avec la Permiſſion et l'Approbation des Superieurs de leur Compagnie, par un Docteur de Sorbonne," was burnt at Paris, in the year 1670, at the requeſt of the Jeſuits. The famous Arnauld, with ſome of his Janſeniſt brethren, have undertaken to prove, that the Jeſuits reduced their pernicious maxims to practice, in a celebrated work, entitled "La Morale Pratique des Jeſuits," conſiſting of eight volumes 8vo., the ſecond edition of which was publiſhed at Amſterdam in the year 1742. For an account of the controverſy between the Jeſuits and Janſeniſts, ſee JANSENISTS.

The Jeſuits had no particular habit; but changed and accommodated it to times and occaſions. The order conſiſted of five different claſſes; *profeſſed fathers*, *ſpiritual coadjutors*, *approved ſcholars*, *lay brothers*, called alſo *temporal coadjutors*, and *novices*. Some writers make only three claſſes, *viz.* the *profeſſed members*, the *ſcholars*, and the *novices*. Some add a ſixth claſs, under the title of *adjuncts*, which they ſay was numerous, and was incorporated with the other claſſes, and diſguiſed under different ſorts of apparel.

The *profeſſed fathers*, which made the body of the company, took the three ſolemn vows of religion publicly, and to theſe add a ſpecial vow of obedience to the head of the church, as to what regards miſſions among idolaters, heretics, &c.—The *ſpiritual coadjutors* alſo made public vows of chaſtity, poverty, and obedience; but omitted the fourth relating to miſſions. —*Approved ſcholars* were thoſe who, after two years noviciate, had been admitted, and had made three vows of religion; not ſolemn, indeed, but yet declared. Theſe were in the way to become profeſſed, or ſpiritual coadjutors, according as the general thought fit. Theſe degrees, eſpecially that of profeſſed, were never conferred till after two years noviciate, and ſeven years ſtudy, ſeven of regency, a third year of noviciate, and thirty-three years of age; the age at which our Saviour is ſuppoſed to have been crucified. The vows of the ſcholars were abſolute on their ſide, but only conditional on the ſide of the order; the general having it in his power to diſpenſe with them.

The order was divided into *aſſiſtances*, the aſſiſtances into *provinces*, and the provinces into *houſes*. It was governed by a general, who was perpetual and abſolute. He reſided at Rome, and was elected by a general congregation of the order. He had with him five perſons, who were, as it were, his miniſters. They were called aſſiſtants, and bore the name of the kingdom or country to which they belonged, and by which they were appointed; *viz.* of Italy, France, Spain, Germany, and Portugal. To theſe belonged the care of preparing the matters of their reſpective aſſiſtances, and of putting them in a method to facilitate their diſpatch.

Each province had four kinds of houſes, *viz. profeſſed houſes*, which could have no lands belonging to them; *colleges*, where the ſciences were taught; *reſidences*, where were a number of workmen employed in ſuch offices, as had any immediate relation to preaching, confeſſion, miſſions, &c.; and houſes of *novices*. Among the colleges there were ſome called ſimply *colleges*, and others called *ſeminaries*. Theſe laſt were ſet apart for the young Jeſuits to go through their courſes of philoſophy and theology in; the others were for ſtrangers.

Each province was governed by a *provincial*, and each houſe by a *ſuperior*; who was called *rector* in the colleges, and a *ſuperior* in the other houſes. Ignatius regulated the diſcipline of theſe houſes, and eſpecially of the colleges, by what he had obſerved in the Sorbonne, while he ſtudied at Paris.

The profeſſed of this order renounced by a ſolemn vow all preferment, and eſpecially prelacy; and could not receive any, unleſs enjoined thereto by the pope, under pain of ſin. This the pope ſometimes did; inſomuch that they have had eight cardinals of their order.

The reader will find, in the preceding part of this article, a brief but comprehenſive account of the Jeſuits, as to their origin and influence, and the chief cauſes on which their influence depended, and the nature of their conſtitution: it remains to direct his views to their decline and actual ſuppreſſion, in ſome parts of Europe, where their credit, power, and opulence had at one time arrived to a prodigious height. In France, the aſſaſſination of Henry IV. by Jean Chatel, one of their ſcholars, and the writings of the Jeſuit Guignard, in favour of regicide, induced ſeveral of the parliaments of the provinces to expel them, as a deteſtable and diabolical ſociety, the corruptors of youth, and enemies to the king and ſtate. But they were again favoured by Louis XIII. and cardinal Richelieu, and alſo by Louis XIV.; in whoſe reign they obtained the revocation of the edict of Nantes againſt the Proteſtants, and ſucceeded almoſt to their utmoſt wiſhes in ſuppreſſing the Janſeniſts, their inveterate enemies. However, at this period, their affairs ſeem to have taken a different turn. Father Tellier's violence in deſtroying the famous Port-Royal, and the univerſal commotion occaſioned by the bull Unigenitus, raiſed clamours againſt them, which never ſubſided till their ruin. The refuſal of the ſacrament to the Janſeniſts ſerved alſo to light up the flame which ſucceeded, and before it could be extinguiſhed, effected the diſſolution of the Jeſuits. About this time they alſo refuſed, as it is ſaid out of reſpect to the queen and dauphin, to undertake the ſpiritual guidance of La Pompadour: and whilſt they offended the court by their ſcruples, they diſpleaſed it equally by their intrigues; laying ſnares for diſgracing perſons in place, whoſe only crime was a diſregard for their ſociety. They alſo offended men or letters by their violent declamations againſt the Encyclopédie, and by their abuſe of Voltaire, the author of the Henriade. In this ſituation of the Jeſuits, the war broke out between England and France, which involved the ſociety in that famous law-ſuit, which directly brought on its deſtruction. Having carried on a conſiderable commerce in the iſland of Martinico, and ſuſtained ſome loſſes by the war, they wanted to compound their debts with their correſpondents in Lyons and Marſeilles. Theſe correſpondents, looking upon the ſociety in general to be anſwerable for their brethren in Martinico, addreſſed themſelves to a certain Jeſuit in France, demanding juſtice. This good father, and the Jeſuits in general, demurred, and ſtood trial before the grand-chamber of the parliament of Paris, where they were caſt; and not only ſentenced to pay the immenſe ſums in litigation, but interdicted for the future all manner of commerce. This ſentence led into an examination of their conſtitution by their own books; which appeared to be contrary to the laws of the kingdom, the obedience due to the king, the ſafety of his perſon, and the peace of the ſtate. Beſides, the Jeſuits were grown rich, inſolent, and imperious; and though they profeſſed to have renounced the world, they were found to be tutors, courtiers, merchants, politicians, prieſts, and wanted nothing leſs than to be governors and rulers of the earth. Theſe were ſufficient motives for ſuppreſſing them: the attempt to aſſaſſinate the French king in 1757 was charged on the Jeſuits: and the actual aſſaſſination of the king of Portugal in the following year, which induced the Portugueſe miniſter to drive them all out of the kingdom, in 1759 increaſed the odium againſt them. The parliament of Paris having taken a whole year to enquire into the nature of their inſtitution, and news of the capture of Martinico in the mean while arriving, the miniſter, as M. d'Alembert ſays, in order to cauſe a diverſion, thought on the expedient of proceeding farther againſt the Jeſuits; and the principal of their college was commanded to obey the arrets of parliament, and to ſhut up their ſchools on the firſt of April, 1762. On the ſixth of Auguſt following, their inſtitution was unanimouſly condemned by the parliament, without any oppoſition on the part of the ſovereign; the ſociety was of courſe diſſolved; and their poſſeſſions alienated and ſold; the other parliaments of the kingdom following ſooner or later the example of that of Paris: nay ſome of them acted with ſtill greater ſeverity, driving them out of their provinces without ſtanding upon forms of law. In general, however, individuals were permitted to reſide in France, on renouncing the ſociety, and taking oaths of allegiance to the king. In a little while after, the king iſſued an edict, which aboliſhed the ſociety throughout all France. The parliament of Paris, on regiſtering this new edict, ordained the Jeſuits to reſide each in his own dioceſe, and to preſent themſelves every ſix months before the magiſtrates of the place in which they ſhall dwell. The ſame arret forbade them to come within ten leagues of Paris, and baniſhed them at leaſt ſix leagues from Verſailles, but prohibited them not from dwelling at Fontainbleau and Compiegne, where the court reſided at leaſt three months in the year. The Jeſuits were expelled from Portugal in 1759; from France in 1764; from Spain and Naples in 1767; and their ſociety was totally aboliſhed, in 1773, by pope Clement XIV. See on the ſubject of this article, Moſheim's Eccl. Hiſt. vol. iii. p. 439. vol. iv. p. 154. vol. v. p. 5. Engliſh ed. 8vo. Robertſon's Hiſt. Ch. V. vol. iii. p. 104, &c. 8vo. D'Alembert's Account of the Deſtruction of the Jeſuits, paſſim.

Jesuits' *Bark*. See Cortex *Peruvianus* and Cinchona.

Jesuits' *Bark-tree*, *True*, in *Botany*. See Cinchona.

Jesuits' *Bark-tree*, *Falſe*. See Iva.

Jesuits' *Rocks*, in *Geography*, rocks in the Atlantic, near the coaſt of Braſil. S. lat. 17° 48′.

JESUL, a river of Hindooſtan, being one of the branches of the Chumbul, which joins the main ſtream between Kotta and Suiſopour.

JESUPOL, a town of Poland, in Galicia; 5 miles S. of Halicz.

JESUS, formed of the Hebrew יהושוע, *Jehoſhuah*, from ישע, and denoting "he that ſhall ſave," or "the Saviour," is an appellation appropriated by extraordinary direction, and in a very peculiar and diſtinguiſhing manner, to the Son of God and the Saviour of the world; the long predicted and expected Meſſiah. (Luke, i. 26—38.) This name is frequently uſed in connection with that of "Chriſt," for the origin and meaning of which ſee that article. For the different ſenſes in which the appellations Son *of God* and Son *of Man* have been underſtood, ſee thoſe articles reſpectively. No one who adverts, even in the ſlighteſt manner, to the hiſtory of our bleſſed Lord given by the four Evangeliſts, and to the writings of thoſe who were ſupernaturally inſtructed to teach his doctrine, can heſitate for a moment in allowing the propriety of aſcribing to him the name of "Jeſus" in a ſuper-eminent degree: for though this was a name of Hebrew etymology, and was given, under one form or other, to ſeveral diſtinguiſhed perſons among the Jews, it never could be more fitly applied than to him, who, acting under a divine commiſſion, ſaved mankind from ſin and death, and conducts them to knowledge, pardon, holineſs, and immortality. See Christian *Religion*.

Of the life of Jeſus Chriſt we have an authentic account by the four evangeliſts, Matthew, Mark, Luke, and John. (See each article reſpectively, and alſo Evangelists.) The account of theſe hiſtorians chiefly relates to his diſcourſes and conduct after he commenced the exerciſe of his public miniſtry. After giving us brief information concerning his birth, lineage, family, and parents, they tell us that he was born at Bethlehem; and that in order to avoid the jealouſy and cruelty of Herod, he was taken by his parents into Egypt. Upon the death of Herod he returned to Judea; but excepting one ſpecimen that is recorded of his early wiſdom, when he diſputed with the Jewiſh doctors in the temple at the age of 12 years, we know little of his hiſtory till he attained the age of about 30 years. Whether he was employed in his father's buſineſs, during his earlier years, as ſome have aſſerted, it is not poſſible certainly to determine. We know, however, that he increaſed in wiſdom as well as ſtature, and in favour with God and man. Before he commenced his public miniſtry, his advent was announced by John the Baptiſt, and he was baptized by him in the river Jordan. In the courſe of his ſubſequent life, which was of no long duration, he maintained a character ſingularly irreproachable, and in the moſt perfect degree exemplary. He was active and unwearied in communicating inſtruction, and in performing miracles, which, in their nature, mode of operation, and general objects, exhibited the unparallelled benevolence of his diſpoſition, and which ſerved to evince, to every unprejudiced obſerver, his divine origin and miſſion. In his character and conduct, as well as in his humble and ſuffering ſtate, he manifeſted to the world that he was the predicted and long expected Meſſiah; and the predictions which he himſelf delivered, ſerved, in their ultimate iſſue and accompliſhment, to manifeſt the ſame important and uſeful purpoſe. For his aſſiſtance in the diſſemination of his ſuper-excellent doctrine, and by way of preparing ſuitable ſucceſſors, when his life terminated, he appointed apoſtles and evangeliſts, who were ſupernaturally endowed and qualified for the ſervice which was aſſigned them. After a limited period of ſervice and ſuffering, a conſpiracy was formed againſt him by the leaders of the Jewiſh nation; which, after the purpoſes of his miſſion, during his life, were fulfilled, took effect by the treachery of Judas Iſcariot. At length he was brought before the Sanhedrim; and though Pilate, the Roman governor, teſtified to his innocence, and wiſhed to preſerve his life, the clamour of the populace prevailed. Jeſus was condemned to ſuffer an ignominious death, and the ſentence was ſpeedily executed. By his death he accompliſhed the purpoſes of the divine wiſdom and goodneſs, as he had previouſly fulfilled them in the courſe of his life; and on the third day roſe from the dead, agreeably to his prediction, and appeared at ſundry times and in various places to his diſciples. (See Resurrection.) Having ſpent the interval of 40 days in affording ſatisfactory evidence of his reſtoration to life to competent witneſſes, and in inſtructing his apoſtles concerning the nature of his kingdom and the objects of their commiſſion, he viſibly aſcended to heaven, and, as a further evidence of his continued exiſtence, and of the powers with which he was inveſted, conferred extraordinary gifts on his apoſtles, deputing and qualifying them for propagating his religion in the world. See Christian *Religion*.

Concerning the perſon of Jeſus Chriſt, the rank of being he ſuſtained, and the manner of his introduction to the world, divines, both ancient and modern, have entertained very different opinions. With regard to the perſon of Jeſus Chriſt (ſee Person), ſome have ſuppoſed that he is the ſame in ſubſtance, and equal in power and glory, with the Father. The ſecond article of the church of England expreſſes this doctrine in the following words: "The Son, which is the Word of the Father, begotten from everlaſting of the Father, the very and eternal God, of one ſubſtance with the Father, took of man's nature in the womb of the bleſſed Virgin, of her ſubſtance; ſo that two whole and perfect natures, that is, the godhead and manhood, were joined together in one perſon, never to be divided: whereof is one Chriſt, very God and very man, who truly ſuffered, was dead and buried." Others, who cannot adopt this generally received opinion concerning Chriſt, as God, of the ſame ſubſtance, and equal with the Father, reject the common meaning of the word *perſon*, and admit only what they call a modal diſtinction. But in order to avoid the charge of Sabellianiſm, which they conceive to be a very pernicious opinion, and which holds one perſon only in the Deity, under three different denominations, they ſay, that though the Father, the Son, and the Holy Ghoſt are not three diſtinct beings, or individuals, there is a diſtinction, which may be repreſented by that of three perſons. (See SABELLIANS.) Others again, dreading the tritheiſm charged upon the common opinion, ſuppoſe the Son to be inferior to the Father in every reſpect but this, that they are coeternal, and have all the divine attributes that are communicable, not of themſelves, but of the Father. Epiſcopius and Cudworth adopted this opinion, and were followed by Dr. Clarke, Jackſon, &c. Dr. Clarke, in particular, maintained, that there is one Supreme Being, who is the Father, and two ſubordinate, derived and dependent beings; but he waves calling Chriſt a *creature*, as the ancient Arians did, and principally on that foundation diſclaims the charge of Arianiſm. (See SEMI-ARIANS.) Biſhops Pearſon and Bull, and alſo Dr. Owen, were of opinion, that though God the Father is the *fountain* of the Deity, the whole divine nature is communicated from the Father to the Son; yet ſo as that the Father and Son are not ſeparate, nor ſeparable from the divinity, but do ſtill exiſt in it, and are moſt intimately united to it. Dr. Watts, who has been followed by others, in what ſome have denominated the "indwelling ſcheme," and which, as it is ſometimes interpreted, has merely ſhades of difference from Sabellianiſm, maintained, that one ſupreme God dwells in the human nature of Chriſt, which he ſuppoſes to have exiſted the firſt of all creatures; and he ſpeaks of the divine *Logos* (which ſee) as the *wiſdom* of God, and the *Holy Spirit* (ſee SPIRIT) as the divine *power*, or the influence and effect of it; which, he ſays, is a ſcriptural perſon, *i. e.* ſpoken of figuratively in ſcripture under perſonal characters. Others, claſſed, however they differ from one another, under the general denomination of Arians, ſuppoſe the Son to be a ſpiritual being or intelligent agent, ſubordinate and inferior to the Father; not the ſame with the Father, or equal to him, or of the ſame nature and eſſence; but ſaid to be God, on account of his great excellence and power, derived to him by the will of the Father. But of thoſe who adopt this general opinion there are various gradations, as we have already ſhewn under the article ARIANS. Others, who are ſuppoſed to adopt ſentiments ſimilar to thoſe of the ancient Nazarenes and Ebionites, and who in later times have been denominated Socinians and Unitarians, though they have no excluſive title to the latter appellation, maintain, that Jeſus is a man, poſſeſſing a reaſonable ſoul united to a human body, and favoured by God with extraordinary communications of knowledge and power. Some of this claſs believe that Jeſus was a man, not made as Adam, but born of a woman, not in the ordinary way of generation, but of a virgin, by the immediate operation and miraculous power of God (Luke, i. 35.); but others, rejecting the ſentiment of a miraculous conception, are of opinion that Jeſus Chriſt was literally and truly the ſon of Joſeph and Mary, born like other men in the ordinary courſe of nature, and ſubject to ſimilar infirmities. This man, they ſay, was endowed with extraordinary gifts and powers for fulfilling the important commiſſion with which he was entruſted; and when the purpoſes of his ſelection and appointment were completed, he died, and was raiſed from the dead, in teſtimony to the truth of the important doctrine taught by him, and as a pattern of that reſurrection of which he aſſured his faithful followers. Whether this opinion, or that of thoſe who maintain the pre-exiſtent dignity of the ſpirit of Jeſus Chriſt, and its union with a corporeal frame by an extraordinary interpoſition of divine power, be moſt agreeable to the high notions we are led to entertain of the impeccable and exemplary character and ſuper-eminent office ſuſtained by Chriſt, as the teacher, ſaviour, and judge of mankind, and alſo to the language of the Old and New Teſtament by which he is deſcribed, we leave to the unprejudiced conſideration and impartial deciſion of the reader. Perſons of both theſe deſcriptions equally maintain the unity of God, and of the object of worſhip; and are therefore unqueſtionably entitled to the appellation of Unitarians. Moreover, it is his duty to deliberate, and to inquire without prejudice, equally diſregarding the charge of credulity and innovation, whether he ought not to retain, or even now to adopt, the commonly received notion concerning the perſon of Jeſus Chriſt, ſanctioned as it is by the authority of many learned divines, who, after diligent examination, conceive it to be moſt conformable to the language of ſcripture, and to the doctrine of divine revelation. See TRINITY and UNITARIANS.

Under the article EPOCHA *of Chriſt*, we have ſtated the opinions that have been generally adopted with regard to the era of our Saviour's nativity and the time of his death. But as different ſentiments have been maintained reſpecting the duration of his miniſtry, we ſhall here inquire into the reaſons on which they are founded. To this purpoſe, St. Luke ſays (ch. iii. 1, 2.) "Now in the 15th year of the reign of Tiberius Cæſar, Pontius Pilate being governor of Judea,——the word of God came unto John, the ſon of Zacharias:" and the evangeliſt adds (ch. i. 21—23.) "Jeſus alſo being baptized.——And Jeſus himſelf began to be about 30 years of age." It is added in St. John's goſpel, as another note of time to our preſent purpoſe, (ch. ii. 20.) "Forty and ſix years was this temple in building." From ſeveral circumſtances ſtated by Dr. Lardner, it appears that Jeſus was born about a year and ſix or ſeven months before the death of Herod, that is, before the latter end of the year of Rome 748 or 749, that is, in September or October. We have ſhewn under the article EPOCHA with what propriety our Lord might be ſaid to be "*about* 30 years of age" in the fifteenth year of Tiberius, ſuppoſing it to be the fifteenth of his proconſular empire. Accordingly, if the fifteenth of Tiberius's proconſular empire began the 28th of Auguſt, A.U. 778. A.D. 25, and if John the Baptiſt began to preach in November that year, but did not baptize Jeſus till after he had preached a year and ſome months, then the paſſover at which theſe words were ſpoken was the paſſover A.U. 780. A.D. 27. Or, if the fifteenth year of Tiberius's reign began A.U. 779. A.D. 26, and John began then to preach, and Jeſus was baptized by him ſome time before the paſſover next following, ſtill theſe words would be ſpoken by the Jews at the paſſover A. U. 780. A.D. 27. The eighteenth year of Herod's reign, from the death of Antigonus, is ſuppoſed to have begun ſome time in A.U. 734. Herod might make his offer to the Jews of rebuilding the temple at the feaſt of tabernacles in November that year: from November A.U. 734, to the paſſover A.U. 780. A.D. 27, is almoſt 45½ years; at this time, therefore, the Jews might not improperly ſay, the temple had been 46 *years in building*. The 46th year was then current, and it was to the purpoſe of the Jews rather to add to than to diminiſh the time which had been ſpent in that work; ſo that there is no time more ſuitable to theſe words of the Jews than the paſſover A.D. 27; though there is no manner of inconſiſtency between underſtanding the fifteenth of Tiberius, of his proconſular empire, and ſuppoſing that theſe words were ſpoken at the paſſover A.D. 28, and then the temple might have been 46 years in building. The words of St. Luke, "and Jeſus himſelf began to be about 30 years of age," may be underſtood with ſome latitude. Jeſus might be 32 years of age or more at this time; the word *about*, ωσει, being often uſed when a preciſe exactneſs is not intended or expected. Matt. xiv. 21. Mark, vi. 44. Luke, ix. 14. John, vi. 10. Acts, ii. 41. Luke, i. 56. xxii. 41. John, i. 39. Acts, v. 36. Underſtanding St. Luke's words in this manner, it would be eaſy to ſhew the agreement of his numbers with the time of our Saviour's nativity. The fifteenth of Tiberius's ſole empire began A.U. 781. A.D. 28. If Jeſus was baptized the ſixth of January A.U. 782. A.D. 29, he would be but ſome months above 33 years of age, though he was born ſo ſoon as September A.U. 748. And if he was born A.U. 749, then, though his baptiſm be placed in the beginning of A.U. 783. A.D. 30, ſtill he would be little more than 33 years of age. All the other notes of time are alſo very eaſily reconciled with this fifteenth year of Tiberius's ſole empire. Pontius Pilate came into Judea before the paſſover, in the twelfth year of Tiberius's ſole empire, A.U. 779. A.D. 26, and continued there ten years, therefore he was undoubtedly governor of Judea at the commencement of John the Baptiſt's miniſtry, and till after our Saviour's crucifixion. As for the words of the Jews, ſpoken by them at the firſt paſſover of our Saviour's miniſtry, "Forty-ſix years has this temple been in building;" it is but to ſuppoſe that they referred not to the time when Herod made the propoſal of repairing the temple, in the eighteenth year of his reign, but to the time when, in purſuance of that propoſal, he actually ſet about the work, after he had got all things in readineſs for it, and it will be eaſily perceived that theſe words are agreeable to truth. Dr. Lardner ſuggeſts, that the ſuppoſition of St. Luke's intending the firſt of the epochs abovementioned, that is, the fifteenth of Tiberius's proconſular empire, ſeems to be very much favoured by the firſt Chriſtians; who generally place the crucifixion of Jeſus at the paſſover of the fifteenth of Tiberius's ſole empire, when the two Gemini were conſuls of Rome, A.D. 29. With regard to the duration of our Lord's miniſtry, it appears from the above ſtatement to be between two and three years. Thus alſo, according to the Harmony of Tatian, A.D. 220, it conſiſts of two years and a part, for the third year, in which our Lord dies, is not complete. Tatian therefore computes three paſſovers in the goſpels, at the laſt of which Jeſus ſuffered. And it is evident that he reckoned no more, becauſe he does not ſuppoſe the "feaſt" of the Jews, mentioned John, v. 1. to have been a paſſover, but pentecoſt, as he plainly calls it. This, ſays Dr. Lardner, is a mark of antiquity; modern harmoniſts, who prolong our Lord's miniſtry beyond the ſpace of three years, generally reckon this feaſt, though without any good reaſon, a paſſover. So Irenæus computed three paſſovers in our Lord's miniſtry: and Origen too ſays, that Judas was not three years with Jeſus. Indeed it appears, that this father thought our Saviour's whole miniſtry was above two, but not quite three years, while the moſt public part of it did not conſiſt of more than a year and ſome months: and this, ſays Dr. Lardner, "I have long taken to be the truth, ſo far as I am capable of learning it from a careful reading of the goſpels." In St. John's goſpel are three paſſovers, and our Saviour's miniſtry has two years and a part; but the former part of his miniſtry there related, was not ſo public as that after John's impriſonment. In the other three evangeliſts, who relate chiefly our Lord's moſt public preaching after John the Baptiſt's impriſonment, is the hiſtory of only ſomewhat more than the ſpace of one year; how much more it is not very eaſy to ſay; all which is much confirmed by comparing them with St. John. Euſebius diſcovered four ſucceſſive paſſovers in the goſpel of St. John, and therefore was of opinion that our Saviour preached three years and a half; and his opinion has been generally prevalent. Some critics, indeed, have extended the public miniſtry of Chriſt a year or two farther, and ſir Iſaac Newton makes it to comprehend five paſſovers: whereas the oldeſt Chriſtian fathers were almoſt univerſally of opinion, that our Lord preached no longer than one year, or one year and a few months. Mr. Mann ſome years ago propoſed the hypotheſis of *one year*, to which he ſeems to have been led by his peculiar interpretation of Daniel's 70 weeks, with which he makes it to correſpond. The birth of Chriſt he aſſigns to the ſeventh year before the commencement of the common Chriſtian era, A.U. 747. Jul. Per. 4707, and he places his death in the year 26, or the fifteenth of Tiberius, reckoned from the time of his becoming aſſociate in the empire with Auguſtus. Mr. Mann lays great ſtreſs upon the teſtimony of the ancient fathers, cited by ſir Iſaac Newton in his "Obſervations upon Daniel," *viz.* Clemens Alexandrinus, Origen, Tertullian, Julius Africanus, Lactantius, Jerome, Auſtin, Sulpicius Severus, and Proſper, to whom he adds Juſtin Martyr, and Valentinus the heretic. Beſides, he obſerves that Luke mentions only two epochs in his hiſtory of Chriſt, that of his birth and that of his baptiſm; and therefore he was, with reaſon, underſtood by the fathers to comprehend in the ſecond epoch his death with his baptiſm, both happening within the compaſs of the ſame year, or but a few months more. To this, ſays he, may be added the probability that the evangeliſt mentions both Annas and Caiaphas as high prieſts, becauſe Annas was in that office in that year which included moſt of the preaching and miracles of Chriſt, and Caiaphas in the other, in the firſt quarter of which our Lord ſuffered. Moreover, the paſſage in Iſaiah, lxi. 1, 2, which our Lord read in the ſynagogue at Nazareth, and which he notified to be then fulfilled, *viz.* "The ſpirit of the Lord is upon me, for he has anointed me to preach the acceptable year of the Lord," was anciently, ſays Mr. Mann, thought to ſignify that Chriſt was to preach but one year, diſtinguiſhed by that appellation. Beſides, Matthew, Mark, and Luke evidently ſuppoſed the preaching of only one year; and even John's goſpel, which alone has been thought to ſuppoſe more, will not, in fact, be found to do ſo. For he mentions only one ſummer and one winter. He deſcribes the events of only two paſſovers, one pentecoſt, one feaſt of tabernacles, and one feaſt of dedication; and he mentions them in their natural order, if we ſuppoſe that the ſixth chapter of this evangeliſt hath been tranſpoſed out of its proper place, and that it ſhould precede the fifth. Againſt Mr. Mann's hypotheſis, it has been objected that in John, vi. 4, we read, "And the paſſover, a feaſt of the Jews, was nigh." But he anſwers, that John could not have written thus; becauſe he had mentioned the paſſover in ch. ii. and related ſeveral of the events of it: he could not, therefore, ſuppoſe that his readers would want an explanation of the term in that place. Gerard Voſſius, and other critics, would therefore read, "And a feaſt of the Jews was nigh," and they imagine, that the word "paſſover" was firſt added as a conjectural explanation of ſome perſon or other. However, it is again alleged, that the ancient fathers could never have imagined, as they did, that Chriſt preached only one year, if this third paſſover had been ſo expreſsly mentioned in their copies of this goſpel. Beſides, there is no mention of Chriſt's aſſiſting at any third paſſover. Mr. Mann's hypotheſis has been adopted by Dr. Prieſtley, who has endeavoured, by an examination of Mr. Mann's reaſoning, and by new arguments, to confirm it. He alleges, that ſome very ſhort periods of our Lord's public miniſtry appear, according to the accounts of all the evangeliſts, to have been very full of buſineſs; and if, he ſays, our Lord had paſſed three or four years in this manner, and the twelve apoſtles had alſo been teaching and working miracles in ſix different places, for the ſpace of a year or more, in that ſmall country, and the 70 alſo in 35 places more, for the ſame ſpace of time as is generally ſuppoſed; ſuch a number of miracles would have been performed, as this author cannot but think muſt have exceeded every proper purpoſe of them. Either there could have been no unbelievers left in Judea; or, if the tendency of the miracles had been to exaſperate, ſuch a reſentment would have been excited in the minds of the Jewiſh rulers, as, without a greater miracle than any of the reſt, could not but have terminated in his death long before. Beſides, it is more eaſy to account for the prejudices of the apoſtles, and their ignorance of the true nature of Chriſt's kingdom, even at and after our Lord's death, and the ſuppoſition that his miniſtry was of a ſhort, than that it was of a long duration. Farther, if our Lord really preached three or four years, and, conſequently, if the evangeliſts have ſometimes paſſed over all the events of whole years at a time, is it not ſurpriſing that none of them ſhould ever connect thoſe very diſtant parts of their narrative by ſuch phraſes as *the year following, after one*, or *after two years*, &c. &c.; their uſual tranſition, *after theſe things*, or *afterwards*, cannot be conſtrued to mean *after a year or two*. Again, if Jeſus had been preaching and working miracles, both in Judea and in Galilee, almoſt a year before the death of John the Baptiſt, agreeably to the common hypotheſis, Herod, who reigned in Galilee, could not but have heard of him, and therefore could not but have known that he was not John that was riſen from the dead, as in Matt. xiv. 1. Whereas, if we ſuppoſe that Jeſus had preached only a few weeks before the death of John, we may imagine, that, engaged as Herod was in a multiplicity of buſineſs and pleaſure, he might not have heard of him till that time; and therefore might, with ſome plauſibility, conjecture, as he did, that he was John riſen from the dead. This argument is conſidered by Dr. Prieſtley as almoſt concluſive againſt the common hypotheſis. Moreover, all our Lord's journeys, of which the evangeliſts give any account, agree in ſo many circumſtances, that they are evidently the ſame, and are ſuppoſed to be ſo by all harmoniſts. All his journeys to Jeruſalem amount to no more than four; three of which, at leaſt, every pious Jew was obliged to make in the compaſs of every year. John, who ſupplies many of the deficiencies of the other evangeliſts, only makes up the number of them to four. Dr. Prieſtley conſiders the objections to this hypotheſis, urged by archbiſhop Newcome and others, and endeavours to obviate them. He then arranges the leading events in the life of Chriſt, and points out the particular periods in which they occurred, together with the circumſtances attending them; and cloſes with a computation of the time that was neceſſary for the purpoſe of Chriſt's miniſtry. He annexes a calendar, exhibiting the months and days that elapſed between the firſt of the Jewiſh month Niſan, anſwering to the 17th of March in the Julian computation, to the 30th of Niſan, correſponding to the 2d of April in the following year, together with the principal events that happened during each particular period. According to this calendar, Jeſus, before the paſſover in the 14th of Niſan, had attended the preaching of John, had been baptiſed by him, had paſſed 40 days in the wilderneſs, and had preached in Judea, probably both before and after his return to Cana in Galilee, where he turned the water into wine. The enſuing pentecoſt happened on the 6th of the Jewiſh month Sivan, or the 20th of May; the transfiguration, the 6th of Abb, or the 18th of July; the feaſt of tabernacles, the 15th of Tiſri, or the 24th of September; the feaſt of dedication, on the 25th of Ceſleu, or 2d of December; the reſurrection of Lazarus, in the beginning of Adar, or February; the triumphant entry into Jeruſalem, on the 10th of Niſan, or 13th of March; the paſſover, at which the Lord's ſupper was inſtituted, on the 14th of Niſan, or 17th of March; the crucifixon of Chriſt, on Friday the 15th of Niſan, or 18th of March, A. D. 29; his reſurrection, on the 17th of Niſan, or 20th of March; and his appearance to the apoſtles, when Thomas was preſent, on the 24th of Niſan, or 27th of March. Calmet's Dict. Lardner's Works. Prieſtley's Harmony. Newcome's Harmony.

Jesus *de Cuyaba, El*, in *Geography*, a town of Braſil, in the government of Matto Groſſo.

Jesus *Iſland*, a ſmall iſland in the Pacific ocean, diſcovered by Mendana in 1567, and inhabited by a copper-coloured and mulatto race of men; eight degrees due N. of the New Hebrides. S. lat. 6 50′. E. long. from Paris 165°.—Alſo, an iſland in the river St. Laurence, near that of Montreal, about 24 miles long and ſix wide.

Jesus *de Machaca*, a town of Peru, in the dioceſe of La Paz; 40 miles W. of La Paz.

Jesus *Maria*, a town of South America, in the province of Cordova; 30 miles N. of Cordova.

Jesus *Maria de los Montes*, a town of South America, in the government of Buenos Ayres; 60 miles S. of Santa Cruz de la Sierra la Nueva.

Jesus, in *Ichthyology*, a name given by the people of Dantzic to the fiſh called by Geſner the blue chub, or capito cæruleus. It is called alſo *jeſe*, *jeſen*, and *jeſitz*.

Jesus, *Fathers of the Oratory of*. See Oratory.

Jesus, *Order of*. See *Order of* Seraphim.

Jesus *Chriſt, Order of*, was inſtituted at Avignon, in Italy, by pope John XXII. in the year 1320. The reigning pope was appointed ſovereign and maſter of the order. The badge of the order, which is worn by the knights pendent to a ſcarlet ribbon tied to a button-hole of the waiſtcoat, is a croſs of gold, enamelled gules, and edged with gold.

Jesus *and Mary, Order of*, was inſtituted in Italy, in the year 1615, by pope Paul V. The knights of this order were ſworn to defend the holy ſee of Rome againſt all infidels and heretics; and for that purpoſe each knight was conſtantly to keep ready a horſe completely accoutred, a ſword, and a lance, and each of his domeſtics armed with a fuſil. The badge of this order was a croſs of eight points, like that of Malta, red, edged with gold, bearing in the centre the letters I. H. S. and over them the letter Ω, the ſymbol of the Holy Virgin.

JET, Gagates, in *Natural Hiſtory*, the name of a foſſil ſubſtance, the characters of which are theſe: it is a ſolid, dry, opaque, inflammable body, found in large detached maſſes of a fine and regular ſtructure, having a grain like that of wood, ſplitting more eaſily horizontally than in any other direction, very light, and moderately hard, not fuſible, unleſs in a moderately ſtrong heat, but readily inflammable, and burning a long time with a fine greeniſh white flame, and bituminous ſmell. Its ſpecific gravity is 1.3. See *Pitch-coal* under the article Coal.

Jet has been often confounded with the common cannel coal, though a proper conſideration of their diſtinguiſhing characters is ſufficient to eſtabliſh the difference between them.

Jet is always found in detached maſſes lodged in other ſtrata; cannel coal conſtitutes of itſelf whole ſtrata. Jet has the grain of wood, and ſplits horizontally much more eaſily than in any other direction; cannel coal has no peculiar grain, and ſplits with equal eaſe any way. Jet is but moderately hard, cannel coal not leſs ſo than many ſtones; and jet, when ſet on fire, flames a long time; cannel coal but a little while. Jet is found in Italy, Germany, and the Eaſt Indies, but no where ſo plentifully as in England; it is very common in Yorkſhire, and other of the northern counties, and is found in many of our clay pits about London.

Mr. Farey remarks, that jet is perhaps only in England found imbedded in the alum ſhale ſtrata of Yorkſhire; of which numerous ſpecimens are met with in the ſhale cliffs near Whitby, and at Huntcliff and Cleveland, as Dr. Grew mentions; although the alluvial clays, and the ſands on the ſhores of moſt places on the eaſtern coaſt of England, produce ſpecimens of jet. Near Leige, and near Zuicca, in Meſena, it is found in conſiderable quantities; and on the coaſts of Baſilan or Baſſilian, one of the Philippine iſles. Mr. Mawe, in his Mineralogy of Derbyſhire, p. 92 and 93, mentions indurated bitumen found in that county which reſembles jet.

By diſtillation jet yields firſt an acid liquor, then a thin, and afterwards a thick black oil. By friction it becomes electrical, as amber does. See Amber.

Jet, in *Medicine*, was highly praiſed by the ancients, but the modern practice has never enquired whether juſtly or not. Dioſcorides tells us, that it is an excellent emollient and diſcutient; he recommends a fumigation of it for diſeaſes of the womb, and ſays, that water, in which burnt jet has been quenched, is a cordial. Aëtius orders it to be extinguiſhed in wine for the ſame purpoſe. It has been much uſed by the perfumers.

There is alſo a fictitious jet, made of glaſs, in imitation of the mineral jet: this is now uſually drawn out into long hollow threads, which are cut and faſhioned at pleaſure. It is much uſed in embroideries, and in the trimmings of mourning, and may be made of any colour, though it is uſually black and white; and of late is denominated *bugles*.

Jet *d'Eau*, a French word, ſignifying a fountain that caſts up water to any conſiderable height in the air.

The velocity of a ſmall jet of water iſſuing in any direction from a reſervoir, is nearly equal, in favourable circumſtances, to the velocity acquired by a body in falling through the height of the ſurface of the reſervoir above the orifice. Suppoſing a very ſmall plate of water, immediately within the orifice, to be put in motion at each inſtant by means of the whole preſſure of the fluid, which is equal to the weight of a column on the ſame baſe, of the height of the reſervoir; and ſuppoſing the whole preſſure to be employed in generating the velocity of the thin ſtratum, neglecting the motion of the ſurrounding fluid, this ſtratum would be urged by a force as much greater than its own weight as the column is higher than its thickneſs, through a ſpace which is ſhorter than the height of the column in the ſame ratio. But the ſpaces being inverſely as the forces, the final velocities are equal; and the velocity then generated would be equal to that of a body falling through the height of the column. And although a part of the preſſure of the column is expended in producing motion in its own particles, this part is not wholly loſt, becauſe the velocity of theſe particles renders them more eaſily actuated by the preſſure of the ſucceeding column. Still, however, ſome deduction muſt be made for the lateral motions of the neighbouring particles, which tend rather to diminiſh the quantity of the diſcharge, than to leſſen the actual velocity of the jet: the particles approaching, and even paſſing through the orifice obliquely, contract the diameter of the ſtream nearly in the ratio of 4 to 5, when the aperture is in a thin plate: but the velocity in the contracted part is only one-fortieth or one-fiftieth leſs than that which is due to the height.

Here we may obſerve, that the velocity of the diſcharge through different kinds of apertures may be found by multiplying the ſquare root of the height in feet by a certain co-efficient: this, for the undiminiſhed velocity, is 8.0229; for an orifice imitating the form of the contracted ſtream, 7.8; for bridges with pointed piers, 7.7; for bridges with ſquare piers, 6.9; for ſhort pipes, from two to four times as long as their diameter, 6.6; for orifices in a thin plate, and for weres, about 5. When the orifice is made between two reſervoirs, the diſcharge is nearly in the ſame relation to the difference of their heights.

A jet of water iſſuing from an orifice of a proper form, and directed upwards, riſes nearly to the height of the head of water in the reſervoir. For it has been ſhewn, that the velocity is nearly equal to that which is produced by the fall of a body through the height, and each of the particles may be conſidered nearly as a ſeparate projectile.

If a jet iſſue horizontally from any part of the ſide of a veſſel, ſtanding on an horizontal plane, and a circle be deſcribed having the whole height of the fluid for its diameter, the fluid will reach the plane at a diſtance from the veſſel, equal to that chord of the circle in which the jet initially moves. The horizontal velocity of the jet, being equal to that which is acquired by a body falling through the diſtance A B (*Plate* XIV. *Hydraulics*, *fig.* 1.), below the ſurface, would deſcribe, in the time of falling through A B, a diſtance equal to 2 A B (ſee Accelerated *Velocity*), and in the time of falling through B C, in which the jet will reach the horizontal plane, a diſtance greater in the ratio of thoſe times, or of the ſquare roots of the ſpaces. Call A C, 1; then 1 : A D : : A D : A B, $AD^2 = AB$, and $AD = \sqrt{AB}$; in the ſame manner $CD = \sqrt{BC}$, therefore the times are as A D and C D: but A D : C D : : A B : B D, and 2 B D, or D E, will be equal to the ſpace C F deſcribed by the horizontal velocity in the time of falling through B C. See *Hydraulic Laws of* Fluids.

Notwithſtanding what we have above ſtated with regard to the aſcent of a jet, it is well known that a jet d'eau will never raiſe water ſo high as its reſervoir; and, therefore, gives leſs water than if it went to the full height. Of this phenomenon there are ſeveral cauſes: the firſt is, that the velocity of the lower particles of the jet is greater than the velocity of the upper; and, therefore, the lower water ſtrikes that which is next above it; and as fluids move every way, by its impulſe widens and conſequently ſhortens the column. Another cauſe is, that the water at the top of the jet does not immediately fall off, but forms a kind of ball or head, the weight of which depreſſes the jet; if the jet be a little inclined, it will play higher, but be leſs beautiful: beſides, the friction againſt the ſides of the hole of the ajutage, or ſpouting-pipe, will make a ſmall jet riſe to a leſs height than a larger one from the ſame reſervoir. To remedy this inconvenience, the ſpouting holes ſhould be increaſed in proportion to the height of the ſpouting water, provided that they are not made too wide for the pipe of conduct. The fourth cauſe is the air's reſiſtance, which is proportional to the ſquare of the velocity, with which the water of the jets of different heights ſtrike it: and, therefore, the deficiency in height being in the ſame proportion, a jet that plays with a double velocity will have that deficiency four times as great, &c. Thus, if a jet of five feet high loſe one inch in height, by coming from a reſervoir of five feet one inch high, a jet produced from a reſervoir of ten feet four inches, will riſe but ten feet; and in this manner a table might be eaſily formed ſhewing by what height of reſervoirs jets of a determinate height may be produced. The following table ſhews in feet, and decimals of a foot, what jets will be produced by reſervoirs of a determinate height.

Referv.	Jet.	Referv.	Jet.	Referv.	Jet.	Referv	Jet.	Referv.	Jet.	Referv.	Jet.
5	4.91	21	20.58	39	34.93	56	48.24	73	60.71	90	72.48
6	5.88	23	21.46	40	35.74	57	48.99	74	61.42	91	73.15
7	6.84	24	22.33	41	36.55	58	49.74	75	62.13	92	73.82
8	7.80	25	23.20	42	37.35	59	50.49	76	62.84	93	74.49
9	8.74	26	24.06	43	38.14	60	51.24	77	63.54	94	75.16
10	9.68	27	24.92	44	38.93	61	51.99	78	64.24	95	75.83
11	10.62	28	25.78	45	39.75	62	52.73	79	64.94	96	76.49
12	11.55	29	26.63	46	40.53	63	53.47	80	65.64	97	77.15
13	12.48	30	27.48	47	41.31	64	54.20	81	66.33	98	77.81
14	13.40	31	28.32	48	42.09	65	54.93	82	67.02	99	78.47
15	14.31	32	29.16	49	42.87	66	55.68	83	67.71	100	79.12
16	15 22	33	30.	50	43.65	67	56.39	84	68.40	110	85.58
17	16.13	34	30.83	51	44.42	68	57.12	85	69.08	120	91.86
18	17.03	35	31.63	52	45.19	69	57.84	86	69.76	130	97.99
19	17.93	36	32.47	53	45.96	70	58.56	87	70.47	140	103 97
20	18.82	37	33.29	54	46.72	71	59.28	88	71.14	150	107.87
21	19.70	38	34.11	55	47.48	72	60.	89	71.81		

By various experiments that have been made by Mr. Mariotte, Dr. Deſaguliers, and others, it has been found, that if the reſervoir be five feet high, a conduct-pipe $1\frac{3}{4}$ inch diameter will admit a hole in the ajutage from $\frac{1}{4}$ of an inch to $\frac{3}{8}$ of an inch; and ſo on as in the following table:

Height of Reſervoir.	Diameter of the Ajutage.	Diameter of the Pipes of Conduct.
5 Feet	$\frac{1}{4}$ to $\frac{3}{8}$	$1\frac{3}{4}$ inch.
10	$\frac{1}{4}$th to $\frac{1}{2}$ an inch	2 inches.
15	$\frac{1}{2}$ an inch	$2\frac{1}{2}$ inches.
20	$\frac{1}{2}$ an inch	$2\frac{1}{2}$ inches.
25	$\frac{1}{2}$ an inch	$2\frac{3}{4}$ inches.
30	$\frac{1}{2}$ to $\frac{3}{4}$ of an inch	3 inches, or $3\frac{1}{2}$.
40	$\frac{3}{4}$ of an inch	$4\frac{1}{2}$ inches.
50	$\frac{3}{4}$ of an inch	5 inches.
60	1 inch	$5\frac{3}{4}$ inches or 6.
80	$1\frac{1}{4}$ inch	$6\frac{1}{2}$ inches or 7.
100	$1\frac{1}{4}$ or $1\frac{1}{2}$ inch	7 or 8 inches.

Here the jet is ſuppoſed to be within 100 or 150 yards of the reſervoir; but if the conduct-pipe much exceeds this length, it muſt be of a larger diameter than what is here aſſigned. Thus for jets from $\frac{3}{4}$ of an inch to thoſe of an inch and $\frac{1}{4}$, and from reſervoirs from 40 to 90 feet height, if the diſtance be from 150 yards to $\frac{1}{4}$ of a mile, the diameter of the pipe ſhould be of ſix inches; from $\frac{1}{4}$ of a mile to two miles, it muſt be of ſeven inches; and from two miles to five, it muſt be of eight inches diameter for the ſame jet.

If it be required to keep any number of jets playing whoſe ajutages are given in diameter, by one common conduct-pipe, we muſt find the diameter of an ajutage equal to all the given ones. Thus if there be four ajutages of $\frac{3}{4}$ of an inch diameter each, then the ſquare of $\frac{3}{4}$ is $\frac{9}{16}$, which multiplied by the number of ajutages 4, makes $\frac{36}{16}$: the ſquare root of which is $\frac{6}{4} = 1\frac{1}{2} =$ the diameter of the ajutage equal to all the four ſmall ones. A pipe of conduct of 10 inches diameter will ſupply all the jets, as being a little more than ſix times as great as the diameter of the one large ajutage now found. After this manner the dimenſions of a conduct-pipe may be found in any other number of ajutages.

In order to make a jet play to the greateſt poſſible height, the part of the conduct-pipe at the ajutage ſhould not turn up at right angles, but with a gentle eaſy curve: for the beſt ſtructure of the ajutage, ſee AJUTAGE. See alſo FOUNTAIN. Deſaguliers' Courſe of Exp. Phil. vol. ii. lect. vii. annot.

JET *Rings*, annular pieces of jet of large dimenſions, found in many parts of England, and eſteemed Roman antiquities. They are of different kinds; ſome being plain, others wrought, but all of them are much too large for rings. The ſmalleſt of them are three inches in diameter; yet the bore is not above an inch and a half, which makes them as much too ſmall for the wriſt as they are too large for the fingers.

JETAIBA, in *Botany*, a name given by ſome authors to the trees which afford the gum anime of the ſhops.

JETANS, or CAMANCHES, as the Spaniards call them, or *Padoucas* as they are denominated by the Pawnees, in *Geography*, a powerful nation, entirely erratic, without the leaſt ſpecies of cultivation, ſubſiſting ſolely by the chaſe. Their wanderings are confined to the frontiers of New Mexico on the W., the nations on the Lower Red river on the S., the Pawnees and Oſage on the E., and the Utahs, Kyaways, and various unknown nations on the N. Their nation, although entirely in the territories of the United States, is claimed excluſively by the Spaniards, and may be ſaid to be decidedly in their intereſt. They are the only nation who border on the Spaniſh ſettlements, which that government treats as an independent people. They are by the Spaniards reputed brave.

JETHLAH, or Jethala, in *Ancient Geography*, a town of Paleſtine, in the tribe of Dan. Joſh. xix. 1, 2.

JETPOUR, in *Geography*, a town of Hindooſtan, in Guzerat; 10 miles N. of Junagur.

JETSON. See Flotson.

JETTY, in *Enginery*, is the name for a ſmall pier or projection into a river, for narrowing it and raiſing the water above that place. See Tranſactions of the Society of Arts, vol. xxiv.

Jetty-*head*, in the *Royal Dock yards*, is a name uſually given to that part of a wharf which projects beyond the reſt; but more particularly the front of a wharf, whoſe ſide forms one of the cheeks of a wet or dry dock.

JETZ, in *Geography*, a town of Japan, in the iſland of Niphon; 84 miles N.N.E. of Meaco.

JEU, *Fr.* in *Muſic*, the action of playing upon an inſtrument. See Jouer.

Plein-jeu and *demi-jeu* are often uſed by the French for *forte* and *piano*.

JEVER, in *Geography*, a town of Germany, and capital of a country called "Jeverland," ſituated in the N.E. part of Eaſt Frieſland, on the W. ſide of the mouth of the Weſer, which belongs to the prince of Anhalt-Zerbſt; 28 miles N.E. of Emden. N. lat. 53° 30′. E. long. 7° 53′.

JEUNE, Claude le, in *Biography*. See Claudin.

JEUREV-POLSKAI, in *Geography*, a town of Ruſſia, in the government of Vladimir; 32 miles N.N.W. of Vladimir.

JEUX, *Fr.* See Games.

Jeux *d'Orgues*, *Fr.* ſtops of an organ.

Preſtant	uniſon with the	Open diapaſon,
Bourdon	double baſe	Borduun,
Bombarde	baſe to the hautbois	Baſſoon,
Nazard	octave of the 5th	Twelfth,
Tierce	double octave of the ſharp 3d	Tierce,
Larigot		Octave of the twelfth,
Voix angelique	octave of the	Vox humana.

Many of the names of ſtops in French organs are the ſame as in Engliſh organs built by Renatus Harris ſoon after the reſtoration: ſuch as the flute, tierce, larigot, cornet, furniture, trumpet, vox humana, or voix humaine, cromorne, clarion, &c. We ſhall give Engliſh equivalents to the reſt in the article Organ, where will be found a liſt of the ſtops in the famous organ at Haerlem.

JEW-Bill, in *Law*, is the famous ſtatute 26 Geo. II. cap. 26. which enabled all Jews to prefer bills of naturalization in parliament, without receiving the ſacrament, as ordained by ſtat. 7 Jac. I. This act was repealed by 27 Geo. II. c. 1.

JEWEL, any precious ſtone, or ornament beſet with them. (See Diamond, Ruby, &c.) The uſe of jewels prevailed to a great degree, and at an enormous expence, among the Jews, Greeks, and Romans; and has continued in various nations to this day.

Jewel, John, in *Biography*, a learned prelate of the church of England, and zealous champion for the Proteſtant cauſe, deſcended from a very reſpectable family, was born at Buden, in Devonſhire, in the year 1522. He received at different ſchools, in his own county, the elements of a learned education, and before he was fourteen years of age we find him at Merton college, Oxford, where he made great progreſs in the learning of the place, and was at the ſame time initiated in the principles of the reformed religion. In the year 1539, he removed to Corpus Chriſti college, of which he had been elected a ſcholar, and in the following year he took his firſt degree. Soon after this he commenced tutor with high reputation, and contributed much to promote the reformation, by privately inſtructing his pupils in Proteſtant principles. Mr. Jewel, at this period, though looked up to by his contemporaries on account of his great learning, was not more celebrated for his literary acquirements, than he was for eminent piety, and the exemplarineſs of his manners. In 1544, he was admitted to the degree of M.A., and upon the acceſſion of Edward VI. in 1546, he openly avowed himſelf a Proteſtant, and embraced every opportunity which offered itſelf to promote the progreſs of the reformation, both in his college lectures, and in private converſation. He obtained ſome church preferment, and his talents as a preacher procured for him great acceptance, and general applauſe. The zeal which he diſplayed during the whole of king Edward's reign, to diſſeminate Proteſtant principles, occaſioned his being one of the firſt victims to the reſentment of the Papiſts upon the acceſſion of queen Mary: he was immediately expelled from his college, but ſo high did he ſtand for real talent, that he was at the ſame time appointed the orator of the place, and actually employed to draw up a congratulatory addreſs upon the acceſſion of the new queen. It has indeed been thought, that this appointment was intended for the purpoſe of enſnaring him, either by rendering him odious to his own party, if he accepted it, or by provoking the enmity of the Catholics, if he refuſed it. Mr. Jewel, however, diſappointed his enemies, for the addreſs which he drew up on the occaſion was worded by him in ſuch reſpectful and guarded terms, that it gave no offence to either party, and was favourably received by the queen. Mr. Jewel now withdrew from the impending ſtorm, but his enemies followed him, and being urged with the threat of a cruel death, his fortitude forſook him, and he ſigned his belief of doctrines which his underſtanding rejected, and his heart abhorred. This public declaration was of but little ſervice to him, his enemies thirſted for his blood, and the furious Bonner was reſolved, if poſſible, to attain the object of his wiſhes, but after encountering a thouſand hair-breadth eſcapes, he was ſafely landed on the Continent, and thus freed from the perils which threatened him. He immediately proceeded to Frankfort, and made a public confeſſion before the Engliſh exiles in that city of his ſincere contrition on account of his late ſubſcription, begging pardon of God, and of the church, for the weakneſs which he had diſcovered in that tranſaction. After a ſhort ſtay at Frankfort, he went to reſide with his old friend Peter Martyr at Straſburg, whom he accompanied to Zurich, where he aſſiſted him in the publication of ſome of his writings, and in the compoſition of his theological lectures. On the death of queen Mary, Mr. Jewel returned to his native country, and was graciouſly received by queen Elizabeth, who appointed him one of the ſixteen divines ſelected to hold a public diſputation in Weſtminſter abbey, upon the principal points of controverſy between the Proteſtants and Papiſts. He was alſo commiſſioned with others to viſit certain dioceſes in the weſtern parts of England, with the view of eradicating Popery from them, and, in the year 1560, he was promoted by his ſovereign to the biſhopric of Saliſbury. He was inceſſant in the work attached to his office, and was literally worn out in the duties which he conceived to belong to the paſtoral office. He died in September 1571, at Monkton-Farley, in Wiltſhire, when he was in the fiftieth year of his age: he was author of a vaſt number of works, many of which are ſtill held in high eſtimation. They were collected and printed uniformly in 1609, and ſome of his letters are preſerved in Biſhop Burnet's Hiſtory of the Reformation. He was one of the moſt eminent ſcholars among the reformers: was a great proficient in the learned and in ſome of the modern languages: he had a ſtrong memory, which he ſo improved by art, that he was able to repeat moſt exactly what he had written after once reading it. Biog. Brit.

Jewel-*Blocks*, in a *Ship*, are two ſmall blocks, which are ſuſpended at the extremity of the main and fore-top-ſail-yards, by means of an eye-bolt, driven from without into the middle of the yard-arm, parallel to its axis. The uſe of theſe blocks is to retain the upper part of the top-maſt-ſtudding-ſails beyond the ſheets of the top-ſails, ſo that each of theſe ſails may have its full force of action, which would be diminiſhed by the incroachment of the other over its ſurface.

JEWISH Believers, in *Eccleſiaſtical Hiſtory*. See Ebionites and Nazarenes.

Jewish *Canon*. See Canon.

Jewish *Œconomy*. See Œconomy.

Jewish *Hours*. See Hours.

Jewish *Muſic*. See Hebrew *Muſic*.

Jewish *Nation*. See Hebrews.

JEWIT, Randal, or Randolph, in *Biography*, a diſciple of Orlando Gibbons, and bachelor of muſic in the univerſity of Dublin, was organiſt of Chriſt-church in that city, where he was ſucceeded by Bateſon.

In 1639, Jewit reſigned his place at Dublin, where his ſucceſſor was Benjamin, afterwards Dr. Rogers; and returning to England, he was appointed organiſt of Wincheſter, where he died after having acquired great eſteem for ſkill in his profeſſion.

JEW's Ear. See Auricula *Judæ*.

Jew's *Frankincenſe*, in *Botany*. See Styrax.

Jew's *Mallow*. See Corchorus.

Jew's *Stone*, in *Natural Hiſtory*. See *Lapis* Judaicus.

Jew's *Stone*, in *Mining*, ſignifies baſalt, win, or trap, in the collieries of Shropſhire. See Plymley's Report on the Agriculture of that County, p. 61, &c.

JEWS, in *Geography* and *Hiſtory*, an appellation which, in its moſt extenſive ſenſe, comprehends all the deſcendants of the celebrated patriarch Abraham, who was the father and founder of the Jewiſh nation; but, in its more reſtricted ſenſe, it includes thoſe who belonged to the tribe of Judah, and who inhabited Judea. Although they have been uſually diſtinguiſhed by this denomination, it is a name that was not given them till after the Babyloniſh captivity, when the tribe of Judah became the moſt conſiderable of what was left of Iſrael. In preceding times they were denominated Iſraelites, or more commonly Hebrews. For the etymology of this latter appellation, ſee Heber. Under this title they occupied the *Land of* Canaan, (which ſee,) whither their progenitor Abraham had migrated, and where he ſettled in the year B.C. 1921. (See Abraham.) The ſubſequent poſſeſſors of it were the Iſraelites, ſo denominated from the name of Jacob, among whoſe 12 ſons, forming ſo many diſtinct tribes, it was partitioned in the manner already ſtated under the article *Land of* Canaan. (See alſo Judah, Judea, and Palestine.) When the patriarchal government, which ſeems to have ſubſiſted in the early ages of the world, became impracticable (ſee Patriarchal); the form of the Hebrew government underwent a material change, and was ſubject to various revolutions from the commencement of the national polity of the people of Iſrael, or Jews, to its final diſſolution. While they ſojourned in Egypt, it is natural to imagine, that as long as Jacob and Joſeph lived, they were their own maſters, and were governed by their own laws; and though they were afterwards enſlaved by the Egyptians, they nevertheleſs had ſome form of civil government among them, exerciſed by perſons under the denomination of Elders; who are ſuppoſed to have been the wiſeſt and graveſt men, in the higheſt eſteem among them, or, as Mr. Selden conjectures, the heads of their tribes. During their migration through the wilderneſs, from Egypt to Canaan, the Theocracy was eſtabliſhed. (See Theocracy.) As God was their king, Moſes was his viceroy, in whom the ſupreme power, eccleſiaſtical as well as civil, under God, was lodged. By him Aaron and his ſons were put into the prieſthood; the royal palace, or tabernacle, was built by his direction; by him it was conſecrated; he gave the nation the whole body of their laws; he was commander-in-chief of all their forces. Whatever Moſes did, he did by commiſſion from God; and though he was only God's lieutenant or viceroy, he was, on account of an authority, which he held only in ſubordination to God, called king in Jeſhurun. (Deut. xxxiii. 5.) Upon the entrance of the Iſraelites into the land of Canaan, B.C. 1451, under the conduct of Joſhua, he became, in conſequence of an oracular appointment, and in conſequence of having been inveſted with the office, while Moſes was living, the ſucceſſor of Moſes. (Numb. xxvii. 15—23.) And after his death, the people acknowledged Joſhua for his ſucceſſor, ſtipulating to render him that obedience which they had paid to Moſes. (Joſh. i. 16, 17.) In the year B.C. 1445, Joſhua divided the land of Canaan among the 12 tribes; and died in the year B.C. 1426. Some have ſaid that Joſhua was ſucceeded by the Judges. But it has been doubted, and not without reaſon, whether the Judges were properly ſucceſſors to Joſhua in the ſame office, as he had been to Moſes. The legiſlative office which Moſes had poſſeſſed having expired at his death, ſo, it is ſaid, did the office of Joſhua, as "præfectus ordinarius," and captain-general for his life, at his. Upon this the Hebrew government became ariſtocratical; excepting that, in reſpect to the peculiar ſupremacy of Jehovah, it was monarchical. In the Hebrew commonwealth every city had its elders, who formed a court of judicature, with a power of determining leſſer matters in their reſpective diſtricts. Each tribe had alſo its reſpective prince; theſe are called the heads of the thouſands of Iſrael (Numb. x. 4.), and were, perhaps, the ſame with the 12 captains of the hoſt, mentioned in the 2d chapter of Numbers; and their office, therefore, related chiefly, if not entirely, to military affairs. We alſo read of the princes of the congregation, who preſided in judiciary matters. (Numb. xxxii. 2. Joſh. ix. 15. xvii. 4.) They are called elders, princes, and nobles, on account of the dignity of their office (Exod. xxiv. 9. 11.), and they were 70 in number. (Numb. xi. 16, 17. 24, 25.) See Sanhedrim. As for the judges, of whom we read after the death of Joſhua, they ſeem to have been appointed only on particular occaſions; but were not "præfecti ordinarii," like Moſes and Joſhua; nor were they continued in their office during life, but only as long as there was occaſion for their ſervice. (See Judges.) The firſt of theſe judges was Othniel, who, in the year B.C. 1405, the 40th year after the peace eſtabliſhed in the land by Joſhua, gave reſt to Iſrael. The 2d judge was Ehud the Benjamite, B.C. 1325; he was ſucceeded by Deborah the propheteſs, B.C. 1285, who with Barak the general of the Iſraelites defeated the Canaanites under Siſera: the 4th judge was Gideon, B.C. 1245, who routed the Midianites, but declined the offer of kingly power: the 5th judge was Tola, B.C. 1233: the 6th was Jair, B.C. 1210: the 7th was Jephthah, B.C.

1188; the 8th was Ibzan, B.C. 1182; the 9th was Elon, B.C. 1175; the 10th was Abdon, B.C. 1165; the 11th was Eli, the high prieſt, B.C. 1157; the 12th and laſt judge was Samuel, B.C. 1116. (See CAPTIVITY.) We have here followed the chronology of Blair's Tables. The Judges were ſucceeded by kings, who were of two ſorts; *viz.* thoſe that reigned over the whole Hebrew nation, and who were only three, Saul, David, and Solomon; and thoſe that reigned over ſome of the tribes only. Saul began his reign in the year B.C. 1095, and having reigned 40 years, was ſucceeded by Iſhboſheth his ſon, who reigned ſeven years over part of Iſrael; and had for his ſucceſſor David, who was anointed to be king after Saul by Samuel, B.C. 1093, and who became ſole king, B.C. 1048. Having reigned wholly and in part 40 years, he was ſucceeded by his ſon Solomon, B.C. 1015, who died B.C. 975. After his death the kingdom was divided. The kings of the houſe of David, beginning with Rehoboam, were 20 in number, if we reckon Athaliah the queen, who uſurped the throne for ſix years, after the death of her ſon Ahaziah. (2 Kings, xi.) Theſe kings reigned over the two tribes of Judah and Benjamin, until Nebuchadnezzar carried Zedekiah, the laſt of them, captive to Babylon, B.C. 587. They took their title from the larger tribe, and were called kings of Judah. The kings of Iſrael, who reigned over the other ten tribes, from the time of their rebellion againſt Rehoboam, the ſon of Solomon, to the Aſſyrian captivity, were of ſeveral different families, and were in all 19 from Jeroboam, the firſt, B.C. 975, to Hoſea or Hoſhea, the laſt, B.C. 721, when the Iſraelites were carried into captivity, and their kingdom terminated after a duration of 253 years.

As the Hebrew nation was divided into two diſtinct kingdoms, ſo each kingdom ſuffered a diſtinct captivity; the one called the Aſſyrian, the other the Babyloniſh. For an account of each, ſee CAPTIVITY.

When Cyrus, having conquered Babylon, and almoſt all the weſtern parts of Aſia, iſſued a decree B.C. 536, for the return of the Jews from their captivity and the rebuilding of their temple; many of them, particularly of the tribes of Judah and Benjamin, gladly availed themſelves of the liberty; and ſome, even of the ten tribes, joined themſelves to the reſt, and returned with them to their own land. Many, however, choſe to remain where they were; and indeed had been already ſo widely diſperſed, during the years that had elapſed ſince the Aſſyrian captivity and formed permanent ſettlements, that they had neither opportunity nor inclination for returning with their brethren. Many enquiries have been made concerning the diſperſed Jews of the ten tribes; and it has been till of late a prevalent opinion, that they were either wholly loſt, or that they had at different times found their way in detached bodies to their own country. In conſequence of ſome late diſcoveries, there is reaſon to believe, that they ſtill exiſt in various parts of the Eaſt. Under the articles AFGHANS and CAPTIVITY, we have already ſtated the reſult of ſome enquiries with reſpect to the Jews of theſe tribes; and we have derived farther information from the reſearches of the Rev. Dr. Claudius Buchanan, lately publiſhed, Cambridge, 1811. Whilſt this author was in the Eaſt, he heard that Jews exiſted in diſtinct colonies in certain parts of India; that ſome of them had arrived there long before the Chriſtian era, and had remained in the midſt of the Hindoos to this time a diſtinct and ſeparate people, perſecuted by the native princes from age to age, and yet not deſtroyed. The author alſo noticed the exiſtence of an ancient colony of Jews on the coaſt of Malabar, particularly at Cochin. Being at Cochin in February 1807, he formed an acquaintance with the Jews; and found that they live in a town about a mile diſtant from Cochin, called "Jews' Town." It is almoſt wholly inhabited by the Jews, who have two reſpectable ſynagogues. Jews from remote parts of Aſia reſide here, and as they have conſtant communication by ſhips with the Red ſea, the Perſian gulf, and the mouths of the Indus, this place is the fountain of intelligence concerning that people in the Eaſt. The reſident Jews are divided into two claſſes, called the "Jeruſalem or White Jews," and the "Ancient or Black Jews." The former reſide at this place; the latter have alſo a ſynagogue here, but the great body of that tribe inhabit towns in the interior of the province. With regard to the hiſtory of the White Jews, our author obtained a written narrative, in the Hebrew language, of their arrival in India, which has been handed down to them from their fathers; and they exhibited to him an ancient braſs plate, containing their charter and freedom of reſidence, given by a king of Malabar. Of their firſt arrival this narrative records, that after the deſtruction of the ſecond temple, their fathers, dreading the conqueror's wrath, departed from Jeruſalem, a numerous body of men, women, prieſts, and Levites, and came into this land. They had among them men of reputation for learning and wiſdom; and God gave the people favour in the ſight of the king who then reigned here, and he granted them a place to dwell in, called "Cranganor." He allowed them certain privileges, and the royal grant was engraved on a plate of braſs. This was done in the year from the creation of the world 4250 (A.D. 490); and this plate of braſs is ſtill in their poſſeſſion. "Our forefathers," they ſay, "continued at Cranganor for about 1000 years, and the number of heads who governed were 72. Soon after our ſettlement, other Jews followed us from Judea; and among theſe came that man of great wiſdom, Rabbi Samuel, a Levite of Jeruſalem, with his ſon Rabbi Jehuda Levita. They brought with them the "ſilver trumpets," made uſe of at the time of the "Jubilee," which were ſaved when the ſecond temple was deſtroyed; and we have heard from our fathers, that there were engraven upon thoſe trumpets the letters of the ineffable name. There joined us alſo from Spain and other places, from time to time, certain tribes of Jews who had heard of our proſperity. But at laſt, diſcord ariſing among ourſelves, one of our chiefs called to his aſſiſtance an Indian king, who came upon us with a great army, deſtroyed our houſes, palaces, and ſtrong holds, diſpoſſeſſed us of Cranganor, killed part of us, and carried part into captivity. By theſe maſſacres we were reduced to a ſmall number. Some of the exiles came and dwelt at Cochin, where we have remained ever ſince, ſuffering great changes from time to time," &c. &c. The native annals of Malabar confirm the foregoing account in the principal circumſtances; as do the Mahometan hiſtories of later ages; for the Mahometans have been ſettled here in great numbers ſince the eighth century.

Our author farther informs us, that by looking at the countenance of the "Black Jews," you may be ſatisfied that their anceſtors muſt have arrived in India many ages before the "White Jews." Their Hindoo complexion, and their very imperfect reſemblance to the European Jews, indicate that they have been detached from the parent ſtock in Judea many ages before the Jews in the Weſt; and that there have been intermarriages with families not Iſraelitiſh. The White Jews look upon the Black Jews as an inferior race, and as not of a *pure* caſt; and this circumſtance plainly demonſtrates, that they do not ſpring from a common ſtock in Judea. The Black Jews gave our author much intereſting information; and recounted the names of many other ſmall colonies reſident in Northern India, Tartary, and China, and gave a written liſt of 65 places. Upon inquiring of them concerning the ten tribes, they ſaid that it was commonly believed among them, that the great body of the Iſraelites are to be found in Chaldea, and in the countries contiguous to it; being the very places whither they were firſt carried into captivity; that ſome few families had migrated into regions more remote, as to Cochin and Rajapoor in India, and to other places yet farther to the Eaſt; but that the bulk of the nation, though now much reduced in number, had not to this day removed 2000 miles from Samaria. Our author afterwards made a tour through the towns of the Black Jews, in the interior of the country, Tritoor, Paroor, Chenotta, and Maleh; and he found many MSS., chiefly in the Rabbinical character. One of theſe is an old copy of the books of Moſes, written on a roll of leather. The ſkins are ſewed together, and the roll is about 48 feet in length. Some of the Jews ſuppoſe that this roll came from Senna, in Arabia; others have heard that it was brought from Caſhmire. The Cabul Jews, who travel into the interior of China, ſay, that in ſome ſynagogues the law is ſtill written on a roll of leather made of goats' ſkins dyed red; not on vellum, but a ſoft flexible leather.

Whilſt our author was amongſt the Jews of Malabar, he made frequent inquiries concerning the ten tribes. When he mentioned, that it was the opinion of ſome that they had migrated from the Chaldean provinces; he was aſked to what country we ſuppoſed they had gone, and whether we had ever heard of their moving in a great army on ſuch an expedition. It will be eaſy perhaps to ſhew that the great body of the ten tribes remain to this day in the countries to which they were firſt carried captive. We learn from Joſephus, who lived in the time of Veſpaſian, and who recites a ſpeech made by king Agrippa to the Jews, exhorting them to ſubmit to the Romans; that the ten tribes were then captive in Media under the Perſian princes: and Jerome, in the fifth century, treating of the diſperſed Jews in his notes on Hoſea, ſays, unto this day the ten tribes are ſubject to the kings of the Perſians, nor has their captivity ever been looſed. And again, the ten tribes inhabit at this day the cities and mountains of the Medes. No family dares to leave the kingdom of Perſia without permiſſion of the king. In the provinces of Caſhmire and Affghaniſtan, ſome of the Jews ſubmitted to great ſacrifices, and remain Jews to this day; but the greater number yielded, in the courſe of ages, to the power of the reigning religion. Their countenance, their language, their names, their rites and obſervances, and their hiſtory, all conſpire to eſtabliſh the fact. Mr. Forſter (Travels) was ſo much ſtruck with the general appearance, garb, and manners of the Caſhmirians, as to think, without any previous knowledge of the fact, that he had been ſuddenly tranſported among a nation of Jews. The tribes of the Affghan race are very numerous, and of different caſts, extending on both ſides of the Indus, and the mountainous region, which commences in Weſtern Perſia; ſome of theſe tribes are evidently of Jewiſh extraction. Our author, however, concludes upon the whole, that the greater part of the ten tribes, which *now exiſt*, is to be found in the countries of their firſt captivity. But to return from this digreſſion——.

Although ſome of the ten tribes returned on the occaſion above-mentioned, moſt of them remained among the heathens. This appears to have been the caſe in the reign of Artaxerxes Longimanus, ſuppoſed by Pridcaux to be the Ahaſuerus mentioned in the book of Eſther, and this muſt have been nearly eighty years after their firſt return in the reign of Cyrus, B. C. 458. It was at this time that Ezra obtained an ample commiſſion from Artaxerxes for his return to Jeruſalem, with all of his own nation who were willing to accompany him. (Ezra, ch. vii.) Upon this many more of the Jews returned to their own land. Nevertheleſs, few of the ten tribes, in compariſon of thoſe of Judah and Benjamin, ever returned from their diſperſion. It appears, that at the time of Haman's conſpiracy, probably four or five years after the ſecond return under Ezra, there was a multitude of the Jews diſperſed through the various provinces of the Perſian empire; beſides thoſe who had mingled with idolaters and embraced their religion. Ezra, who was governor of the Jews in their own land for thirteen years, was ſucceeded by Nehemiah, who had a new commiſſion granted him by Artaxerxes in the 20th year of his reign, B. C. 445, with full authority to repair the wall of Jeruſalem, and to fortify it in the ſame manner as before it was diſmantled by the Babylonians.

The Jews, who, after the return from the captivity, were ſettled again in their own land, were no longer divided into two kingdoms, but formed one people under one government, which varied in its form through ſeveral ſucceeding ages. Upon their return from the captivity, Judea became a province of Syria, tributary to the ſovereign of the Perſian empire. But though tributary, the Jews enjoyed their own religion, and were governed by their own laws; and their governors, though they acted by virtue of a commiſſion from the court of Perſia, were, nevertheleſs, of their own nation; as Zerubbabel, Ezra, and Nehemiah; ſo that the adminiſtration of the Jewiſh ſtate was committed to their high-prieſts. This ſtate of things, and this form of government, continued for upwards of 200 years, until the time of Alexander the Great, who, having deſtroyed the Perſian empire, B.C. 331, and eſtabliſhed the Grecian univerſal monarchy, reduced the Jews into a ſtate of ſubjection to him and his ſucceſſors. But they were not properly conquered by him, as the other nations were; but obtained his protection in the ſingular manner related by Joſephus, Antiq. l. xi. c. 8. 5. 3—5. edit. Havre. (See JERUSALEM.) Jaddua, the Jewiſh high-prieſt, having ingratiated himſelf with Alexander by his prudent conduct, and by ſhewing him the prophecy of Daniel, which predicted the overthrow of the Perſian empire by a Grecian king, and being ordered to requeſt on behalf of the Jews whatever was agreeable to them, petitioned that they might enjoy their own laws and religion, and be excuſed from paying tribute every ſeventh year, becauſe in that year they neither ſowed nor reaped. All this was freely granted by Alexander. After the death of Alexander, the Jews became ſubject and tributary to the kings of Egypt or Syria, as by various events one or the other extended their dominion to Judea, which lay between theſe two countries. After a ſevere conteſt, Judea was ſubdued by Ptolemy, and 100,000 Jews were made captive; but afterwards, reflecting on their accuſtomed fidelity to their conquerors, he reſtored to them all the privileges which they had enjoyed under the Macedonians. Five years after the ſubjugation of Judea by Ptolemy, he was forced to ſurrender it to Antigonus, the Macedonian general, who treated the Jews in a manner ſo tyrannical, that many of them fled into Egypt, and others put themſelves under the protection of Seleucus Nicator, king of Syria, who granted them conſiderable privileges. At this time Judea ſeemed to be in danger of depopulation, till it was recovered by Ptolemy Soter in the year B C. 292. The proſperity of the Jews, however, was of ſhort duration; for under the reign of Ptolemy Philopator they were grievouſly oppreſſed by the incurſions of the Samaritans, whilſt Antiochus Theos, king of Syria, invaded Galilee. Antiochus, however,

ever, was defeated by Ptolemy, who, being reſiſted by the Jews in his attempt to profane the temple, raiſed againſt them a dreadful perſecution; but this perſecution being ſtopped, the Jews were again received into favour. When Ptolemy Epiphanes ſucceeded his father Philopator, B.C. 204, Antiochus, the great king of Syria, invaded Paleſtine; and the Jews, unmindful of their obligations to the kings of Egypt, joined the invader. In recompence of the ſervices which they rendered him, Antiochus propoſed to reſtore their metropolis to its ancient ſplendour, liberty, and privileges, and to recal all thoſe Jews who had been driven out of it; and from ſingular reſpect to the temple of their God, he granted them 20,000 pieces of ſilver towards the charges of their worſhip, 1400 meaſures of fine wheat, and 375 meaſures of ſalt, for their uſual oblations. He alſo declared his intention to repair the temple at his own coſt, to allow them the free exerciſe of their religion, to reſtore the public ſervice, and the prieſts, Levites, &c. to their uſual functions; and beſides other privileges which he conferred upon them, he granted an exemption from all taxes for three years to all the diſperſed Jews that ſhould come within a limited time to repeople that metropolis. By theſe and other extraordinary favours, Antiochus ſo attached the Jews to his intereſt, that Judea, and the other neighbouring provinces, readily ſubmitted to him. Upon the death of Antiochus, their friend and protector, B.C. 187, they found as kind a patron in his ſon and ſucceſſor, Seleucus Philopator. Judea at this time enjoyed a profound peace, and their laws were obſerved with great ſtrictneſs under their worthy high-prieſt, Onias III., until a miſunderſtanding, which occurred between him and Simon, a Benjamite, who had been made governor of the temple, brought a ſeries of evils on the Jewiſh ſtate. Simon treacherouſly communicated information to Seleucus, that the temple of Jeruſalem contained immenſe treaſures, which might be ſeized for his uſe. Heliodorus was diſpatched to Jeruſalem for this purpoſe; and having acquainted Onias with the king's orders, which he was commiſſioned to execute, the prieſt remonſtrated, and endeavoured to diſſuade him from any attempt of this kind. Heliodorus, however, endeavoured to force the temple, but whilſt the Syrians were endeavouring to enter, they were ſmitten with ſuch a panic, that they fell down half-dead. When the traitor Simon found that he had miſſed his aim, he laid the whole blame on the good high-prieſt, pretending that he was the perſon who had called Heliodorus to Jeruſalem, and thus raiſed a party againſt him. Onias, fearing the conſequences of ſuch a faction, went to Antioch to complain of this outrage to the king. He was well received, and Simon was baniſhed; but Seleucus, dying ſoon after, B.C. 175, was ſucceeded by his ſon Antiochus Epiphanes, generally ſuppoſed to be that "vile perſon," of whom Daniel propheſied under that appellation (chap. xi. 21, &c.), and he actually proved altogether as profane and cruel as the prophet repreſents him; for he laid ſiege to Jeruſalem, and took it by ſtorm, and in the courſe of two days maſſacred 40,000 of its inhabitants, and ſold as many more to the neighbouring nations for ſlaves. He impiouſly found his way into the temple, and into the holy of holies; he ſacrificed a great ſow upon the altar of burnt-offerings, and cauſed broth to be made of ſome part of the fleſh, and to be ſprinkled all over the temple. He afterwards plundered the ſacred edifice of all its golden and ſilver veſſels and utenſils, to the value of 1800 talents of gold; and having made a ſimilar plunder in the city, he left it, after he had, to the further vexation of the Jews, appointed Philip, a Phrygian, to be their governor, who was a man of a cruel and barbarous temper; and the apoſtate Menelaus, the brother of Onias, who had been baſely murdered, in the poſſeſſion of the high prieſthood, B.C. 170. It would be tedious to enumerate the horrid acts of cruelty which were committed under the authority and direction of Antiochus, than whom we cannot conceive a greater monſter of barbarity. Not ſatisfied with the ſavage and brutal meaſures that were executed againſt the Jews, he determined either totally to aboliſh their religion, or to exterminate their whole race. Accordingly he iſſued a decree, that all nations within his dominions ſhould conform to his religion, and worſhip the ſame God, and in the ſame manner that he did, under the ſevereſt penalties. This decree being levelled chiefly againſt the Jews, he ſent commiſſioners to execute it in Judea. One of theſe, named Apelles, came to Modin, where dwelt Mattathias, a very honourable prieſt, and zealous for the law of his God; he was the great-grandſon of Aſmonæus, from which circumſtance the family probably derived the name of Aſmonæans. This Mattathias, with his five ſons, were tempted, by the moſt ample promiſes of protection and favour, on the part of the king, to renounce their religion. But he contemned the offer, and magnanimouſly declared, that if the whole Jewiſh nation, and even the whole world, were to conform to the king's edict, he and his ſons would continue faithful to their God to the laſt moment of their lives. At the ſame time, perceiving one of his countrymen juſt going to offer ſacrifices to an idol, he fell upon him and inſtantly killed him, agreeably to the requiſition of the Moſaic law in caſes of that kind. Upon this, his ſons, actuated by ſimilar zeal, killed the king's officer and his men; overthrew the altar and idol; and running about the city, cried out, that thoſe who were zealous for the law of God ſhould follow them. They then retired into the mountains, whither they were followed by many of the Jews; and having there formed an army, ſtood upon their defence. Afterwards, leaving their faſtneſſes, they went about the country deſtroying the heathen altars and idolaters, and reſtoring the worſhip of God according to the law, wherever they came. Mattathias, who died B.C. 166, was ſucceeded by his ſon Judas, ſurnamed Maccabeus (ſee Maccabees), who was one of the moſt diſtinguiſhed heroes of whom the Jews can boaſt. His army conſiſted only of 6000 men: but the deficiency of number he ſupplied by his zeal and bravery. Of his ſignal exploits and various conqueſts, we cannot here give a minute detail. It muſt ſuffice to obſerve, that having rid the province of Judea of the enemy, he marched to the metropolis, purified the city and temple, reſtored the altars, holy place, and worſhip; commencing the religious ſervice with the dedication of the new altar, and other holy utenſils, which was performed on the 25th day of the month Ciſleu; the ſame day in which it had ceaſed by the profanation of the temple three years before, and in the ſecond year of Judas's government. The news of Judas's ſucceſs exaſperated Antiochus Epiphanes almoſt to madneſs; and he ſtill retained his purpoſe of extirpating the Jewiſh race. But he had ſcarcely uttered his purpoſe, before he was ſeized with a pain in his bowels of the moſt excruciating nature, and this diſeaſe, accompanied with ſtill more agonizing reflections and feelings of mind, terminated in his death, B.C. 164. Judas ſtill purſued his ſucceſsful military operations; till at length the Syrians were under a neceſſity of ſuing for peace, B.C. 163. This year, in Blair's Tables, is the era of the government of Judea by the Aſmoneans or Maccabees, which laſted 126 years. The peace between the Syrians and Judas was of ſhort duration. Upon the renewal of the war, Judas defeated them in five engagements; but in the 6th he was abandoned by all his men except 800, who, together with their chief, were ſlain in a ſevere conteſt, which laſted from morning till evening, B.C. 161. The Jews were much afflicted by the death of Judas. He was ſucceeded, however, by his brother Jonathan, who conducted their concerns with no leſs prudence and ſucceſs than Judas, till, after having governed the Jewiſh ſtate near 17 years, he was decoyed into the power of Tryphon, a Syrian uſurper, and ſoon after murdered, B.C. 144. Simon, the only ſurviving ſon of Mattathias, ſucceeded his brother Jonathan: who fruſtrated all the hoſtile deſigns of the traitor Diodotus, called Tryphon, againſt Judea. Simon was not only appointed commander-in-chief of the forces of the Jews, but promoted to the dignity of high-prieſt, in which office he was ſolemnly inſtalled. This pontiff renewed the alliance with Rome and Sparta; repaired and fortified all his garriſons, eſpecially that of Bethſura, on the confines of Judea; took Joppa and Gaza; and drove out the Syrian garriſon from Acra, the fortreſs of Jeruſalem. The wife of Demetrius, who had been driven from his dominions, and kept priſoner by the Parthians, deſpairing ever to recover her captive huſband, invited his brother Antiochus to make an effort for gaining the Syrian crown. Upon his arrival, he ſent a very obliging letter to the Jewiſh high-prieſt, in which he confirmed to him all his dignities, revenues, and authority; and to his nation all the freedom and immunities which had been formerly granted by his brother to them, or which they now actually poſſeſſed. To this he added, beſides many great promiſes, a power of coining their own money in Judea, of which that pontiff immediately availed himſelf. But when that prince had eſtabliſhed himſelf on the throne by the marriage of Cleopatra, and the death of Tryphon, Simon, either ſuſpecting the ſincerity of his late promiſes, or being deſirous of making his friendſhip to him appear more conſiderable, ſent a freſh embaſſy to Rome, to renew and ſtrengthen his alliance with that nation. Simon was at laſt treacherouſly murdered by his ſon-in-law Ptolemy, about the year B. C. 135. The ſucceſſor of Simon, both as prince and high-prieſt, was his ſon Hyrcan, who immediately adopted meaſures for the ſafety of his own perſon, as well as that of the city and country. Having ſucceeded in throwing off the Syrian yoke, he turned his arms againſt the Samaritans, took their capital Samaria, made himſelf maſter of Paleſtine, and added to it all the provinces of Samaria and Galilee; all which he enjoyed to the end of his life. His reign was no leſs remarkable on account of his great wiſdom and piety at home than his conqueſts abroad. Never did the Jewiſh religion or commonwealth appear with greater luſtre ſince the return from the captivity; but that which raiſed his glory above any of his predeceſſors, or ſucceſſors, was, if we may believe Joſephus (Bell. Jud. l. ii. c. 3.), and the 4th book of Maccabees, his enjoying three dignities, which never all concurred in any one beſides himſelf; *viz.* the royal dignity, the high-prieſthood, and the gift of prophecy. Of the laſt-mentioned, however, the inſtances that are produced are very equivocal and liable to great ſuſpicion. The laſt year of Hyrcan's reign was much imbittered by a quarrel with the Phariſees, to whom he had been always partially attached; and this contention is thought to have ſhortened his days. One of the Phariſees ſuggeſted a doubt of his legitimacy, alleging that his mother had formerly been a ſlave, and conſequently, that he was incapable of enjoying the high-prieſthood. This report was credited, or at leaſt pretended to be ſo, by the whole ſect; and it irritated Hyrcan to ſuch a degree, that he joined the Sadducees, and could never afterwards be reconciled to the Phariſees, who occaſioned all the troubles and ſeditions that diſturbed the cloſing period of his life. Hyrcan died in the year B. C. 107; and was ſucceeded by his ſon Ariſtobulus, who manifeſted himſelf to be a moſt cruel and barbarous tyrant. His power was happily of ſhort duration; for in the year B. C. 106, he was ſucceeded by his brother Alexander Jannæus, who was, next to king David, the greateſt conqueror that ever ſat on the Jewiſh throne. His abode at Jeruſalem was rendered very undeſirable by the tumults excited by the Phariſees; and he therefore left the city to ſuch foreign enemies and conqueſts. During his abſence the Phariſees raiſed a rebellion at home, which was terminated in the year B. C. 86, when the rebels were treated with great inhumanity. Alexander, having made ſeveral conqueſts in Syria, died in the year B. C. 79. Although he left two ſons, Hyrcanus and Ariſtobulus, he bequeathed the government of the kingdom to his wife Alexandra during her life, and then to either of his ſons whom ſhe might think proper to appoint. The Phariſees diſquieted her adminiſtration; and nothing leſs would ſatisfy them than the total extermination of their adverſaries, the Sadducees, who were grievouſly perſecuted for four years, and then, for their future ſecurity, diſperſed among the ſeveral garriſons of the kingdom. When her death ſeemed to be approaching, Ariſtobulus collected a party to ſecure the crown to himſelf; but the queen, having before made Hyrcanus high-prieſt, appointed him to ſucceed her in the royal dignity. At her deceaſe, ſhe left her two ſons competitors for the crown. In a conteſt between the two brothers, Hyrcanus was compelled to abandon all title both to the royal and pontifical dignity. His party, however, was not extinguiſhed. Antipater, father of Herod the Great, took part with Hyrcanus, and having carried him off into Arabia, under a pretence that his life was in danger in Judea, he intereſted Aretas, king of that country, in his behalf; who, with a view of reſtoring him to the throne, invaded Judea, and defeated Ariſtobulus. This prince had recourſe to the Romans, who, under the command of Scaurus, defeated Aretas, with the loſs of 7000 men, and drove him out of the country. The two brothers afterwards appealed to Pompey, who was at that time commander-in-chief of all the Roman forces in the Eaſt, and made him the arbitrator of their differences. He deferred giving an opinion, with a promiſe that, as ſoon as he had ſubdued Aretas, he would come into Judea and divide their controverſy. Ariſtobulus was offended, and on the other hand Ptolemy reſented the want of reſpect on his part, and, entering Judea with his troops, ſummoned Ariſtobulus to appear before him. From the behaviour of Pompey, Ariſtobulus perceived that he was in the intereſt of his brother, and accordingly he fled to Jeruſalem, with a deſign of exerting himſelf to the utmoſt of his power againſt the Romans. Pompey followed him, and ſoon brought him to abject ſubmiſſion. The citizens of Jeruſalem demurred, and the garriſon ſhut the gates againſt Pompey. Exaſperated by this conduct, he beſieged and took the city, B. C. 63, and reſtored Hyrcanus to the prieſthood and alſo the government, with the title of “Prince;” but forbidding him to aſſume that of “King,” to wear a diadem, or to extend his territories beyond the limits of Judea. Pompey, having thus ſubdued the Jewiſh nation, ſet out for Rome, and carried with him Ariſtobulus, with his two ſons, Alexander and Antigonus, and his two daughters, to adorn his future triumph. Alexander, however, found means to make his eſcape into Judea, where he raiſed an army, and having fortified ſome ſtrong holds, made incurſions into the neighbouring country. Hyrcanus ſunk into his natural indolence, and left the management of public affairs to Antipater, who, for purpoſes of perſonal and family aggrandizement, ingratiated himſelf with the Romans. Hyrcanus was in no condition to oppoſe Alexander; and therefore again beſought the aſſiſtance of the Romans. Alexander ventured a battle, and was defeated ; but, by the intereſt of his mother with the Roman general, obtained a pardon for his paſt aggreſſions. Hyrcanus was again reſtored to the pontifical dignity ; and the province was divided into five diſtricts, having each a ſeparate court of judicature. The firſt of theſe was at Jeruſalem ; the ſecond at Gadara ; the third at Amath ; the fourth at Jericho ; and the fifth at Sephoris in Galilee. The government of Judea was now changed into an ariſtocracy. The war between Pompey and Cæſar afforded the Jews ſome reſpite ; and favoured the ambitious projects of Antipater. Cæſar confirmed Hyrcanus in his prieſthood ; added to it the principality of Judea, which was entailed on him and his poſterity for ever ; and reſtored the Jewiſh nation to their ancient rights and privileges ; and ſoon after, when Cæſar himſelf came into Judea, he granted liberty to fortify the city, and to rebuild the wall which Ptolemy had demoliſhed. During the life of Cæſar the Jews were highly favoured, and might be ſaid ſcarcely to feel the Roman yoke ; but after his death, B. C. 44, their condition underwent a material change. Antigonus, ſon of Ariſtobulus, brother of Hyrcanus, by means of ſome friends he had among the Jews, and by the aſſiſtance of the Parthians, made himſelf maſter of Jeruſalem and all Judea, and took Hyrcanus priſoner, who was put into the hands of the Parthians. This circumſtance, and ſeveral others occurred, which embroiled Judea ; nor were the tumults and diſorders of this province quelled till Herod viſited Rome, and was created king of Judea by the friendſhip and intereſt of Marc Antony and Octavius, in the year B. C. 40. The view of Herod, in his journey to Rome, was to obtain the kingdom of Judea for Ariſtobulus, brother of his wife Mariamne, by his father, grandſon of Ariſtobulus, and by his mother, of Hyrcanus. But the ſenate of Rome, by the recommendation above-mentioned, and alſo moved by ſome reaſons of ſtate, conferred the kingdom of Judea upon Herod. Having had this unexpected ſucceſs at Rome, he returned with all expedition to Judea, and in about three years' time, B. C. 37, got poſſeſſion of the whole country. When Jeruſalem was taken by Soſius and Herod, and by the death of Antigonus, beheaded by order of Marc Antony, at the requeſt of Herod, the Aſmonean family terminated, 126 years after Judas Maccabæus. Herod was a perſecutor and tyrant ; he began his reign with the death of many of the adherents of his rival Antigonus, and with the confiſcation of their effects. He alſo decoyed Hyrcanus, the baniſhed pontiff, from Parthia, that, notwithſtanding his moſt ſolemn promiſes to the contrary, he might put him to death. His own family did not eſcape his cruelty. He had married Mariamne, the daughter of Hyrcanus ; whoſe brother, Ariſtobulus, was made high-prieſt at the interceſſion of his mother ; but the tyrant, knowing that Ariſtobulus had a better right to the kingdom than himſelf, cauſed him to be drowned in a bath ; and then ſacrificed his own wife Mariamne. Her death was ſoon followed by that of her mother Alexandra, and this by the execution of ſeveral other perſons, who had united their endeavours with her's for ſecuring the kingdom to the ſons of the deceaſed queen. His contempt of the Jewiſh ceremonies, and introduction of a number of heatheniſh games, expoſed him to the danger of aſſaſſination ; but the conſpirators, failing in their attempt, were afterwards diſcovered by ſome women, who were put to the rack, and ſentenced to ſuffer death, together with their families. Having thus diſpoſed the people to a revolt, he found it neceſſary to fortify Jeruſalem with additional works, to rebuild Samaria, and to garriſon ſeveral fortreſſes in Judea. Although the relief which he afforded to his ſubjects in a time of famine ſerved in ſome meaſure to allay their hatred and animoſity ; yet, by relapſing into his former cruelty, their hatred of him was renewed, nor did it ſubſide till his death. About the year B. C. 23, he began to adorn the chief cities with ſumptuous buildings, and to rebuild the temple. (See JERUSALEM and TEMPLE.) But all theſe works were not ſufficient to divert the king's attention from his uſual jealouſy and cruelty. Prompted by his ſiſter Salome, and one of his ſons, Antipater, he murdered his two ſons by Mariamne, Alexander and Ariſtobulus ; but his cruelty and jealouſy were pre-eminently diſplayed in his attempt to deſtroy the Saviour of the world. At length he was ſeized with a loathſome and incurable diſeaſe, which terminated in his death, very much to the joy of his ſubjects, Nov. 25th, B.C. 4. He had previouſly put Antipater to death, and divided his kingdom among his ſons in the following manner : Archelaus had Judea, but his power did not extend over the whole land of Iſrael, and particularly not to Galilee ; Antipas, or Herod, was tetrarch of Galilee and Perea, and ſo continued till he was removed by Caligula, the ſucceſſor of Tiberius (ſee HEROD-ANTIPAS) ; and Philip had the regions of Trachonitis, Gaulonitis, Batanea, and Panias, which he erected likewiſe into a tetrarchy, and governed 37 years, till his death in the 20th year of Tiberius. For other particulars relating to *Herod* the Great ; ſee his article. The death of Herod was followed by inſurrections and tumults. Archelaus was oppoſed by his brethren, and obliged to appear at Rome before Auguſtus, with whom many complaints were lodged againſt him. (See ARCHELAUS.) Upon the baniſhment of Archelaus, A.D. 6 or 7, Judea was reduced to a Roman province, and put under the government of Roman officers ſent from Rome ; and appointed to be a branch of the province of Syria. But in order to keep this country of Judea in good order, there was an officer, with the title of procurator, ſent by Auguſtus, to reſide and govern there, inveſted with the ſupreme authority, or, as Lardner ſays, the power of life and death. The firſt of theſe was Coponius, the next Marcus Ambivius, his ſucceſſor Annius Rufus, in whoſe time Auguſtus died, A.D. 14. The next was Valerius Gratus, who was appointed procurator by Tiberius, and continued in the province 11 years ; and was then ſucceeded by Pontius Pilate, who governed Judea during a period of ten years, which expired ſome time before the paſſover, A.D. 36. After the removal of Pilate, for about four or five years at the moſt, it may be queſtioned, whether the Jews had now any procurator reſiding among them with the power of life and death, as they had from the year of our Lord 7, to the year 36 or 37. But however this be, it is certain that they were ſubject to the Romans. For when the Samaritans, with whom the Jews are ſuppoſed to have joined, waited upon Vitellius, the preſident of Syria, intreating that Pilate might be removed, they made very ſolemn profeſſions of their willingneſs to continue under the Roman government, and only complained of the tyranny of Pilate. Dr. Lardner is of opinion, however, that they had no procurator reſiding among them from the time of Pilate's removal to Agrippa's acceſſion to the kingdom of Judea, in the reign of Claudius. In conſidering the circumſtances of the Jews in their own country at this time, as it is deſcribed by the writers of the New Teſtament, and other ancient authors, we may regard both their religious and civil ſtate. That they had, according to the ſacred writers, the free exerciſe of their religion, is evident from the whole tenor of the hiſtory contained in the Goſpels and the Acts of the Apoſtles. They had their ſynagogues, in which the law and the prophets were read, and in which our Saviour taught. In the whole hiſtory of our Saviour's miniſtry there is no mention of any reſtraint, or obſtruction which they met with in their worſhip, except that which occurs in Luke, xiii. 1. It appears alſo probable that they were at liberty to perform all their religious ſervices, if we conſider, that the Romans always permitted the people conquered by them to practiſe their own religious rites in their own way; nor do they ſeem to have departed from this principle till after the period of the evangelical hiſtory. Joſephus alſo aſſures us of this fact. The Roman governors did, indeed, ſometimes offer abuſes, or ſuffer abuſes to be committed in the country, contrary to the inſtitutions of the law; and they alſo injured them with reſpect to their civil property. But theſe abuſes do not ſeem to have been very numerous; when any were committed, it was without the emperor's authority; and, uſually, the Jews at length obtained ſatisfaction. In conſidering the civil ſtate of the Jews, Dr. Lardner diſtributes their hiſtory into four periods; *viz.* the firſt, which reaches from the preaching of John the Baptiſt to our Saviour's reſurrection; the ſecond, from thence to the time of Herod, the king, mentioned Acts, xii.; the third, the reign of this Herod; and the fourth, from the end of this reign to the concluſion of the evangelical hiſtory. In the inveſtigation of this ſubject, and the concluſions reſulting from it, learned men have entertained different opinions; particularly with regard to the extent of the power and authority poſſeſſed by the Jews, and with reſpect to the queſtion, whether they had the power of life and death, or only a right to inflict ſome leſſer penalties. This enquiry ſhould be reſtricted to the ſtate of the Jews in Judea, properly ſo called; and therefore it does not comprehend the beheading of John the Baptiſt, which was perpetrated by Herod, tetrarch of Galilee, ſon of Herod the Great; who, without doubt, had the power of life and death, however he abuſed it, in his own territories. With reference to the firſt period, we are aſſured by all the evangeliſts, that our Saviour was brought before Pilate, governor in Judea, during the whole time of our Saviour's miniſtry, and condemned by him; and he was crucified by Pilate's officers; and yet the Jews are more than once ſaid to have crucified Chriſt, becauſe his death was owing to their proſecution and importunity. Nor is it uncommon to aſcribe to men not only thoſe things which they themſelves do, but thoſe alſo which are brought about by their means. For the particular illuſtration of this ſubject, we muſt refer to Lardner's Works, vol. i. ed. 8vo. After adducing and examining, with his uſual accuracy and impartiality, the main paſſages of this period, concerning the power which the Jews poſſeſſed in their own country, he concludes with the following ſummary. They practiſed their own religious rites, worſhipped at the temple and in their ſynagogues, followed their own cuſtoms, and lived very much according to their own laws. They had their high prieſts, council or ſenate; inflicted leſſer puniſhments; they could apprehend men, and bring them before the council; and if a guard of ſoldiers was needful, could be aſſiſted by them, upon aſking the governor for them; they could bind men and keep them in cuſtody; the council could ſummon witneſſes, take examinations, and when they had any capital offenders, carry them before the governor. This governor uſually paid a regard to what they offered; and, if they brought evidence of the fact, pronounced ſentence according to their laws. But he was the proper judge in all capital cauſes; for when the council of the Jews had before them a caſe, which they pretended to be of this kind, having prepared it, they went with it immediately to the governor, who re-examined it, and pronounced the ſentence. Our learned author has examined and maturely conſidered the various occurrences of the three ſubſequent periods, and ſatisfactorily ſhewn, that whatever power the laws exerciſed with regard to the infliction of leſſer penalties, and however tumultuouſly and illegally they might have acted in particular caſes, they had no power of life and death. The arguments deduced from the facts ſtated by the evangelical hiſtorians are farther confirmed by the teſtimony of ancient writers. Ulpian, a famous Roman lawyer, expreſsly ſays, "The magiſtrates of municipal places (ſee MUNICIPAL *Cities*) may not puniſh a ſlave with death; but the inflicting leſſer penalties is not to be denied them." This ſingle authority is ſufficient to decide the queſtion. The Jews lived according to their own laws, as municipal people did; but then, if theſe laſt, who were Roman citizens, had not the right of puniſhing a ſlave with death, certainly the Jews had not, whilſt under the Roman government.

Soon after Pilate's depoſition, Caius Caligula promoted his old friend Agrippa to the regal dignity; but he did not long enjoy this honour. (See AGRIPPA.) On his death, A.D. 44, Judea was made a Roman province by Claudius, who ſent Cuſpius Fadus thither as governor; he was ſucceeded by Tiberius Alexander, an apoſtate Jew of ſacerdotal race, and nephew to the famous Philo. The ſubſequent governors were Ventidius Cumanus, Claudius Felix, mentioned Acts, xxiv., Portius Feſtus, before whom Paul made his famous defence (Acts, xxv. xxvi.), Albinus, nominated by Nero, who ſuppreſſed the Sicarii, or thoſe robbers who were at this time become very numerous in Judea, and Geſſius Florus, the laſt and worſt governor that Judea ever had, whoſe atrocious conduct prepared the way for that war, which terminated with the total ruin of the Jewiſh nation. During his flagitious government, great numbers of Jews forſook the province, and ſought an aſylum among foreign nations; whilſt thoſe that remained applied to Ceſtius Gallus, governor of Syria, who was at Jeruſalem at the paſſover, beſeeching him to pity their wretched ſtate, and free them from the tyranny of a man who had totally ruined their country. The number of people at Jeruſalem was found by computation to amount to 2,556,000. Joſephus thinks they rather amounted to 3,000,000. In May, A.D. 66, began the Jewiſh war with the Romans; it took its immediate riſe from a conteſt between the Jews and Syrians concerning the city of Cæſarea. The Jews maintained that it belonged to them, becauſe it had been built by Herod, and the Syrians pretended that it had been always conſidered as a Greek city. The deciſion of the diſpute was referred to Nero, whoſe determination produced an inſurrection on the part of the Jews, which rapidly ſpread through the whole country. Robberies, murders, and every kind of cruelty prevailed. The Jews, on their part, ſpared neither Syrians nor Romans, but retaliated their cruelties wherever they occurred. The Cæſareans fell ſuddenly on the Jews of their city, and maſſacred 20,000 of them; 2000 were murdered at Ptolemais; and 50,000 are ſaid to have been ſlaughtered at Alexandria. At Jeruſalem, Florus cauſed his troops one day to plunder the high market, and to kill all they met; and accordingly they murdered 3500 perſons, men, women, and children. In the mean time a great number of aſſaſſins, having joined the rebels, drove the Romans out of the fortreſſes of Maſſada, Antonia, and the towers of Phaſael, Mariamne, and others. They ſet fire to the palaces of Agrippa, Berenice, the high prieſt Ananias, and his brother Ezechias; and theſe two laſt perſons they murdered without mercy. The revolted Jews extended their conqueſts beyond Jordan, and took the fortreſſes of Machæron and Cyprus, which laſt they razed to the ground, after having put all the Romans to the ſword. At length Ceſtius Gallus was rouſed; and having marched into Judea with a powerful army, burned all the towns and villages in his way, maſſacred all the Jews he could find, and purſued thoſe that eſcaped and that were in arms, almoſt as far as Jeruſalem. The Jews were thrown into ſuch conſternation, that they abandoned all the outer quarters of the city, and retired into the inner cincture near the temple. Ceſtius ſet fire to the former, and reſolving to beſiege the latter, took up his head-quarters in the royal palace. Inſtead of puſhing on the ſiege, it was ſhamefully raiſed by the advice of ſome generals of Ceſtius, whom Florus had corrupted; ſo that the inſurgents, recovering their ſpirits, purſued him to Gideon, and defeated him with great ſlaughter. The Jews now deliberated concerning the beſt means of carrying on the war againſt the Romans, and appointed ſome of their braveſt chiefs to command the ſeveral cantons and fortreſſes of Judea. Joſephus, the writer of theſe wars, was appointed governor of the two Galilees; Joſeph, the ſon of Gorion, and the high-prieſt Ananus, had the government of Jeruſalem; and to Eleazar, the chief of the revolters, was aſſigned that of Idumæa. In the mean while there reigned ſuch diſſention among the Jews, that many of the better ſort, foreſeeing the bad effects of the reſentment of the Romans, forſook the city. The Chriſtians retired into Pella, a ſmall city on the other ſide of Jordan, in the tetrarchy of Herod, whither the war did not reach. When Nero received advice of the ſtate of affairs in Judea, he nominated Veſpaſian, who had ſignalized himſelf in Germany and Britain, to march with all ſpeed againſt Judea with a powerful army. He accordingly repaired to Syria, where he collected all his forces and thoſe of his auxiliaries, while his ſon Titus was ſent to fetch the fifth and tenth legions from Alexandria to Judea. Before their arrival, 10,000 of the Jews, who beſieged Aſcalon, were killed by Antony; and on a ſecond attempt their loſs was doubled. In the beginning of the year 68, Veſpaſian, joined by Titus, entered Galilee, with a force of 60,000 well-diſciplined men; and having burnt Gadara, advanced to beſiege Jotapa. Joſephus, governor of that province, having previouſly ſupplied the place with ſtores, defended it with great bravery 47 days; but it was at length taken by aſſault, and the garriſon were put to the ſword. All the Jews were murdered or made priſoners. Forty thouſand are ſaid to have been ſlain, and Joſephus was among the priſoners. As ſoon as the news of the capture of Jotapa reached Jeruſalem, the Jews, who heard that Joſephus was among the ſlain, made great lamentations for the loſs of him for a whole month; but when they were informed that he had ſurrendered himſelf a priſoner to the Romans, they began to conſider him as a baſe betrayer of their country; and to perſecute him with the moſt irreconcileable hatred and diſdain. The Romans purſued their conqueſts; and after the reduction of Tarichea and Tiberias, all the other cities of Galilee ſubmitted to the Romans, except Giſchala and Gamala, and the mountain of Itabyr. Theſe places were at length taken with great loſs to the Jews; and the reduction of Giſchala having completed the conqueſt of Galilee, Titus rejoined his father at Cæſarea, where their troops had ſome reſpite before they undertook the ſiege of Jeruſalem. At this time the Jewiſh nation was divided into two very oppoſite parties; one, which wiſhed to ſubmit to the Romans, and another, ſprung from the Gaulonitiſh incendiary, called the Zealots, which breathed nothing but war, confuſion, and cruelty. This latter party committed the moſt horrid acts of plunder and maſſacre; and took poſſeſſion of Jeruſalem. After having butchered all perſons of any diſtinction or character, they began to wreak their rage on the common people who oppoſed them. This ſavage deſpotiſm obliged many of the Jews to forſake Jeruſalem and take ſhelter under the Romans, though they did it at the hazard of their lives, the gates and avenues of the city being ſo cloſely guarded that it was extremely dangerous to retire, and many who were caught in the attempt were immediately put to death. Veſpaſian remained at Cæſarea an inactive ſpectator of the diſmal condition of the Jewiſh nation. At length the Zealots themſelves divided into two factions; the moſt profligate of them joined John of Giſchala, and others oppoſed him. During this anarchy, there aroſe in the country a new gang of Sicarii, who, having ſeized the ſtrong fortreſs of Maſſada, arranged themſelves under a bold adventurer, called Simon, and made this their place of retreat. Theſe plundered, burned, and maſſacred every where, and carried their booty into that place. Nero, about this time, A.D. 68, put an end to his life at Rome: and Veſpaſian was buſily employed in making preparations for the ſiege of Jeruſalem. In the mean while Simon, at the head of a great army, committed hoſtilities againſt the Zealots; and having ſucceſsfully invaded Idumæa, poſted his army at the gates of Jeruſalem. Simon without, and John within, vied with each other in their crimes and cruelties. At length Simon was, by an act of treachery, admitted into the city, where he laboured to make his authority abſolute. Whilſt Judea was thus miſerably diſtracted with foreign and inteſtine wars, the Roman empire was in a ſtate of great confuſion. But as ſoon as Veſpaſian was choſen emperor, A.D. 69, he reſtored a calm to the empire. Joſephus, who had previouſly appriſed him of his advancement to the throne, began to reap the benefits of his anticipation. The emperor, recollecting his predictions, recompenſed his fidelity with many ſignal favours. As ſoon as Veſpaſian received intelligence that his election was confirmed at Rome, he left the beſt of his troops with his ſon Titus, with orders to beſiege Jeruſalem and to deſtroy it utterly; and then he prepared for returning to the capital of his empire. The Jewiſh diſſentions in the mean while increaſed. Three factions ſubſiſted in Jeruſalem, which were inceſſantly contending with and weakening each other: till at length Titus, with four legions under his command, marched againſt the city in different directions. On his approach, the perſons who compoſed the three factions, ſeeing that they were beſieged by ſo powerful an army, under ſo brave a general, thought it neceſſary to unite in a vigorous defence againſt the common enemy. It was not long, however, before their union was diſſolved; and one faction being deſtroyed, Simon and John ſometimes made united ſallies againſt the beſiegers, and at other times turned their arms againſt one another, as if they had pledged themſelves to make their ruin more eaſy to the Romans. The proceſs of the ſiege we ſhall not here minutely deſcribe; ſome notice has already been taken of it under the article JERUSALEM; and for a fuller account we refer to Joſephus (Bell. Jud. lib. vi. cap. 7.) The ſiege commenced in April, and laſted till the 8th of September, A. D 70, when the city was taken and entered by Titus. According to Joſephus, the number of priſoners amounted to 97,000, beſides about 11,000, who were either ſtarved through neglect, or ſtarved themſelves through ſullenneſs and deſpair. Suetonius and Cornelius Nepos reckon but 600,000 ſlain and priſoners in the courſe of this war; but they lived at a diſtance, and were leſs competent to give a juſt eſtimate of the number than Joſephus, who was a party and an eye-witneſs; though he is thought to have exaggerated in compliment to Titus and the Romans. From the computation of Juſtus Lipſius, on the authority of Joſephus, the whole number of the Jews that periſhed in the ſeveral places through the kingdom, and elſewhere, from the beginning to the concluſion of the war, amounts to 1,354,490 perſons. Beſides theſe, a vaſt multitude died in the caves, woods, wilderneſſes, common ſewers, in baniſhment, and in many other ways, of whom no computation could be made; 10,000 were ſlain at Jotapa, not admited into the author's computation. Allowing for the priſoners and others that have been omitted, the whole amount will be above one million four hundred and ſixty thouſand. Simon and John, the two grand rebels and leaders of the principal factions, were reſerved for the triumph of Titus. Theſe two infamous perſons appeared at the head of 700 of the moſt beautiful Jewiſh captives who adorned this triumph. Simon was dragged through the ſtreets of Rome with a rope about his neck, ſeverely ſcourged, and put to death with ſome of his aſſociates; but John was ſent into perpetual impriſonment. The laſt fortreſs that was attacked and taken was Maſſada, the beſieged, under Eleazar, the grandſon of Judas the Gaulonite, having agreed to deſtroy one another; and thus this dreadful war terminated. Veſpaſian ordered the Jewiſh lands to be ſold for his own uſe; and all the Jews within the Roman empire were commanded to pay into his treaſury the uſual tribute of half a ſhekel, or two drachmas, which they had formerly been obliged to pay for the uſe of the ſanctuary. He likewiſe cauſed all the branches of the houſe of Judah to be cut off, to deprive them at once of all hopes of a deliverance, or future Meſſiah. Thus ended the Jewiſh nation and worſhip; nor have they been able to regain any ſettlement in their native country of Judea; but there is ſcarcely a country on the face of the globe where they are not to be found. They ſtill remain, as a monument of the truth of our religion, a diſtinct people, unincorporated among the inhabitants of the countries in which they reſide. They ſtill profeſs to pay a regard to the worſhip and ceremonies enjoined by the law of Moſes, to which they have added many rites that are merely of traditional authority. They alſo entertain the unfounded expectation of a Meſſiah to deliver them from the low ſtate into which they are ſunk. In many countries, and in different ages, they have been moſt cruelly maſſacred, and it is lamentable to think that they have been generally more mildly treated by Pagans and Mahometans than by Chriſtians. It would be endleſs to recite the numerous edicts that have been framed againſt them, and it would be painful to recount the inſtances of ſevere perſecution which their hiſtory furniſhes. And yet, notwithſtanding all the contempt and inſult, and ſuffering which they have endured, they ſtill ſubſiſt in almoſt every part of the globe. There are few countries from which they have not been repeatedly baniſhed, though they have availed themſelves of the opportunities for returning, which change of circumſtances has afforded them; and many of them have acquired both wealth and reputation, notwithſtanding the oppreſſion which they have endured. There is hardly any country in Europe in which the Jews have enjoyed greater liberty than in Poland. Here they have had their ſtately ſynagogues and academies; and their houſe of judgment, or court of judicature, was endowed with ſingular authority, being allowed to judge of criminal as well as civil caſes. Poland has been looked upon as a nurſery of learned rabbins, and the country to which the Jews have been formerly accuſtomed to ſend all their youths to ſtudy the Talmud, and the rites of their religion. The city of Hamburgh has been called the "Leſſer Jeruſalem," on account of the many Jews that live and traffic in it. The Jews have been endowed with great privileges at Prague. In Hungary they had in the 17th century the privilege of farming the revenue; till an edict of Ferdinand II. deprived them of it in 1630. Here they held their grand council, A.D. 1650, in which was debated the grand point, whether the Meſſiah was come? (See AGEDA.) In Holland they are ſaid by one of their writers to have enjoyed greater liberty and quietneſs, and to have been more flouriſhing and wealthy than in any other part of the world. We find nothing worth mentioning concerning the Jews in England till the time of king John; except that they were invited into this kingdom by William the Conqueror. Even ſo early as the reign of king Stephen, A.D. 1145, they were accuſed of crucifying a young Chriſtian in contempt of Chriſt and his religion, and were accordingly puniſhed for it; they were again proſecuted for the ſame atrocious fact at Glouceſter, in the reign of Henry II., A.D. 1160; and for a third, committed at St. Edmundſbury, A.D. 1181; but theſe tales were probably falſe accuſations alleged againſt them as apologies for oppreſſing and plundering them. The exactions impoſed by king John, A.D. 1210, fell with peculiar weight on the Jews, whom he cauſed to be impriſoned and tortured, becauſe they refuſed to pay the taxes which he impoſed upon them. At length he confiſcated all their effects and baniſhed them by a public edict. They were not treated in a much better manner under the long reign of Henry III., when many of them choſe to become Chriſtians, in order to avoid the ſeverity of his government; but being afterwards detected, they were puniſhed for their diſſimulation. The Jews of Norwich, A.D. 1235, were accuſed of having ſtolen a Chriſtian child, and of having kept him a whole year, in order to circumciſe and crucify him on the enſuing paſſover; but the fact being detected, they underwent a due puniſhment. Some other ſimilar facts have been mentioned, which at this diſtance of time, and conſidering the various means that were uſed for raiſing money, cannot be duly authenticated. The Holy war, to which Henry was preſſingly invited by the pope, A.D. 1252, proved another pretence for ſqueezing money out of his ſubjects, and eſpecially from the Jews, whom he made no ſcruple to ſtrip of all they had left. Another cauſe of demand was the Spaniſh war. After their expulſion by king Edward, A.D. 1291, they never more appeared in a body in this kingdom from that time, till they were recalled to it in the time of Oliver Cromwell. Rabbi Menaſſe, it is ſaid, came over into England A.D. 1656, with a deſign of procuring a ſettlement for the Jews, and was well received by Cromwell and the parliament; as was alſo his apology for the Jews, in which he exploded all the calumnies raiſed againſt his nation, eſpecially thoſe of their crucifying and uſing the blood of Chriſtian children at their paſſover: he is ſaid to have pleaded his cauſe ſo well, as to obtain a better ſettlement and greater privileges for them than they had before enjoyed in England.

Formerly in this country, as it is ſaid, the life of a Jew was at the diſpoſal of the chief lord where he lived, and alſo all his goods. So ſtrong were the popular prejudices againſt them, that in the year 1348 a fatal endemic diſtemper, which raged in a great part of Europe, was aſcribed to their having poiſoned the ſprings and wells; in conſequence of which, a million and a half of them were cruelly maſſacred. In 1492, half a million of them were driven out of Spain, and 150,000 from Portugal. But we rejoice to think that we live in a more enlightened period, when a more liberal ſyſtem is eſtabliſhed. The countries of Europe, we truſt, are beginning to perceive the wiſdom and benefits of univerſal toleration. In England the Jews are allowed the free exerciſe of their religion, liberty of trade, and the quiet enjoyment of their property: though ſome acceſſion to their freedom is ſtill wanting. (See JEW'S *Bill.*) Here, like thoſe of Holland, they are commonly diſtinguiſhed into German and Portugueſe, and have their reſpective ſynagogues, chiefs, ſchools, &c. but no academy; ſo that they are obliged to ſend their youth to be educated in Germany, or at Amſterdam. The former are the moſt indigent, as well as the moſt zealous for their religion, and moſt careful to inſtruct their children in it, and in the knowledge of the Hebrew tongue; whereas the latter, being opulent, are more remiſs in theſe reſpects; inſomuch that many of them cannot ſo much as underſtand the liturgy of their ſynagogues, but have it tranſlated into Portugueſe. However, both of them have had ſome learned rabbis. The rich among them are very generous and charitable, not only to their own poor, but to thoſe of the Chriſtians. Attempts are now (1811) making for communicating inſtruction to their poor, and for converting them to Chriſtianity. In France they have lately obtained a very conſiderable extenſion and eſtabliſhment of their privileges; an act of political wiſdom which in due time will, without doubt, be imitated by other ſtates; ſo that Jews will not only be merely tolerated in other countries, which is now the caſe in ſeveral countries of Europe, but obtain a permanent ſettlement. Anc. Univ. Hiſt. vols. ii and iii. Mod. Univ. Hiſt. vol. xi.

JEWS, are thoſe who profeſs obedience to the laws and religion of Moſes. See JUDAISM.

By ſtat. 1 Ann. c. 30. if Jewiſh parents refuſe to allow their Proteſtant children a fitting maintenance, ſuitable to the fortune of the parent, the lord chancellor, on complaint, may make ſuch an order as he ſhall ſee proper.

JEZDIKAN, or JEZDKAN, in *Geography*, a town of Perſia, in Adirbeitzan; 90 miles W. of Tabris.

JEZDKAST, or YEDKAS, a town of Perſia, in Farſiſtan; 42 miles S. of Iſpahan.

JEZIDES, or JEZIDEANS, a term uſed among the Mahometans, to ſignify *heretics*.

In which ſenſe *Jezidean* ſtands oppoſed to *Muſſulman*. Leunclavius tells us, that the name is derived from an emir, called *Jezid*, who killed the two ſons of Ali, Haſan and Huſſein, two grandſons of Mahomet on their mother's ſide, and perſecuted the poſterity of the prophet. The Agarenians, whoſe emir or prince he was, looked on him as an impious and heretical perſon, and hence took occaſion to call all whom they accounted heretics, Jezideans.

Beauſobre conjectures, that the denomination of this ſect is derived from the name of Jeſus; but it ſeems rather to be borrowed from the Perſian *Jazid* or *Jezdan*, ſignifying the good God, in oppoſition to Arimanius, the evil principle; ſo that the term points out this ſect as the worſhippers of the good or true god. After all, this name may have been derived from the city *Jezd*.

Some authors mention the Jezides as a particular people, ſpeaking a language different both from the Turkiſh and Perſian, though ſomewhat akin to the laſt. They farther tell us, that there are two kinds of Jezides; the one *black*, the other *white*. The white have no ſlit in the boſom of their ſhirt, but barely an opening for the head to paſs through; a thing that they obſerve with a great deal of ſtrictneſs, in memory of a circle of gold and light, which they ſay fell from heaven upon the neck of their grand ſcheik, or chief of their ſect. The black Jezides are faquirs, or religious, and go arrayed in ſable garments.

The Turks and Jezides bear a ſtrong averſion to each other, and the greateſt affront one can put upon a Turk, is to call him a Jezidean. On the contrary, the Jezides love the Chriſtians; being perſuaded that Jezid, their chief, is Jeſus Chriſt; or rather, becauſe ſome of their traditions mention, that Jezid made an alliance with the Chriſtians againſt the Muſſulmen.

They drink wine, even to exceſs, when they can get it, and eat ſwine's fleſh. They never undergo circumciſion, excepting when they are forced to it by the Turks. Their ignorance is ſurpriſing; they have no books. Indeed they pretend to believe in the Goſpel, and in the ſacred books of the Jews; but they never read either one or other of them. They make vows, and go on pilgrimage; but have no moſques, temples, nor oratories, no feaſts, nor ceremonies; all their religious worſhip conſiſting in ſinging hymns to Jeſus Chriſt, the Virgin, Moſes, and Mahomet. When they pray, they look towards the eaſt, in imitation of the Chriſtians: whereas the Muſſulmen turn towards the ſouth. They believe the devil may poſſibly, one day, come into favour again with God; and that he is the executor of God's juſtice in the other world: for which reaſon, they make it a point of prudence not to ſpeak ill of him, leſt he ſhould revenge himſelf of them.

The black Jezides are reputed ſaints: and it is forbidden to weep at their death; inſtead whereof they make rejoicings: and yet, for the generality, they are no more than ſhepherds. They are not allowed to kill the animals they eat; that office belongs to the white Jezides. The Jezides go in companies like the Arabs; and are an unſettled, wandering tribe, who frequent the Gordian mountains, and the deſerts of Curdiſtan, a province of Perſia. They often change their habitations, and live in black tents made of goats' hair, and encompaſſed with large ruſhes and thorns interwoven. They diſpoſe their tents in a circle, placing their flocks in the middle. The buy their wives; the ſtated price whereof is two hundred crowns, be they better or worſe. They are allowed divorce, provided it be to become faquirs. It is a crime among them to ſhave their beard, though ever ſo little. They have ſome cuſtoms which intimate that they ſprung originally out of ſome ſect of Chriſtians: for inſtance, in their feaſts one of them preſents a cup full of wine to another, bidding him take the cup of the blood of Jeſus Chriſt; which laſt kiſſes the hand of him who preſents it, and drinks.

JEZIERNICA, in *Geography*, a town of Lithuania, in the palatinate of Novogrodek; 40 miles S.W. of Novogrodek.

JEZIOROCZE, a town of Lithuania, in the palatinate of Wilna; 32 miles W.N.W. of Braſlaw.

JEZORA, a town of Lithuania, in the palatinate of Troki; 12 miles N.E. of Grodno.

JEZREEL, in *Scripture Geography*. See ESDRÁELON.

IF, in *Geography*, a ſmall, fortified, and garriſoned iſland in the Mediterranean, near the coaſt of France, at the entrance of the port of Marſeilles.

IFFEBAN, a town of Perſian Armenia; 138 miles E.N.E. of Erivan.

IFFROS, a town of Arabia, in the province of Yemen; 12 miles E.S.E. of Taas.

IFLAMABAT, a town of Hindooſtan, in the country of Bengal; 124 miles S.S.E. of Dacca.

IFRAN, or UFARAM, a town and diſtrict of Africa, near the Atlantic, belonging to Morocco; 40 miles S.W. of Non.

IFVER KYLEE, a town of Sweden, in the province of Tavaſtland; 26 miles N.N.E. of Jamſio.

IGA, a ſea-port town of Japan, in the iſland of Niphon, and bay of Owari; 85 miles S.E. of Meaco. N. lat. 35° 10'. E. long. 138°.

IGARIPE, a river of Brazil, which runs into the Paraguay.

IGALSHA, one of the ſmaller Shetland iſlands, near the W. coaſt of Mainland. N. lat. 60° 57′. W. long. 1° 48′.

IGAT, a ſmall iſland in the Eaſt Indian ſea. S. lat. 7° 11′. E. long. 130° 35′.

IGEIALIN, a ſmall iſland in the ſtrait between Ruſſia and America. N. lat. 65° 40′. E. long. 189° 36′.

IGGON, a ſmall iſland on the W. ſide of the gulf of Bothnia. N. lat. 60° 43′. E. long. 17° 7′.

IGILGILI, in *Ancient Geography*, a town of the eaſtern part of Mauritania Cæſarienſis, ſituated near the promontory which forms the bay of Saldæ, to the eaſt. It has been epiſcopal. See Jijel.

IGILLIUM, now *Giglio*, an iſland of Italy, in the vicinity of that of Dianium, towards Etruria. The thick woods of this iſland ſerved as a place of refuge for a great number of Romans, who fled from the ſack of Rome by Alaric.

IGLAU, in *Geography*, a town of Moravia, capital of a circle of the ſame name, which contains 21 towns, 294 villages, and 6433 houſes. The town is well built, fortified, and populous; and contains 1196 houſes, two convents, and a village. The cloth manufactured in this town is good, and is conveyed to Italy by Trieſte. The town has alſo conſiderable commerce in corn and hemp; 62 miles S.E. of Prague. N. lat. 49° 25′. E. long. 15° 30′.—Alſo, a river of Moravia, which runs into the Teya near Muſchau.

IGLORSOIT, a town of Eaſt Greenland. N. lat. 61° 25′. W. long. 45° 10′.

IGNATEVSKOE, a town of Ruſſia, in the government of Ekaterinoſlav; 40 miles S. of Bachmut.

IGNATIA, in *Botany*, ſo named in the *Supplementum* of Linnæus, becauſe the ſeeds are known in the *Materia Medica* by the name of *Faba Sancti Ignatii*, or St. Ignatius's Beans. Linn. Suppl. 20. Schreb. 135. Willd. Sp. Pl. v. 1. 1053. Mart. Mill. Dict. v. 2. Gærtn. t. 179. Claſs and order, *Pentandria Monogynia*. Nat. Ord. *Apocineæ*, Juſſ. Brown.

Gen. Ch. *Cal.* Perianth inferior, of one leaf, ſhort, bell-ſhaped, with five upright, ovate, blunt teeth. *Cor.* of one petal, funnel-ſhaped; tube thread-ſhaped, a ſpan long, ſmooth, erect; limb flat, in five deep, oblong, obtuſe, entire ſegments. *Stam.* Filaments five, inſerted into the receptacle, as long as the tube, thread-ſhaped, very ſmooth; anthers cohering in the form of an oblong, acute, hiſpid, five-ſided tube. *Piſt.* Germen minute, ſuperior, ovate, ſmooth; ſtyle thread-ſhaped, the length of the ſtamens; ſtigma in two deep awl-ſhaped diviſions. *Peric.* Berry large, pear-ſhaped, ſmooth, of one cell, with a thick woody coat. *Seeds* numerous, ſmooth, crowded, hard, oblong, ſomewhat angular; the plumula ſtalked.

Eſſ. Ch. Calyx inferior, five-toothed. Corolla with a very long tube. Berry coated, of one cell, with many ſeeds.

1. I. *amara*. Linn. Suppl. 149. (Ignatiana philippina; Lour. Cochinch. 126.)—Native of the Eaſt Indies.—A *tree*, with long, twining, copious, ſmooth branches. *Leaves* oppoſite, ſtalked, ovate, entire, a ſpan long, very ſmooth. *Panicles* axillary, ſmall. *Flowers* very long, drooping, white, ſcented like jaſmine. *Fruit* the ſize and ſhape of a middling pear. *Seeds* ſcarcely an inch long, very bitter, celebrated as a cure for weakneſs in the ſtomach, and for intermitting fevers.

Juſſieu refers this plant to the genus *Strychnos*, but Gærtner points out the ſtalked cotyledons (or plumula), as almoſt peculiar to it, and not found in that genus.

IGNATIUS, in *Biography*, one of the apoſtolical fathers, was biſhop of Antioch, in Syria, towards the latter part of the firſt and the beginning of the ſecond century. According to Euſebius and St. Jerom, he ſucceeded Euodius in the ſee of Euodius, having been ordained, ſays the former, in the year 69, after the death of Peter and Paul at Rome, or, as others ſay, by Peter; and hence we may conclude, that he was acquainted with ſeveral of the apoſtles. Indeed, St. Chryſoſtom ſays, that he converſed familiarly with them, and was perfectly acquainted with their doctrine. This venerable man was condemned, in the perſecution of Trajan, to be devoured by wild beaſts in the public theatre at Rome, whither he was brought from Syria by the emperor's order for this purpoſe. The time of his martyrdom has been placed by Euſebius, and after him by Dupin, Tillemont, Cave, and Lardner, in the 10th year of Trajan, A. D. 107; but by Pearſon, Loyd, Pagi, Le Clerc, and Fabricius, in 116: the former, however, is thought to be the moſt probable opinion concerning the time of his death. Euſebius and Jerom mention ſeven epiſtles written by this father, and beſides theſe, other epiſtles have been aſcribed to him which are univerſally ſuppoſed by learned men to be ſpurious. Of the above-mentioned ſeven, there are two editions; one called the larger, and oftentimes the interpolated; and another, called the ſmaller. It is now, ſays Lardner, the general opinion of learned men, that the larger are interpolated, and that the ſmaller have by far the beſt title to the name of Ignatius. The larger, ſays this judicious writer, who compared the two editions, are an interpolation of the ſmaller, and not the ſmaller an epitome or abridgment of the larger. But whether the ſmaller themſelves are the genuine writings of Ignatius, biſhop of Antioch, is a queſtion that has been much diſputed among the ableſt critics. Upon duly conſidering the teſtimonies alleged from Iræneus, Origen, and Euſebius, and alſo the internal characters of ſimplicity and piety, which occur in theſe epiſtles, (*viz.* the ſmaller), Dr. Lardner concludes it to be probable, that they are for the main the genuine epiſtles of Ignatius. As to the time in which they were written, this is determined by that of his martyrdom. For they were written after he was condemned to the wild beaſts, and whilſt he was conducted as a priſoner from Antioch to Rome. Theſe epiſtles are now extant in Greek, and in an ancient Latin verſion, which latter was publiſhed by archbiſhop Uſher in 1664. In 1646, Iſaac Voſſius publiſhed ſix of the ſeven epiſtles in Greek, from a MS. at Florence: the epiſtle to the Romans, which was wanting, has been ſince publiſhed in Greek by Ruinart, from a MS. at Paris. In Ignatius's epiſtles there are frequent alluſions and references to particular books, or texts, of the New Teſtament; and it has been obſerved by ſome learned men, that this ancient writer has made mention of the ſcriptures of the New Teſtament under ſome general names and diviſions. Lardner's Works, vol. ii.

Ignatius is ſaid by Socrates, the eccleſiaſtical hiſtorian, lib. vi. cap. 8. "to have eſtabliſhed antiphonal ſinging at Antioch, from a viſion, in which he ſaw the bleſſed ſpirits above ſinging hymns to the ſacred Trinity, alternately; which method of ſinging," ſays the ſame author, "Ignatius taught to the church; and this, together with the account of the miracle which gave riſe to it, was communicated to all the churches of the Eaſt."

Nicephorus, St. Chryſoſtom, Anaſtaſius, and many others, acquieſce in this account of the origin of antiphonal ſinging, as do our countrymen Hooker, Hammond, Beveridge, and Dr. Comber.

Ignatius Loyola. See Jesuits.

Ignatius's *Bean*, *Faba Sancti Ignatii*, in the *Materia Medica*, the fruit of a plant growing in the Eaſt Indies and Philippine iſlands, deſcribed by father Camilli, in the Philoſophical Tranſactions, under the name of Catalongay, and Cantara; and by Plukenet, under that of Cucurbitifera malabathri foliis ſcandens, cujus nuclei faba ſancti Ignatii nuncupati. The Spaniards call it *cathalogon*. It is a dry and hard fruit, or kernel of a fruit, of the ſize of a large hazel nut; and is much celebrated for its medicinal virtues, being recommended in vertigoes, lethargies, epilepſies, aſthmas, quartan agues, and worms. It is alſo given againſt diſtemperatures of the ſtomach, and as an alexipharmic. The doſe in ſubſtance, as an emetic, is ten or twelve grains; and in ſmaller doſes it ſometimes promotes a plentiful ſweat: Neumann ſays that he has known intermitting fevers cured, by drinking, on the approach of a paroxyſm, an infuſion of ſome grains of the ſeed in carduus water; and Dr. Lewis has been informed, that two grains were found to have as much effect as a full doſe of bark. But it ſeems too hazardous for general uſe. See Nux *Vomica*, Strychnos, and Ignatia.

IGNAVUS, in *Natural Hiſtory*, a name given to the animal called in Engliſh the ſloth. See Bradypus and Sloth.

IGNIARIUS Lapis, a name given by ſome to the pyrites, or fire-ſtone, from its yielding a great quantity of ſparks when ſtruck againſt ſteel.

IGNICOLÆ, *Worſhippers of Fire*. See Gabres.

IGNIS Aqua, *Fire-Water*, a name by which Helmont, in ſome of his writings, calls the alkaheſt, or univerſal diſſolvent, ſo much talked of by him and Paracelſus.

Ignis *Fatuus*, a common meteor, chiefly ſeen in dark nights frequenting meadows, marſhes, and other moiſt places, and often ſeen in burying-grounds, and near dunghills. It is known among the people by the appellations *Will with a Wiſp*, and *Jack with a Lanthorn*.

Sir Iſaac Newton calls it a vapour ſhining without heat; and it has been ſuppoſed to be of the ſame nature with the light iſſuing from putreſcent ſubſtances. Willughby and Ray were of opinion that it is occaſioned by ſhining inſects: but all the appearances of it obſerved by Dr. Derham, Beccaria, and others, ſufficiently evince, that it muſt be an ignited vapour. The form and ſize of the ignes fatui are very various and often variable. The late experiments on air ſerve to furniſh a rational explication of this phenomenon, to which the ignorant and ſuperſtitious have aſcribed ſo many alarming purpoſes. Inflammable air has been found to be the moſt common of all the factitious airs in nature; and to be the uſual product of the putrefaction and decompoſition of vegetable ſubſtances in water: and ſignior Volta, in a letter to Dr. Prieſtley, informs him that he fires inflammable air by the electric ſpark, even when the electricity is very moderate: and he ſuppoſes, that this experiment explains the inflammation of the ignes fatui, provided they conſiſt of inflammable air iſſuing from marſhy ground by the help of the electricity of fogs, and by falling ſtars, which are very probably thought to have an electrical origin. (Prieſtley's Obſ. on Air, vol. iii. Appendix, p. 382.) The reader will find a particular account of various particulars relating to the ignis fatuus, in the Phil. Tranſ. Abr. vol. vii. p. 147, &c.

Dr. Shaw deſcribes an ignis fatuus, which he ſaw in the Holy Land, that was ſometimes globular, or in the form of the flame of a candle; and immediately afterwards ſpread itſelf ſo much as to involve the whole company in a pale inoffenſive light, and then contract itſelf again, and ſuddenly diſappear. But in leſs than a minute it would become viſible as before; or, running along from one place to another, with a ſwift progreſſive motion, would expand itſelf, at certain intervals, over more than two or three acres of the adjacent mountains. The atmoſphere at this time had been thick and hazy, and the dew on their bridles was unuſually clammy and unctuous.

In the ſame weather, he obſerved thoſe luminous appearances, which, at ſea, ſkip about the maſts and yards of ſhips, and which the ſailors call *corpuſanſe* by a corruption of the Spaniſh *cuerpo ſanto*. Shaw's Travels, p. 393.

Ignis *Gehennæ*, in *Chemiſtry*, a name given by Paracelſus to a certain menſtruum, capable of diſſolving all bodies, and remaining itſelf unaltered by them.

Van Helmont ſeems to make this the ſame with the alkaheſt, ſo celebrated in his writings, and ſo ardently ſought after by all the chemiſts ſince his time.

Ignis *Judicii*. See Judicium *Dei*, and Ordeal.

Ignis *Sacer*, literally *holy fire*, in *Medicine*, an appellation which has been given, from ancient times, to various diſeaſes, of which external redneſs and heat, followed by ulceration or gangrene, ſeem to have been the principal characteriſtics.

Other appellations have been uſed as nearly ſynonymous with this; ſuch as *ignis Sancti Antonii, ſeu St. Antoine*, or *St. Anthony's fire*, *morbus ardentium*, or *mal des ardens*, &c. By different writers, however, theſe terms have been applied to diſeaſes of conſiderable difference of character, by which much confuſion has been produced. We have already ſtated that the word *ſacer*, or ſacred, was employed to denote any thing *great*; and was uſed as an epithet to diſeaſes of uncommon ſeverity and duration, which, as Aretæus obſerves, ſeem to require more than human power to cure them (ſee Epilepsy), and were often conſidered as inflictions of the divine vengeance. The name of St. Anthony ſeems to have been firſt aſſociated with an epidemic and fatal diſeaſe, which prevailed in many parts of France, and eſpecially in Dauphiné, about the end of the 12th century, when the religious houſes of the order of St. Anthony were uſed as hoſpitals for thoſe who were attacked with the diſeaſe. (Mezeray, Abrégé Chronologique.) It was the popular opinion in France, in the 12th and 13th centuries, that all the patients, who were conveyed to the abbey of St. Anthony, which had been recently founded at Vienne, in the province juſt mentioned, where the bones of this ſaint had been depoſited, were cured in the ſpace of ſeven or nine days. It is ſtated (in the "Hiſtoire des Ordres Monaſtiques," tom. i. p. 337.) that in 1702, there were ſtill ſome black and withered limbs which had been preſerved in that abbey from the period alluded to. Similar maladies were epidemic both at an earlier and later period: and it appears from a memoir by M. Le Comté, phyſician to the abbey at Vienne, that the ſame diſeaſe prevailed in Dauphiné in 1709. This phyſician affirms that the diſeaſe might be cured by judicious medical treatment; but that the moſt certain relief was obtained by addreſſing a vow to St. Anthony. See a full and able hiſtory of the ſubject in the "Memoires de la Societé Royale de Médécine de Paris," tom. i. p. 260. by M. M. de Juſſieu, Paulet, Saillant, and the abbé Teſſier, who were nominated by the ſociety to inveſtigate it.

From this circumſtance, it would appear that the *eryſipelas*, which conſiſts of an inflammation of the ſkin, accompanied by the riſing of large bliſters, analogous to thoſe produced by the action of fire, whether in burning or ſcalding, has obtained in this country the appellation of *St Anthony's Fire*. It is not, however, the diſeaſe above alluded to as formerly epidemic in France.

The Latins underſtood by the term *ignis ſacer* the eryſipelas of the Greeks, as well as the *zona*, or *Herpes zoſter*, which we call *ſhingles*. See Celſus, De Med. lib. v. cap. 28, who places the diſeaſe among the *mala ulcera*, and mentions two ſpecies, one of which is apparently the *zoſter* — Alſo, Marcellus, de Medicamentis, cap. xx.—Plin. Nat. Hiſt. lib. xxvi. cap. 2. See Herpes.

It would appear, that the confuſion among modern writers above mentioned, has ariſen from the application of the terms ignis ſacer, feu ſacré, feu St. Antoine, and mal des ardens, to *three* varieties of diſeaſe, eſſentially diſtinct from each other, excluſive of the eryſipelas: theſe are the common plague, the dry gangrene, or *ergot*, and the *raphania*. The two firſt, it appears, were prevalent about the ſame periods, in the tenth, eleventh, and twelfth centuries, affecting chiefly the lower claſſes of the people; whence hiſtorians have confounded the ſymptoms of the two maladies. But from the inveſtigation of M. M. Juſſieu, &c. it is obvious that the diſeaſe, more particularly deſignated by the title of "mal des ardens," was an *acute* peſtilential fever, attended with extreme heat, and with buboes in the groin, *i. e.* the *peſtis inguinaria*, or *inguinalis*, or, in the words of Mezeray, *peſte qui prenoit en l'aine;* which was alſo "the plague" deſcribed by Ambroſe Paré, Boccacio, Guy de Chauliac, Vinarius, &c. in the 14th century. This was likewiſe the opinion of Aſtruc. But the ſecond, *ignis ſacer*, or feu St. Antoine, was, in fact, a *chronic* diſeaſe, of conſiderable duration, accompanied by ſevere pain, and terminating in a ſhrivelling and drying of one or more of the limbs, which became black, and ultimately dropped off, if the life of the patient ſurvived.

In the *mal des ardens*, or plague, no drying or dropping off of the limbs occurred; and in the *feu ſacré* no inguinal buboes, or acute fever. In ſhort, the latter was obviouſly the diſeaſe which was ſubſequently denominated *ergot*, and has been attributed, by the majority of writers on the ſubject, to the uſe of rye as aliment, which was affected with the diſeaſe ſo named, to which that grain is liable. (See Ergot in *Agriculture* and *Medicine*.) Notwithſtanding what has been maintained by the majority of authors, as ſtated in the article juſt referred to, it ſeems probable that this diſeaſe, which has been alſo called the *dry gangrene*, originated rather from a ſtate of ſtarvation, or imperfect nutriment, than from the *ergoted* rye in particular. "For it occurred only after unfavourable ſeaſons, when dearth prevailed, and was augmented by wars; and it afflicted almoſt excluſively the labouring people, the peaſantry, and mendicants; who," as M. Gaſſoud obſerves, "in order to avoid actual famine, were compelled to live upon a ſort of bread made of the meal of acorns, of grape-ſtones, of the roots of fern, and other ſuch crude and unnutritious ſubſtances." Camerarius poſitively aſſerts, that this gangrene was obſerved in the extremities of perſons who had certainly not eaten any ergoted rye. (See Acad. Natur. Curioſ. Cent. iv. Obſ. 82.) It was probably to theſe dry and contracted limbs that the term *ſceletyrbe* was applied by Pliny and Galen, as well as to thoſe which occur in the laſt ſtages of ſcurvy, rather than to the ſpaſmodic contractions in St. Vitus's dance, or *Chorea Sti. Viti*, to which they have ſince been applied. (See Chorea.) Theſe contractions occurred among the Roman ſoldiers in Germany, and were attributed to the uſe of water from a particular ſpring (ſee Pliny Nat Hiſt. lib. xxv. c. 3); but more probably originated from imperfect nutriment.

A third diſeaſe, which has been ſeveral times epidemic in Germany and Sweden, and ſeems to differ materially both from the common plague and from the dry gangrene, has been attributed by ſome to the *ergot* of rye, and confounded, under the title of *ignis ſacer*, and *ergot*, with the dry gangrene. This is a febrile diſeaſe, which is ſaid to begin with an intenſe heat, accompanied with a ſenſe of *formication*, or of the creeping of inſects over the ſkin, which is followed by acute pains in the limbs, and convulſive contractions of the muſcles. This diſeaſe is ſaid to attack in ſucceſſive paroxyſms, after ſeveral of which it terminates by a violent ſweating, or diarrhœa. If it continued long, it degenerated into epilepſy or palſy. The ſweating ſickneſs of England, and the morbus Hungaricus, ſeem to have partaken of the nature of this fever; and to have originated, like it, in the uſe of corrupted and imperfect aliment, when every unfavourable ſeaſon produced a famine. Many writers, however, were perſuaded that it originated from the *ergot* of rye; while others attributed it to the *honey-dew* and *blight, uſtilago*, with which the corn and herbs were affected. The malady was epidemic in Sweden in 1746 and 1754, when it was obſerved that the *raphanus raphaniſtrum* grew in great abundance among barley; and Linnæus, ſuſpecting this to be the cauſe of the diſeaſe, fed ſome fowls with the ſeeds, which were ſaid to become convulſed; whence he gave the name of *Raphania* to the diſeaſe, which was adopted by Dr. Cullen. (Lin. Amœnit. Acad. vol. v. Cullen Noſol. Method. Gen. li.) It was called *Morbus convulſivus epidemicus* by the Marpurg profeſſors, and from the ſenſe of formication, was popularly termed, in Germany, *die kriebel krankheit*. (See Gregor. Horſt. Opera, tom. ii. lib. viii. Obſ. 22. Cullen Noſol. with the numerous references there given; and particularly the paper of M. Saillant, in the Mem. de la Soc. Roy. de Med. tom. i. p. 303; likewiſe the genera of Eclampſia, ſp. 1. *typhodes*, and Convulſio, ſp. 8. *ab uſtilagine*, in the Noſology of Sauvages.) It may, perhaps, be again queſtioned, however, whether, in theſe experiments of Linnæus, and in thoſe of the abbé Teſſier before mentioned (ſee Ergot), the animals fed with the ſeeds of the raphaniſtrum and ergoted rye were not rather ſtarved, for want of nutritious food, than poiſoned by that which was deleterious. Is it probable that the rye, through extenſive provinces, ſhould be all affected with the ergot, ſo as to produce a general epidemic? Is not the diſappearance of the diſeaſe in our own times rather to be attributed to the general improvements in agriculture, which have rendered dearth leſs frequent and extenſive, and to the increaſe of commerce, which has facilitated the ſupplies of nutritious food, to make up for theſe partial deficiencies, than to the diſappearance of the diſeaſes of corn? See Raphania.

Ignis, *St. Antonii*. See Eryſipelas.

IGNISPICIUM, among the *Romans*, a ſpecies of divination taken from the fire uſed in ſacrifices. See Pyromancy.

IGNITION, in *Chemiſtry*, the application of fire to metals, till ſuch time as they become red-hot without melting. This happens in gold and ſilver; but eſpecially in iron; but lead and tin are too ſoft and fuſible to bear ignition.

IGNORAMUS, q. d. *We do not know;* in *Law*, a word uſed by the grand jury, impannelled on the inquiſition of cauſes criminal, and formerly written upon the bill, when they diſlike their evidence, as defective, or too weak to make good the preſentment. But now they aſſert in Engliſh, more abſolutely, "not a true bill," or, which is the better way, "not found."

The effect of which is, that all farther inquiry upon that party for that fault is thereby ſtopped, and he is delivered without farther anſwer. See Billa vera.

IGNORANCE, the privation, or want of knowledge.

Ignorance, according to Mr. Locke, is chiefly owing to three cauſes: want of ideas; want of a diſcoverable connection between the ideas we have; and want of tracing and examining our ideas. See Idea.

There are ſome things we are ignorant of for want of ideas: all the ſimple ideas we have are confined to the obſervation of our ſenſes, and the operations of our own minds, which we are conſcious of in ourſelves. What other ideas it is poſſible other creatures may have, by the aſſiſtance of other ſenſes or faculties, more or perfecter than we have, or different from our's, is not for us to determine; but to ſay there are no ſuch, becauſe we conceive nothing of them, is no better an argument, than if a blind man ſhould be poſitive there was no ſuch thing as light and colours, becauſe he had no manner of idea of any ſuch thing.—What faculties, therefore, other ſpecies of creatures have, to penetrate into the nature and inmoſt conſtitutions of things, we know not; this we know, and certainly find, that we want other views of them, beſides thoſe we have, to make diſcoveries of them more perfect. The intellectual and ſenſible worlds are in this perfectly alike; that the parts which we ſee of either of them, hold no proportion with that we ſee not; and whatſoever we can reach with our eyes, or our thoughts, of either of them, is but a point, almoſt nothing, in comparison of the reſt. Again, the want of ideas, which we yet ſeem capable of, is another great obſtacle in our way, and keeps us in ignorance of things, which we conceive capable of being known. Bulk, figure, and motion, we have ideas of; yet, not knowing what is the particular bulk, motion, and figure, of the greateſt part of the bodies of the univerſe, we are ignorant of the ſeveral powers, efficacies, and ways of operation, whereby the effects we daily ſee are produced. Theſe are hid from us in ſome things, by being too remote; and in others by being too minute.

This, at firſt ſight, ſhews us how diſproportionate our knowledge is to the whole extent even of material beings: to which if we add the conſideration of that infinite number of ſpirits that may be, and probably are, which are yet more remote from our knowledge, and whereof we have no cognizance at all; we ſhall find this cauſe of ignorance conceals from us, in an impenetrable obſcurity, almoſt the whole intellectual world; a greater, certainly a more beautiful world than the material: for, abating ſome very few ideas of ſpirits, which we get from our own mind by reflection, and from thence the beſt we can collect of the Father of all ſpirits, the author of them, and us, and all things, we have no certain information ſo much as of the exiſtence of other ſpirits, but by revelation: much leſs have we diſtinct ideas of their different natures, ſtates, powers, and ſeveral conſtitutions, wherein they agree or differ one from another, and from us: and therefore, in what concerns their different ſpecies and properties, we are under an abſolute ignorance.

Another cauſe of ignorance is, the want of diſcoverable connexion between thoſe ideas we have: where we want that, we are utterly incapable of univerſal and certain knowledge; and are, as in the former caſe, left only to obſervation and experiment. Thus the mechanical affections of bodies having no affinity at all with the ideas they produce in us, we can have no diſtinct knowledge of ſuch operations beyond our experience; and can reaſon no otherwiſe about them, than as the effects or appointments of an infinitely wiſe agent, which perfectly ſurpaſs our comprehenſion. The operation of our minds upon our bodies is as inconceivable: how any thought ſhould produce a motion in body, is as remote from the nature of our ideas, as how any body ſhould produce any thought in the mind. That it is ſo, if experience did not convince us, the conſideration of the things themſelves would never be able, in the leaſt, to diſcover to us. In ſome of our ideas there are certain relations, habitudes, and connections, ſo viſibly included in the nature of the ideas themſelves, that we cannot conceive them ſeparable from them by any power whatſoever: in theſe only we are capable of certain and univerſal knowledge. Thus the idea of a right-lined triangle neceſſarily carries with it an equality of its angles to two right ones; but the coherence and continuity of the parts of matter, the production of ſenſation in us, of colours and ſounds, &c. by impulſe and motion, being ſuch wherein we can diſcover no natural connection with any ideas we have, we cannot but aſcribe them to the arbitrary will and good pleaſure of the wiſe architect. The things that we obſerve conſtantly to proceed regularly, we may conclude, do act by a law ſet them; though by a law we know not, whereby theſe cauſes work ſteadily, and effects conſtantly flow from them, yet their connections and dependencies being not diſcoverable in our ideas, we can have but an experimental knowledge of them. Several effects come every day within the notice of our ſenſes, of which we have ſo far ſenſitive knowledge; but the cauſes, manner, and certainty of their production, we muſt, for the foregoing reaſons, be content to be ignorant of. In theſe we can go no farther than particular experience informs us of matter of fact; and, by analogy, we gueſs what effects the like bodies are, upon other trials, likely to produce. But as to perfect ſcience and natural bodies (not to mention ſpiritual beings), we are ſo far from being capable of any ſuch thing, that it may be reckoned loſt labour to ſeek after it.

The third cauſe of ignorance is, our want of tracing thoſe ideas we have, or may have; and finding out thoſe intermediate ideas, which may ſhew us what habitude of agreement or diſagreement they may have one with another: and thus many are ignorant of mathematical truths for want of application in inquiring, examining, and by due ways comparing, thoſe ideas.

IGNORANCE, in *Law*, is a want of knowledge of the laws; which will not excuſe a perſon from ſuffering the penalty annexed to the breach of them; becauſe every one is obliged, at his peril, to know the laws of the land. "Ignorantia juris, quod quiſque tenetur ſcire, neminem excuſat," is as well the maxim of our own law, as it was of the Roman. (Plowd. 343. Ff. 22. 6. 9.) The ignorance or miſtake which conſtitutes a defect of will is, when a man, intending to do a lawful act, does that which is unlawful. For here the deed and the will acting ſeparately, there is not that conjunction between them which is neceſſary to form a criminal act. But this muſt be an ignorance or miſtake of fact, and not an error in point of law. Or if a man, intending to kill a thief or houſebreaker in his own houſe, by miſtake kills one of his own family, this is no criminal action (Cro. Car. 538.); but if a man thinks he has a right to kill a perſon excommunicated, or outlawed, wherever he meets him, and does ſo; this is wilful murder according to the principle above ſtated.

IGNOROMOUS, in *Geology*, is a term uſed by Mr. Kirwan (Geolog. Eſſays, p. 161. 274, &c.) to denote the ſubſtances thrown out of volcanos; and in which alſo he includes the materials of pſeudo-volcanic tracts, or thoſe which have been expoſed to accidental fires, like the burning of a ſeam of coals, &c.

IGRANI, in *Geography*, a town of European Turkey, in Dalmatia; 44 miles E.S.E. of Moſtar.

IGRIDI, a town of Aſiatic Turkey, in Caramania, ſituated on a large lake.

IGUALADA, a town of Spain, in Catalonia; 18 miles S.E. of Cervera.

IGUANA, in *Zoology*, the name of a ſpecies of lizard, very frequent in the Weſt Indies. It is an amphibious animal,

mal, of the lizard ſhape, and in colour partly brown and partly grey, in ſome of the animals; and in others of a beautiful green, variegated with black and white ſpots. From its neck to the extremity of its tail, it has a continued ſeries of flat-pointed and ſerrated ſcales, of a fine green colour. Theſe are largeſt at the neck. See Lacerta.

IGUAPE, in *Geography*, a river of Brazil, which runs into the Atlantic, S. lat. 3° 35′. W. long. 38° 56′.

IGUAY, a river of South America, which riſes in Paraguay, and croſſing Brazil, runs into the Atlantic, forming a large eſtuary at its mouth, where it is called "Rio Grande." S. lat. 31° 54′.

IGUEN, a river of Brazil, which runs into the Atlantic, S. lat. 10° 20′.

IGUIDI, a town and diſtrict of Africa, in the country of Sahara; the country is alſo called "Lempta."

IGUINAS, a ſmall iſland in the bay of Panama. N. lat. 7° 40′. W. long. 81° 8′.

IGUIRA, a town of Africa, on the Gold Coaſt, in the country of Soko, near which is dug very fine gold.

IGUITPO, a town of Brazil, in the government of St. Paul.

IGUNSKOI, a town of Ruſſia, near the eaſtern extremity of the continent of Aſia. N. lat. 65° 45′. E. long. 188° 34′.

IGUVIUM, now *Gavio*, in *Ancient Geography*, a town of Italy, in Umbria, ſituated towards the S.W. among the mountains. It was municipal, and at ſome diſtance from it was a temple of the Apennine Jupiter.

JHANSU-JEUNG, in *Geography*, a town, caſtle, and valley of Thibet. The town, if it may be ſo called, conſiſts of a monaſtery, ſituated on the concave ſide of a ſteep rock, and of about 150 houſes, which riſe in rows, one behind the other. They are ſquare, pretty regular in their form, and the whitened walls have a band about their tops, two or three feet broad, of a deep garnet colour, which, with the addition of temples, gilded ornaments, and the decorated dwellings of their ſuperior prieſts, make a very handſome and brilliant ſpectacle. The whole building was ſurrounded by high walls, which were continued along the ridge of the rock, and croſſed by many intermediate gateways or lodgements, ſo as to command the monaſtery, which fronted towards the caſtle, as well as to overlook the other ſide of the rock, which is extremely rugged, and almoſt perpendicular. The vicinity abounds with beggars of all ages and of both ſexes. The caſtle ſtands upon a rock, which, from its perpendicular height, and the irregularity of its cliffs, if not impregnable, muſt at leaſt be extremely difficult to be ſubdued by the aſſaults of any Tartar enemy. The valley of Jhanſu, which is very extenſive, has greatly the appearance of having been once the bed of a lake. It is particularly famous for the manufacture of woollen cloth, for which there is a very great demand. Theſe cloths, which are confined to two colours, garnet and white, ſeldom exceed half a yard in breadth; they are woven very thick and cloſe, like our frieze; they are very ſoft to the touch, for the fleece of their ſheep appears to be remarkably fine, and ſupplies an excellent material. Its ſuperior pliability and warmth induce almoſt all the prieſts, both here and in Bootan, to uſe it for the ſhort veſt which they wear next the ſkin; and thoſe who can afford it have alſo their winter mantle of the ſame. For this manufacture, the valley of Jhanſu, from its central poſition, is very conveniently ſituated, both as to receiving the material and conveying the cloth, when manufactured, to Teſhoo Loomboo, Laſſa, and Bootan. It has, in conſequence, become the principal ſettlement of manufacturers; and it certainly poſſeſſes every natural and eſſential advantage of ſpace, climate, and fertility. It is extremely rich with abundant crops of corn, and exceedingly populous; 130 miles W.S.W of Laſſa. N. lat. 28° 49′. E. long. 89° 32′. Turner's Thibet, p. 227.

IHLE, a river of Brandenburg, which, by the addition of an artificial canal, forms a communication between the Havel, 9 miles W. of Brandenburg, and the Elbe.

IHNE, a river, which riſes from a lake in the New Mark of Brandenburg, paſſes by Stargard, Golnow, &c. and runs into the Dammiſch ſee or Oder, 9 miles below Damme.

JHONSEN, Robert, in *Biography*, an eccleſiaſtic, and a learned muſician, was one of the firſt of our church compoſers who diſpoſed his ſeveral parts with intelligence and deſign. In writing upon a plain-ſong moving in ſlow notes of equal value, which was ſo much practiſed in theſe times, he diſcovers conſiderable art and ingenuity in the manner of treating ſubjects of fugue and imitation; in which kind of writing he ſeems to have been much ſuperior to Taverner.

IHRE, John, public profeſſor of rhetoric and politics in the univerſity of Upſal, was born in March 1707. He was, on account of the early death of his father, chiefly educated under his grandfather, then archbiſhop of Upſal. In 1730, when he had completed his ſtudies, he ſet out on his travels to enlarge his literary acquirements, and improve himſelf by the company and converſation of learned men. In 1733 he returned to Upſal, where he diſputed "De Uſu Accentuum Hebræorum," and was elected a member of the Academy of Sciences. In 1737 he was made public profeſſor of poetry, and in 1748 he was appointed by the king profeſſor of rhetoric and politics; an office, the duties of which he diſcharged for 40 years with great reputation, and with much real benefit to his pupils. In the year 1756 king Adolphus Frederick raiſed him to the rank of a counſellor of the chancery; two years after to that of patrician; and in 1759 conferred on him the order of the Polar Star. He died in 1780 in the 74th year of his age. He was author of many works, which will be laſting monuments of his great learning and indefatigable induſtry. In the year 1756 he undertook a Sueco-Gothic Lexicon, and began to arrange the materials which he had been preparing for the purpoſe. In 1766 he publiſhed a "Lexicon Dialectorum," in which he explained and illuſtrated obſolete words, ſtill uſed in the provinces; and in 1769 his "Gloſſarium Sueco-Gothicum" was publiſhed in two volumes folio. Sweden is indebted to him for many other works, particularly for an explanation of the old catalogue of the Sueco-Gothic kings, to which are added the Old Weſt-Gothic Laws. In his diſſertations "De Runorum Antiquitate, Patria, Origine, et Occaſu" he aſſerts that the Runic writing was formerly uſed in the greater part of Europe, was introduced into Sweden about the ſixth century, and became entirely extinct in the beginning of the 15th. He was poſſeſſed of a ſound judgment and a retentive memory; and ſo clearly were his ideas arranged, that he had never any need to correct what he had compoſed. He was of a mild diſpoſition, loved innocent mirth, had an open friendly heart, and entertained the utmoſt reverence for the Supreme Being.

JHYLUM, in *Geography*, a town of Hindooſtan, in Lahore; 73 miles N.N.W. of Lahore.

Jhylum *River*. See Behut.

JIB, in a *Ship*, is the fore-moſt ſail of it, being a large ſtay-ſail extended from the outer end of the bowſprit, prolonged by the jib-boom, towards the fore-top-maſt head.

Jib-*Boom* is a boom run out from the extremity of the bow-ſprit, parallel to its length, and ſerving to extend the bottom of the jib, and the ſtay of the fore-top-gallant-maſt. It is attached to the bowſprit by means of two large boom-irons, or by one boom-iron, a cap on the outer end of the bow-ſprit; or by the cap without, and a ſtrong laſhing within.

JIBBEL-Auress, in *Geography*. See Auress.

Jibbel-*Deera*, a mountain of Algiers, in the province of Titterie; 50 miles S.S.E. of Algiers.

Jibbel-*Karkar*, a range of rocky mountains in the weſtern province of Algiers; 20 miles N.E. of Tremecen.

Jibbel-*Dwee*, a mountain of Africa, in the weſtern province of Algiers; S. of El Khadarah.

Jibbel-*Iſkell*, a mountain of Africa, in the northern part of Tunis, anciently mount Cerna; about 15 miles S.W. of Bizerta.

Jibbel-*Muſtewah*, a mountain of Algiers, in the province of Conſtantina, the chief abode of a clan of Kabyles, called Welled-Abdenore; 45 miles S. of Conſtantina.

Jibbel-*Seilat*, a mountain of Africa, in the Sahara; 78 miles S S.E. of Algiers.

JIB-BELEAH, a range of mountains of Africa, forming a boundary between Tunis and Tripoli.

JIBING. See Gybing.

JIDDA, in *Geography*, a ſea-port town of Arabia Felix, in the ſherriffate of Mecca, ſituated on the Red ſea, and firſt ſurrounded with walls by Sultan El Guri in 1514, in order to protect it from the Portugueſe, who were then beginning to become formidable on the Red ſea. Although the walls are ſtill ſtanding, and alſo the bridges, they are now in a ruinous ſtate. The palace of the Pacha is but an indifferent building; but there are other fine buildings in the town, conſtructed of coral ſtone. The other houſes are ſlight wooden fabrics. As Jidda is entirely deſtitute of water, the inhabitants are ſupplied with that which is collected by the Arabs in reſervoirs among the hills, and brought by them from thence upon camels. The dreſs of perſons of diſtinction reſembles that of the Turks in Cairo; but the poorer ſort wear only a ſhirt without breeches. The dreſs of the women is that of the Arabian females in general; large drawers, a flowing ſhirt, and a veil. The employment of many of the poorer ſort is fiſhing, from which they earn but a ſcanty ſubſiſtence. The country round Jidda is ſandy and barren; and the ſea ſeems to have receded from the land here as well as in other places, as, at a certain diſtance from the ſhore there are hills compoſed of coral-rock, reſembling the banks of coral lying along the coaſt. The Arabs have a ſingular method of taking wild ducks in the harbour; the perſon who is in ſearch of the game ſtripping himſelf, and covering his head with ſea-weeds, and thus approaching the ducks, which, unalarmed at the ſight of the weeds, he ſeizes by the feet. As Jidda is part of the dominions of the ſherriffe of Mecca, the Turkiſh ſultan ſends a Pacha to this city; but the ſupreme authority is ſhared between the ſherriffe and the Turkiſh governor, who is annually changed. The revenue ariſing from the cuſtoms is divided between the ſultan and the ſherriffe. The dues of cuſtom are fixed at 10 per cent. upon the value of the goods, arbitrarily eſtimated, ſo that they may be really conſidered as equal to 12 or 15 per cent. The Engliſh, however, are particularly favoured, even more than the ſubjects of the ſultan; they pay only eight per cent. and are ſuffered to diſcharge this in goods, whereas all others muſt produce money. Although the trade of Jidda is conſiderable, this city is no more than a mart between Egypt and India. The ſhips from Suez ſeldom proceed farther than this port; and thoſe from India are not ſuffered to advance to Suez. The circumjacent country affords nothing but Taif almonds for objects of traffic; and of theſe the Engliſh carry 500,000 weight annually to India. Balm of Mecca is alſo brought hither from the neighbourhood of Medina, as an article for exportation. The imports are greater, becauſe both Mecca and Medina are to be ſupplied from this market. Large quantities of corn, rice, lentiles, ſugar, oil, &c. are imported from Egypt, without which this part of Arabia could not poſſibly be inhabited. All goods from Europe come alſo by way of Egypt; and, on the other hand, thoſe which are brought hither from India, paſs generally into Egypt. No money is coined in this province; the ſpecie current here is altogether foreign, and the ſame as at Conſtantinople and Cairo. But the larger coins paſs at a higher rate here than at Cairo, becauſe ſmall money, brought by the pilgrims, is more plentiful here than even where it is coined. The trading janizaries in this place are properly merchants, who are protected by the privileges of that body in which they are enrolled from the impoſitions to which this traffic would otherwiſe be liable; but they perform no military duty, and receive no pay. N. lat. 21° 17′. Niebuhr. Bruce.

JIDGER, a river of Hindooſtan, probably the ſame with the Selima, which runs on the weſt of Sirhind to the ſouth, towards Soonam, about 60 miles S.W. of Sirhind; between which and the Setlege a canal was formed by Feroſe.

JIDMEELAH, a town of Algiers; 28 miles W.S.W. of Conſtantina.

JIDOON, a diſtrict of Aſia, ſituated on the E. ſide of the river Sindé, on the borders of Cachemire and Thibet.

JIG, in *Muſic*, implies both a dance and a tune, generally in rapid triplets of $\frac{6}{8}$, $\frac{9}{8}$, or $\frac{12}{8}$. See Giga.

JIGAT, or Juggat *Point*, in *Geography*, a cape of Hindooſtan, forming the weſtern extremity and fifth diviſion of Guzerat, on which point is a pagoda. N. lat. 22° 23′. E. long. 68° 12′.

JIGGER, in *Sea Language*, is a machine conſiſting of a piece of rope about five feet long, with a block at one end, and a ſheave at the other; and uſed to hold on the cable, when it is heaved into the ſhip by the revolution of the windlaſs. See Holding *on*.

Jigger-*tackle*, is a light ſmall tackle, conſiſting of a double and ſingle block, uſed on various occaſions by ſeamen.

JIGGUROON, in *Geography*, a town of Hindooſtan, in the circar of Sirhind; 23 miles W.S.W. of Sirhind.

JIGNI, a town of Hindooſtan, in the circar of Gohud; 18 miles S.S.E. of Kooch.

JIG-PIN, in *Mining*, is a pin of wood, which the drawers of ore or coals, &c. by ſtowſes or turn-beams, put into a hole, to prevent the handleſs turning round, when it is wiſhed to ſuſpend the barrel or corve in or over the ſhaft.

JIHON, in *Geography*. See Amu and Oxus.

JIJEL, a town of Algiers, in the province of Conſtantina, now reduced to a few houſes and a ſmall fort, in which the Turks have a ſmall garriſon: it is ſituated on a point of land near the ſea; 30 miles E.N.E. of Boujeiah. This was formerly called *Igilgili*, which ſee. N. lat. 36° 56′. E. long. 6°.

JILGOUN, a town of Aſiatic Turkey, in the province of Caramania; 28 miles E. of Akſerai.

JILLIFREE, a town of Africa, in the kingdom of Barra, on the banks of the Gambia. N. lat. 13° 16′. W. long. 16° 7′.

JIMMALI, a town of Abyſſinia; 40 miles S. of Miné.

JIMMEL, a town of Africa, in the kingdom of Tunis, anciently called "Tegæa;" 11 miles S.W. of Lempta.—Alſo, a town of Algiers, 33 miles S.W. of Conſtantina.

JIMMELAH, a town of Africa, anciently "Gemella," near which are magnificent ruins, the remains of an amphitheatre, &c.; 27 miles S.S.W. of Conſtantina.

JINBALA, or Guinbala, a kingdom of Africa, being an iſland formed by two branches of the Niger, which ſeparate at leaving the lake Dibbie, and again unite about 15 miles from Tombuctoo. It is of an oval form, about 80 miles long, and about 40 in its greateſt breadth. The country is ſaid to be fertile, and abounding ſo much with ſwamps and creeks, that the Moors have not been able to ſubdue it. The inhabitants are negroes. Its capital is Jinbala, ſituated on one branch of the Niger, and ſerving as a reſting place for merchants, who trade between Tombuctoo and the weſtern parts of Africa. N. lat. 16° 4'. E. long. 0° 16'.

JINCUGHI, a town of Aſiatic Turkey, in Natolia; 18 miles N. of Kiutaja.

JINDEYA, a town of Africa, in the country of Woolly; 30 miles W.S.W. of Medina.

JINGLER, a town of Hindooſtan, in Oude; 33 miles S.E. of Gooracpour.

JINNETT, a ſea-port town of Algiers, in the province of Titterie, ſituated on a ſmall creek of the Mediterranean, at the mouth of the Yiſſer. Great quantities of corn are annually exported from this part to Europe; 33 miles E. of Algiers. N. lat. 36° 43'. E. long. 4° 10'.

JINZO, a town of Spain, in Galicia; 12 miles S.E. of Orenſe.

JINZOOWARAH, a town of Hindooſtan, in the country of Guzerat; 40 miles S. of Janagur.

IJO, a town of Sweden, in the government of Ulea; 20 miles N. of Ulea.—Alſo, a town of Japan, in the iſland of Xicoco. N. lat. 34°. E. long. 134° 10'.

JIONPOUR, a circar of Hindooſtan, in Allahabad, about 50 miles long and 30 broad.—Alſo, the capital, which is a ſmall city on the Goomty river; about 40 miles N.W. of Benares, and on the road from that city to Fyzabad. N. lat. 25° 46'. E. long. 82° 55'.

JIOSORRA, a town of Africa, in Bambarra. N. lat. 14° 38'. E. long. 3° 40'.

JIRBAN, a town of Arabia, in Yemen; 8 miles N.W. of Sana.

JIRREE, a town of Hindooſtan, in the circar of Gohud; 25 miles W. of Narwa.

JIRWARY, a town of Hindooſtan, in the circar of Gohud; 7 miles S.W. of Gwalior.

JITTIS, a town of Sweden, in the province of Tavaſtland; 62 miles E. of Tavaſthus.

JIVANI, a name of the Hindoo regent, or god of fire, correſponding in many points with the Vulcan of weſtern mythologiſts. Another of his names is *Pavaka*, which ſee.

JIYA, in *Zoology*, the name of an American animal, of the otter-kind, called alſo *carigueibeiu*. It is an amphibious creature, of the ſize of a middle-ſized dog. Its head is round, and like a cat's; but its noſe is ſomewhat pointed; its eyes are black; its ears roundiſh, and placed very low as in the otter; and it has a ſort of beard or whiſkers, compoſed of a few ſtiff hairs; the feet have all five toes, the inner one being ſmaller than any of the others: the hair is ſoft, not long, and all black, except thoſe on the head, which are brown, and ſome which compoſe a yellowiſh ſpot under the throat. Its note is much like that of a young puppy. It feeds on fiſh, and other animals. Ray.

IK, in *Geography*, a river of Ruſſia, which runs into the Kama.—Alſo, a river of Ruſſia, which runs into the Sakkara.

IKALIS, a town of Sweden, in the government of Abo; 40 miles E.N.E. of Biorneborg.

IKARUNGA, a town of Japan, in the iſland of Niphon; 75 miles N. of Meaco. N. lat. 36° 16'. E. long. 136°.

IKDER, a town of Aſiatic Turkey, in Natolia; 30 miles S. of Satalia.

IKEIKANI, a town of Aſiatic Turkey, in Natolia; 65 miles E. of Conſtantinople.

IKENDA, a town of Japan, in the iſland of Niphon; 140 miles W.N.W. of Jedo.

IKENILD Street, one of the four famous ways that the Romans made in England. See Watling-Street.

IKLERA, in *Geography*, a town of Hindooſtan, in Katchwara; 34 miles E.N.E. of Saurungpour.

IKOLLA, a province of Africa, in the kingdom of Angola, E. of Loanda.

IKON, a town of Africa, on the Gold coaſt, where the Dutch have a factory.

IKTIMAN, a town of European Turkey, in Bulgaria; 25 miles E.S.E. of Sofia.

IKUA, a town of Japan, in the iſland of Ximo; 50 miles N.N.E. of Nangaſaki.

ILA, Ilay, *Iſla*, or *Iſlay*, is one of the Hebrides, lying to the ſouth-weſt of Jura, and in the county of Argyll, Scotland. It extends twenty-eight miles from north to ſouth, and eighteen from eaſt to weſt. On the eaſt ſide the ſurface is hilly, and covered with heath, but the greater part of the iſland is flat. The coaſt is rugged and rocky, but indented by numerous bays and harbours, which are ſafe landing-places for ſmall veſſels; and at Lochindale is a harbour for ſhips of conſiderable burthen, with a quay, oppoſite to the large village of Bowmore. There are ſeveral lakes; and the iſland is well watered by numerous ſtreams and rivers, abounding with trout and ſalmon. In the centre of the iſland is a lake called Loch Finlagan, three miles in circumference, with the iſlet of the ſame name in the middle, the ancient reſidence of the Macdonalds, the great lords of the iſles; but the palaces and offices are now in ruins. Inſtead of a throne, the chief ſtood on a ſtone ſeven feet ſquare, in which there was a hollow cut to receive his feet: here he was crowned and anointed, in preſence of his chieftains, by the biſhop of Argyll and ſeven inferior prieſts. The ſtone is ſtill preſerved. The ceremony, after the new lord had collected his kindred and vaſſals, was truly patriarchal. Having put on his armour, helmet, and ſword, he took an oath to rule as his anceſtors had done; to govern as a parent would his children: his people, in return, ſwore that they would render him the obedience due to a parent. Anciently, the dominions of this potentate included Iſla, Jura, Colonſay, Mull, Arran, &c.: and the peninſula of Kintyre uſually ſhared the fate of the iſles; for we find that, in 1093, after one of the grants of the kings of Scotland, the lord of the iſles, in order to bring Kintyre within the compaſs of the grant, had his barge drawn under ſail over the iſthmus of Tarbert; after which, conſidering his power, not even the Scottiſh monarch was ſo hardy as to deny that Kintyre was an iſland. About the year 1586, the dominion of the iſles conſiſted only of Iſla, Jura, Kintyre, and Knapdale; ſo reduced was it from its former extent during the reign of James III. Near Finlagan is another little iſle, called Ilan-na-corlle, *i. e.* the iſland of Council, where thirteen judges conſtantly ſat to decide differences between the ſubjects of the Macdonalds, for which they received the eleventh part of the value of the conteſted property.

In the firſt iſle were buried the wives and children of the lords of the iſles: but their own bodies were depoſited in the more ſacred ground of Iona. Beſides the caſtle on the iſland, theſe powerful lords had a houſe and chapel at Lagannon, on the ſide of Loch-in-dal; a ſtrong caſtle on a rock in the ſea, at Dunowaick, at the ſouth-eaſt end of the iſland; for, after their expulſion from the Iſle of Mann, in 1304, they made this iſland their place of reſidence; ſometimes making their abode at Dalreudhain in Kintyre, where the modern burgh of Campbeltown is ſituated. The iſland was formerly divided into four pariſhes, Kilchonan, Kildalton, Killarrow, and Kilmeny; but the two laſt are now united. The total population of the iſland, as ſtated in the ſtatiſtical reports of the three pariſhes in 1793, was 9500. The quadrupeds, enumerated by Mr. Pennant, beſides the domeſtic animals, are weaſels, otters, and hares; the latter dark-coloured, ſmall, and bad runners. The birds are eagles, peregrine falcons, muir-fowl, ptarmigans, and red-breaſted gooſeanders. Vipers ſwarm in the heath; and the natives are ſaid to cure the wound by a poultice of hemlock and henbane. In this iſland ſeveral ancient diverſions and ſuperſtitions are ſtill preſerved: the latter, however, are almoſt extinct, or only lurk among the very meaneſt of the people. Yet the power of faſcination ſtill retains a ſtrong hold on their minds. The late-wakes, or funerals, were attended with ſports and dramatic entertainments, compoſed of many parts; and the actors often changed their dreſſes ſuitable to their characters. The ſubject of the drama was hiſtorical, and preſerved by memory. The general language of the common people is the Gaelic; yet Engliſh is well underſtood, and taught in all the ſchools. The chief amuſements are ſinging and dancing; in the latter are exhibited an eaſe and gracefulneſs of motion peculiar to this iſland. Ila abounds with mines of lead and copper, which are very rich, and have been long wrought. There are alſo vaſt quantities of that ore of iron called bog-ore, of the concrete kind, and below it large ſtrata of vitriolic mundic. Near the veins of lead are found ſpecimens of barytes and excellent emery. A ſmall quantity of quickſilver has been found in the muirs, and it is probable that a more attentive ſearch would diſcover more of that valuable mineral. Limeſtone and marle are abundant; but of theſe the inhabitants are ſcarcely acquainted with the value. Pennant's Tour to the Hebrides.

ILA, in *Hindoo Mythology*, a female who appears in ſeveral undefined or equivocal characters. Sir William Jones notices her as the daughter of the ſeventh Menu, or Noah (ſee MENU), and wife of a ſon of Chandra, or the Moon. She is thus one of the maternal anceſtors of both the great claſſes of people diſtinguiſhed among the Hindoos by the titles of children of the ſun, Surya-vanſa (ſee SURYA-VANSA), and children of the moon, Chandra-vanſa; Ila's father, Menu, being of the former race, and hence ſurnamed Vaivaſwata, or offspring of the ſun. (See VAIVASWATA) In another of her characters ſhe appears to be a perſonification of the earth, and the wife of Menu or Noah; in another as his ſon: in all of which may be traced ſome appearance of allegory referring to the important part borne by the great reſtorer of our ſpecies, as parent and protector of terreſtrial productions. On one occaſion ſhe incurred the diſpleaſure of Parvati, the Juno of the Hindoo Olympus, who curſing her, cauſed her to become alternately one month a man and a month a woman; but by the efficacy of devotions paid to a linga (ſee LINGA), the ſymbol of Siva, ſhe was reſtored to her permanency of ſex through the favour, thus propitiated, of that divinity. This fable we ſhall not attempt to explain. See Moor's Hindoo Pantheon.

ILAK, or JALAK, in *Geography*, a town of Nubia, on the Nile, which ſome ſuppoſe to have been the ſcite of the ancient Meroe. N. lat. 17° 48'. E. long. 34° 10'.

ILAMBA, or ELUANÉ, the name of two provinces of Africa, in the kingdom of Angola; the Upper is the more inland, and the Lower nearer the Atlantic. Both are fertile, and yield a conſiderable revenue to the crown of Portugal.

ILANTZ, the capital of the Grey league, a ſmall town of Switzerland, containing about 60 houſes, and partly ſurrounded by walls. It is the place where the general diet of the three leagues aſſembles every third year. The adjacent country is fertile in every ſpecies of grain and paſture. The points of view are extremely fine, exhibiting a ſmall plain ſkirted by cultivated mountains, and backed by a ridge of barren rocks which bound the valley of Lugnetz. N. lat. 46° 40'. E. long. 9° 18'.

ILANTZINSKOI, a town of Ruſſia, in the government of Irkutſk; 10 miles N.N.W. of Verchnei or Udinſk.

ILAT, a ſmall iſland on the eaſt coaſt of the iſland of Bouro. S. lat. 3° 35'. E. long. 127° 33'.

ILATHERA BARK. See CLUTIA.

ILBERG, in *Geography*, a town of Sweden, in the province of Warmeland; ſix miles N.W. of Carlſtadt.

ILCHESTER, properly IVELCHESTER, is an ancient borough, market-town, and pariſh in the hundred of Tintinhull, Somerſetſhire, England, and is ſituated on the river Ivel. Its Roman name was *Iſchalis*, and it was one of the moſt eminent ſtations the Romans poſſeſſed in theſe parts. It was by them environed with a ſtrong wall and deep ditch, which originally was filled with water from the river. Its form was an oblong ſquare, the Foſſe-road paſſing through it from north-eaſt to ſouth-weſt. The veſtiges both of the wall and ditch are ſtill diſcernible, the former being regularly compoſed of ſtone and brick-work intermingled: the ditch on the north-weſt ſide is now filled up, and become a road called Yard-lane. The Foſſe-road was here paved with large flag-ſtones; ſome of which are viſible in the old ford through the river near the bridge. At the time of the Norman conqueſt, Ivelcheſter was a city of conſiderable note, and contained ſeveral pariſh churches. Vaſt arches and immenſe foundations of ancient buildings lie beneath the ſurface of the ground; and the entire ſcite of the old city is filled with ſubterraneous ruins. The preſent town exhibits but ſmall indications of its former greatneſs. It conſiſts of four ſtreets but indifferently built; and has one pariſh church, and a meeting-houſe for Diſſenters. The church has a tower, fifty feet high, conſtructed of Roman ſtone. The aſſizes for the county were fixed to be held here by a patent granted by Edward III., but they have long ſince been held only alternately with Wells, Taunton, and Bridgewater. The county gaol is ſtill here. The civil government of this borough is veſted in a bailiff and twelve capital burgeſſes, who, together with the inhabitants not receiving alms, return two members to parliament. The firſt return was 26 Edward I. An hoſpital for the entertainment of pilgrims and poor travellers was founded, about the year 1226, by William Dacus: it was afterwards converted into a nunnery; the ruins are ſtill extant. A weekly market on Wedneſday has exiſted here ever ſince the conqueſt, but has greatly declined. Here are two annual fairs Ilcheſter is 122 miles diſtant from London: the return under the population act of 1801 was 138 houſes, and 942 inhabitants. The celebrated philoſopher Roger Bacon, juſtly accounted the wonder of his age, was born in this town, A. D. 1214. Collinſon's Hiſtory of Somerſetſhire, vol. iii.

ILDINSKOI, a cape of Ruſſia, in the Pacific ocean, near the northern part of Kamtſchatka. N. lat. 59° 15′. E. long. 164° 14′.

ILDUM, in *Ancient Geography*, a town of Spain, belonging to the Ilercaones, at ſome diſtance from the ſea, N.E. of Segobriga. In Antonine's Itinerary it is marked on the route from Dertoſa to Saguntum.

ILERAY, in *Geography*, one of the ſmaller weſtern iſlands of Scotland, near the N. coaſt of Benbecula. N. lat. 57° 30′. W. long. 7° 25′.

ILERCAONES, in *Ancient Geography*, a people of Spain, in the Tarragonenſis, towards the mouth of the Ebrus.

ILERDA, or Lerida, a town of Spain, upon the Sicoris: its ſituation at the foot of the Pyrenees expoſed it inceſſantly to the horrors of war from the time when the Romans began to penetrate into Spain. Under Gallienus it was almoſt entirely deſtroyed by the Barbarians, who, migrating from Germany, ravaged the weſtern parts of the empire.

ILERGETES, a people of Hither Spain, E. of the Vaſcones. Their principal towns were Ilerda, Berguſia, and Oſca.

ILES, in *Agriculture*, a term provincially applied in ſome places to denote the beards or awns of different deſcriptions of grain, ſuch as barley, wheat, &c. See Awns.

ILETERTON, in *Geography*, a town of Thibet, 30 miles S.W. of Cha-tcheou.

ILEUM, in *Anatomy*, the third diviſion of the ſmall inteſtine. See Intestine.

ILEX, in *Botany*. Linn. Gen. n. 172. Reich. 184. Schreb. 232. Juſſ. 379. Mart. Mill. Dict. v. 2. Smith Fl. Brit. 192. Aquifolium, Tournef. 371. Claſs and order, *Tetrandria Tetragynia. Polygamia Dioecia*, Hudſ. Nat. Ord. *Dumoſæ. Rhamni*, Juſſ.

Gen. Ch. *Cal.* Perianth four-toothed, very ſmall, permanent. *Cor.* one-petalled, four-parted, wheel-ſhaped; *diviſions* roundiſh, ſpreading, rather large, with cohering claws. *Stam.* Filaments four, awl-ſhaped, ſhorter than the corolla, anthers ſmall. *Piſt.* Germen roundiſh; ſtyle none; ſtigmas four, obtuſe. *Peric.* Berry roundiſh, four-celled. *Seed* ſolitary, bony, oblong, obtuſe, gibboſe on one ſide, cornered on the other.

Eſſ. Ch. Calyx four-toothed. Corolla wheel-ſhaped. Style none. Berry four-ſeeded.

1. I. *aquifolium*. Common Holly. Linn. Spec. 181. Syſt. 168. Reich. 1. 354. Hort. Cliff. 40. Upſ. 22. Hudſ. Engl. 446. Wither. Ar. 168. Mill. fig. t. 46. Hunt. Evel. 262. Thunb. Jap. 79. Lour. Cochinch. 91. (Aquifolium, Hall.) Helv. n. 667. Ilex, Scop. Carn. n. 177. Varieties α. I. aculeata baccifera, Bauh. Pin. 425. Aquifolium vulgo, Bauh Hiſt. 1. 114. Tourn Inſt. 600. Aquifolium, Ger. 1155. Raii Hiſt. 1622. Syn. 466. β. I. heterophylla. Various leaved Holly. Ait. Hort. Kew. 1. 169. "Leaves toothed, ſpiny, and entire." γ. I. craſſifolia. Thick-leaved Holly. Ait. Hort. Kew. 1. 169. "Leaves thicker, equally ſerrate." δ. I. recurva. Slender Holly. Ait. Hort. Kew. 1. 169. "Leaves narrower, recurved." ε. I. ferox. Hedgehog Holly. Ait. Hort. Kew. 1. 169. Linn. Syſt. 168. β. Reich. 1. 354. β. "Leaves with the upper ſurface ſpiny."

2. I. *opaca*. Corolina Holly. Ait. Hort. Kew. 1. 169. "Leaves ovate, acute, ſpiny, ſmooth, flat, flowers ſcattered at the baſe of the laſt year's ſhoots." Native of Carolina: flowers in May and June.

3. I. *Perado*. Thick leaved ſmooth Holly. Ait. Hort. Kew. 1. 169. "Leaves ovate with a point, unarmed, almoſt entire." Native of Madeira: flowers in April and May.

4. I. *Prinoides*. Deciduous Holly. Ait. Hort. Kew. 1. 169. "Leaves elliptic-lanceolate, acute, deciduous, ſerrate, ſerratures without prickles. Native of Carolina and Virginia: flowers in July.

5. I. *Caſſine*. Dahoon Holly. Linn. Spec. 181. Reich. 1. 354. Hort. Cliff. 40. I. caroliniana; Mill. Dict. n. 3. Aquifolium carolinenſe, fol. dentatis baccis rubris. Cateſb. Carol. 1. t. 31. α. I. Caſſine latifolia. Broad-leaved Dahoon Holly. "Leaves lanceolate-oblong, ſerrate." β. I. C. anguſtifolia. Narrow-leaved Dahoon Holly. "Leaves lanceolate, almoſt quite entire." Ait. Hort. Kew. 1. 170. "Leaves alternate, diſtant, evergreen, lanceolate, ſerrate, ſerratures acuminate." Native of Florida and Carolina.

6. I. *vomitoria*. South-ſea Tea or evergreen Caſſine. Ait. Hort. Kew. 1. 170. (Caſſine Paragua; Mill. Dict. n. 2 fig. t. 83. f. 2. Pluk. Mant. t. 376. f. 2. Cateſb. Carol. 2. t. 57.) "Leaves alternate, diſtant, oblong, bluntiſh, crenate-ſerrate, ſerratures without prickles." Native of Weſt Florida. The leaves are uſed for making an infuſion in the manner of tea; which is accounted by the Indians very wholeſome, and is almoſt the only phyſic they uſe in ſome parts. The plant is ſuppoſed to be the ſame with that which grows in Paraguay, where the Jeſuits make a great revenue from the leaves.

7. I. *aſiatica*. Linn. Spec. 181. Reich. 1. 354. "Leaves broad-lanceolate, blunt, quite entire." Native of the Eaſt Indies.

8. I. *runcifolia*. Linn. Spec. 181. Reich. 1. 354. Plum. Ic. 118. 2. "Leaves wedge-form, three-cuſped." Native of South America.

9. I. *integra*. Linn. Syſt. 168. Thunb. Jap. 77. "Leaves oblong, obtuſe, entire; peduncles one-flowered."

10. I. *rotunda*. Linn. Syſt. 168. Thunb. Jap. 77. "Leaves rounded, acute, entire; peduncles umbelliferous."

11. I. *crenata*. Linn. Syſt. 168. Thunb. Jap. 78. "Leaves ovate crenate, peduncles on the branches ſcattered, bearing two or three flowers.

12. I. *emarginata*. Linn. Syſt. 168. Thunb. Jap. 78. "Leaves obovate, emarginate, flowers axillary, uſually in pairs."

13. I. *ſerrata*. Linn. Syſt. 168. Thunb. Jap. 78. "Leaves ovate, acute, ciliate, ſerrate, flowers axillary, ſolitary. Flowers in June."

14. I. *japonica*. Linn. Syſt. 168. Thunb. Jap. 79. "Leaves oppoſite ſeſſile, flowers in terminating racemes, and flowers in April."

15. I. *latifolia*. Linn. Syſt. 168. Thunb. Jap. 79. "Leaves ovate ſerrate, flowers axillary, aggregate."

16. I. *crocea*. Thunb. Prodr. 32. "Leaves oblong ſerrate, ſerratures ciliate ſpiny." Native of the Cape of Good Hope.

This genus conſiſts of ſmall trees or ſhrubs, with alternate leaves, evergreen, toothed and thorny; and axillary many-flowered peduncles. The common holly riſes from 20 to 30 feet, and ſometimes more. It grows wild in many parts of Europe, in North America, Japan, Cochinchina, &c.; and is found in woods and foreſts in many parts of England. In Engliſh it is called "Hulver" and "Holme." For its uſes, ſee Holly.

Ilex, in *Gardening*, contains plants of the hardy evergreen tree or ſhrubby kinds; of which the ſpecies moſtly cultivated are the common holly (I. aquifolium); the Dahoon holly (I. caſſine); and the South ſea tea, or evergreen caſſine (I. vomitoria).

There are a great many varieties of both the green-leaved and variegated ſorts. Of the firſt the common green-leaved prickly, the ſmooth green-leaved, the narrow ſerrated green-leaved, the green-leaved yellow-berried, the box-leaved green, and the hedge-hog green; and of the latter the common prickly, with ſilver ſtriped leaves, with gold ſtriped leaves, with blotched leaves; the ſmooth with white ſtriped leaves, with yellow ſtriped leaves, with blotched leaves, with narrow ſtriped leaves, the blotched yellow berried; the cream-coloured, the copper-coloured, the white-leaved, the mottled-edged, the hedge-hog ſilver-edged, the gold-edged hedge-hog, the white-blotched hedge-hog, the yellow-blotched hedge-hog, and the painted lady variegated.

And of the ſecond ſort there are varieties with broad leaves, and with narrow leaves, with ſcarcely any ſerratures.

Method of Culture.—Theſe plants are all capable of being increaſed from ſeeds, and by the operations of budding and grafting upon proper ſtocks.

The ſeeds or berries ſhould be ſown, as ſoon as they are perfectly ripened, in ſmall beds prepared for the purpoſe. But as they are long in germinating, it is the practice with ſome to depoſit them, for a year before they are ſown in the beds, in pots filled with earth or ſand, or in a hole in the earth, in a dry ſituation; the firſt is probably the beſt method. The plants moſtly riſe in the ſecond ſpring, when they ſhould be kept well weeded and watered. After they have had two years' growth in theſe beds they ſhould be removed, and planted out in nurſery rows at the diſtance of two feet, and one apart in the rows. They ſhould remain in theſe till of a proper ſize to be planted where they are to remain, keeping them perfectly clean, and the ground occaſionally ſtirred about them.

The proper ſeaſons for removing them are either the early autumn or ſpring; the former in dry grounds, and the latter in thoſe that are of a retentive nature.

In the ſecond ſort the ſeeds, after being prepared as above, ſhould be ſown in pots, and plunged the ſecond ſpring in a gentle hot-bed, in order to bring up the plants. They ſhould then be kept in the pots, and have protection in the winter ſeaſon till they have become of hardy growth, when they may be turned out and planted in warm ſituations. They afterwards require protection in very ſevere winters by mats or other means.

And the third ſort may be managed in the ſame way as the ſecond, the young plants being gradually inured to the open air, having only the morning ſun at firſt. They ſhould be kept in the pots four or five years, as they grow ſlowly, being well protected in the winter. They all ſucceed beſt in a dry ſoil.

All the varieties of the different ſoils are to be continued either by budding or grafting upon ſtocks of the firſt ſort. The firſt ſhould be performed in the latter part of ſummer, and the latter in the early ſpring, upon ſtocks of two years' growth. See BUDDING, GRAFTING, and INOCULATING.

All the ſorts and varieties are highly ornamental in the clumps, borders, and other parts of pleaſure-grounds, affording much variety when judiciouſly intermixed. The firſt ſort frequently riſes to a large tree, having a fine white hard wood uſeful for various purpoſes. The bark alſo affords the ſubſtance called bird-lime, which is prepared by boiling it till the green part is capable of being ſeparated from the white, then laying it in a cool cellar for a few days, afterwards pounding it till it becomes a tough paſte, waſhing it repeatedly, till it gets quite clear, then placing it in an earthen veſſel to ferment or become fine, when it will be fit for uſe.

ILEX. See HIPPOMANE and QUERCUS.

ILEX *Aquifolium*, in *Natural Hiſtory*. The leaves of this plant were found, among others, preſerved in the ſilt and peaty matters, below the ordinary level of the tides, at Sutton, in Lincolnſhire, by Dr. De Serra and ſir Joſeph Banks, in 1796. Phil. Tranſ. 1799.

ILFRACOMB, in *Geography*, is a ſea-port, market-town, and pariſh in the hundred of Braunton and county of Devon, England. It derives conſiderable trade from the herring-fiſhery in the Briſtol channel. The peculiar ſituation and ſafety of the harbour occaſion many veſſels to put in here, when it is dangerous for them to enter the mouth of the river Taw for Barnſtaple. In conſequence of this circumſtance, much of the port buſineſs of that place is tranſacted at Ilfracomb. Nature and art ſeem to have combined in forming the harbour, which, appearing like a natural baſin, is almoſt ſurrounded by craggy heights, overſpread with foliage. On three ſides the rocks riſe in a ſemicircular ſweep; and on the fourth a bold maſs of rock ſtretches nearly half-way acroſs the mouth of the bay. This rock riſes almoſt to a point; and on the top is erected a light-houſe, which has the appearance of a place of worſhip. Along the ſide of this rock, to the opening of the harbour, runs an artificial pier, judiciouſly conſtructed to prevent the accumulation of ſand; ſo that by the joint aſſiſtance of the natural barrier and this piece of maſonry, ſhips of 230 tons burthen may ride completely land-locked, and ſafe from the violence of the weather. An inſcription, over the gate of the pier, informs us that the town was indebted for this valuable addition to its convenience and advantage, to ſir Bourchier Wray, bart., who, in the year 1760, partly rebuilt, lengthened, and enlarged this extenſive barrier. Previous to the year 1731, the pier was 850 feet long, but the violence of the ſea having nearly deſtroyed it, the parliament then paſſed an act for repairing and enlarging it, with the harbour, &c. The town conſiſts principally of one well-built ſtreet, extending a mile in length, from the church to the ſea ſide. A number of good houſes, chiefly for the ſummer accommodation of ſtrangers, is ranged along ſide of the harbour. The church is a large plain ſtructure, but not demanding any particular notice. Camden, though prebendary of this place, ſcarcely mentions it in his Britannia. The civil government of the town is veſted in a mayor, bailiffs, and other officers. Ilfracomb is 202 miles diſtant from London; has a well-ſupplied market on Saturdays; and contained, at the time of the late return to parliament, 455 houſes, and 1838 inhabitants.

Three miles eaſt of the town is Watermouth, the ſeat of Joſeph Davie, eſq. The houſe is ſituated on an eminence, having in front an inlet of the ſea, which forms a moſt beautiful baſin, environed by rocks on the right and left. The varied character of rock, lake, and dale, conſtitutes very ſingular and romantic ſcenery. Warner's Walk through the Weſtern Counties. Maſon's Obſervations on the Weſtern Counties. Beauties of England and Wales, vol. iv.

ILGINSKAIA, a town of Ruſſia, in the government of Irkutſk, at the conflux of the Ilga and Lena; 52 miles S. of Orlenga.

ILGINSKOI, a town of Ruſſia, in the government of Irkutſk, on the Ilga; 140 miles N. of Irkutſk. N. lat. 54° 30'. E. long. 105° 14'.

ILHA GRANDE, an iſland in the Atlantic, near the coaſt of Braſil, about 15 miles long and three broad. S. lat. 23° 15'.

ILHEO, a ſmall iſland in the Atlantic, near the coaſt of Africa. S. lat. 23° 30'.

ILHEOS, a ſea-port town of Braſil, and capital of a diſtrict, called "Rios dos Ilheos," ſituated at the mouth of a river of the ſame name. S. lat. 15° 25′. W. long. 36° 36′.

ILI, a river of Tartary, which runs into lake Palcati; 20 miles N.W. of Harcas.

ILIA, in *Anatomy*, the technical term for thoſe parts of the body, which are bounded by the upper broad portions of the oſſa innominata. It is one of the ſubdiviſions of the abdominal cavity. See Abdomen.

ILIABAD, in *Geography*, a town of Hindooſtan, in the Carnatic; four miles S.W. of Arnee.

ILIAC, in *Anatomy*, an epithet applied to certain organs of the body, ſituated in or near the ilia. Thus we have the common or primary ilia arteries (iliacæ communes); the external and internal iliac arteries (iliaca externa et interna); veins of the ſame names, correſponding to theſe; the poſterior iliac artery (iliaca poſterior or glutæa).

Iliac *Paſſion*, or *Ileus*, in *Medicine*, a term uſed by many modern writers to deſignate thoſe forms of inteſtinal diſeaſe, in which, after ſevere attacks of pain in the belly, the inverſion of the periſtaltic motions of the inteſtines is ſuch, as to occaſion a vomiting of feculent matter. This may happen from any great obſtruction of the bowels; but chiefly occurs when either inflammation is induced, or a ſevere ſpaſmodic conſtriction takes place in ſome part of the canal. The ileus, therefore, is only another term for inflammation of the bowels, or *enteritis* in the one caſe, and for *colic* in the other. (See theſe articles.) The name was probably appropriated with a view of diſcriminating an affection of the ſmall inteſtines, or *ilium* (ἰλεον), from a ſimilar diſorder of the large inteſtines, or *colon*, which had been termed *colica*: but ſuch diſtinction is not eaſily aſcertained; and the *ileus* can only be conſidered as an extreme degree of *colic*, where inflammation has not actually ſupervened The terms *miſerere mei*, *volvulus*, and *chordapſus*, have alſo been uſed as appellations of the diſeaſe. All the cauſes of obſtruction to the free paſſage of the fæces along the canal of the inteſtines, inaſmuch as they commonly induce inflammation, or ſpaſmodic contraction, and invert the periſtaltic motion, may produce ileus: ſuch as *herniæ*, or ruptures, intusſuſception, *calculi*, indurated fæces, &c.; and the remedies applicable to colic and enteritis reſpectively will cure the diſeaſe. It is to be obſerved, however, that as this complete inverſion of the periſtaltic motion of the canal implies the moſt ſevere degree of theſe diſeaſes, ſo it is neceſſarily an alarming and dangerous ſymptom whenever it appears.

ILIACOUR, in *Geography*, a town of Hindooſtan, in the country of the Nayrs; 20 miles N.E. of Tellicherry.

ILIACUS Internus, in *Anatomy*; iliaque, ilio-trochantinien; a muſcle of the lower extremity, placed in the iliac foſſa, and at the upper and anterior part of the thigh, and extending from the two anterior thirds of the criſta of the ilium to the trochanter minor of the thigh-bone. It is thin and broad above, narrower and thicker below, ſo as to be in ſome degree fan-ſhaped. Its anterior ſurface is concave above and convex below: that portion of it which is above the crural arch is covered by the peritoneum, looſely attached by cellular ſubſtance, by the cæcum on the right, and by the ſigmoid flexure of the colon on the left ſide of the body. The anterior crural nerve is alſo in contact with it here. Below the crural arch, the iliacus internus is covered on the outſide by the ſartorius, on the inſide by the crural veſſels and nerve, and in the middle by the faſcia lata. The poſterior ſurface covers the iliac foſſa, and is attached to the two ſuperior thirds of this excavation; it covers alſo the anterior inferior ſpine of the ilium, and is attached to its inner edge; it then covers the upper end of the rectus, and the hip-joint, to the orbicular ligament of which it is attached.

The internal edge is covered above by the pſoas magnus: below, theſe two muſcles are united into one maſs. The outer edge is extended obliquely from the anterior ſuperior ſpine of the ilium to the baſe of the little trochanter; it is covered by the ſartorius, and covers a little of the triceps. The upper edge is attached to the two anterior thirds of the inner margin of the criſta of the ilium, and to the ilio-lumbar ligament. From theſe parts the muſcle deſcends, growing thicker and narrower. Confounded with the pſoas, it paſſes behind the crural arch, deſcends obliquely from without inwards, and is attached to the trochanter minor, and to the neighbouring part of the body of the thigh-bone.

The fleſhy fibres of this muſcle ariſe from the iliac foſſa, the criſta and ſpines of the bone, and terminate on the external and poſterior ſurface of the tendon common to it with the pſoas magnus. The internal ones are the ſhorteſt, and are nearly vertical; thoſe in the middle are longer and paſs obliquely from without inwards; the external are the longeſt and ſtill more oblique. The latter accompany the tendon even to the trochanter, and ſome are attached to the former below that proceſs.

The iliacus internus carries the thigh-bone forwards upon the pelvis, and rotates it ſo as to twiſt the limb outwards. It bends the pelvis forwards upon the thigh. It produces the firſt of theſe effects in progreſſion, when the limb, which had been left behind, is elevated and carried in front of the other: the ſecond action is exhibited when the trunk of the body is carried forwards on the limb ſo advanced.

ILIAD, Ιλιας, the name of an ancient epic poem, the firſt, and fineſt, of thoſe compoſed by Homer. See Epic *Poem*.

The critics maintain the Iliad to be the firſt, and yet the beſt, poem that ever appeared in the world: Ariſtotle's Poetics are almoſt wholly taken from it; the philoſopher had nothing to do but to form precepts from the poet's practice. Some authors tell us, that Homer invented not only poetry, but all other arts and ſciences; and that there are the viſible marks of a perfect knowledge in every one of them to be ſeen in the Iliad.

The word is derived from the Greek Ιλιας, of Ιλιον, *Ilium*, Troy, a famous city of Aſia, which the Greeks beſieged for the ſpace of ten years, and at laſt deſtroyed, on account of the rape of Helena, which makes the ſubject of the work.

The poet's deſign in the Iliad was, to ſhew the Greeks, who were divided into ſeveral little ſtates, how much it was their intereſt to preſerve a harmony and good underſtanding among them. In order to which, he ſets before their eyes the calamities that befel their anceſtors from the wrath of Achilles, and his miſunderſtanding with Agamemnon; and the advantages that afterwards accrued to them from their union. See Fable.

In order to form a proper judgment of the diſtinguiſhing excellence of this poem, it is neceſſary, ſays Dr. Blair, (Lectures, vol. iii.) that the reader ſhould tranſport his imagination almoſt three thouſand years back in the hiſtory of mankind, and conſider that he is about to peruſe the moſt ancient book in the world, next to the Bible. He will thus diveſt himſelf of all our modern ideas of dignity and refinement; nor will he be led to look for the correctneſs and elegance of the Auguſtan age. What he ought to expect is a picture of the ancient world, exhibiting characters and manners that poſſeſs a conſiderable tincture of the ſavage ſtate. The opening of the Iliad is deſtitute of that kind of dignity, which a modern expects to find in a great epic poem. The ſubject is merely the quarrel of two chieftains about a female ſlave. The prieſt of Apollo beſeeches Agamemnon to reſtore his daughter, who, in the plunder of a city, had fallen to Agamemnon's ſhare of booty. Upon his refuſal, Apollo, at the prayer of his prieſt, ſends a plague into the Grecian camp. The augur, when conſulted, declares, that Apollo cannot be appeaſed without reſtoring the daughter of his prieſt. Agamemnon is enraged at the augur; profeſſes that he likes this ſlave better than his wife Clytemneſtra; but as it was neceſſary to reſtore her in order to ſave the army, he inſiſts upon having Briſeis, the ſlave of Achilles, in her room. Achilles is enraged at this demand, reproaches him for his rapacity and inſolence, and ſolemnly ſwears, that, in revenge for this treatment, he will withdraw his troops, and afford the Grecians no farther aſſiſtance againſt the Trojans. He accordingly withdraws. His mother, the goddeſs Thetis, intereſts Jupiter in his cauſe; who, for avenging the wrong which Achilles had ſuffered, takes part againſt the Greeks, and thus plunges them into deep diſtreſs; until at length Achilles is pacified, and he and Agamemnon are reconciled. Such is the baſis of the whole action of the Iliad. (See ACTION.) In the days of Homer no ſubject could have been more happily choſen than that of the Iliad; which laid the foundation of the Trojan war. So great a confederacy as the Grecian ſtates, under one leader, and the ten years' ſiege which they carried on againſt Troy, muſt have ſpread far abroad the renown of many military exploits, and intereſted all Greece in the traditions concerning the heroes who had moſt eminently ſignalized themſelves. Upon theſe traditions Homer, who is ſuppoſed to have lived two or three centuries after the Trojan war, grounded his poem; and the interval of time that elapſed between the war and the period of his deſcribing it, left him at full liberty to blend fable with the records of true hiſtory. The ſubject of his choice was only that part of the Trojan war which comprehends the quarrel betwixt Achilles and Agamemnon, and the events reſulting from that quarrel. Theſe, though they included merely an interval of 47 days, yet occupy the moſt intereſting and moſt critical period of the war. By this management he has given greater unity to what otherwiſe would have been an unconnected hiſtory of battles. He has alſo gained one hero, or principal character, *viz.* Achilles, who reigns throughout the work; and he has ſhewn the pernicious effects of diſcord among confederated princes. The praiſe of high invention has in every age been juſtly allowed to Homer; and this invention is ſignally diſplayed in the prodigious number of incidents, of characters, divine and human, with which his poem abounds; the ſurpriſing variety with which he has diverſified his battles, in the wounds and death, and little hiſtory pieces, of almoſt all the perſons ſlain. His judgment is alſo no leſs conſpicuous than his invention. His ſtory is uniformly conducted with great art. He riſes upon us gradually; his heroes appear, in ſucceſſion, as objects of our attention: the diſtreſs thickens as the poem advances; and every thing is ſo contrived as to aggrandize Achilles, and to render him, agreeably to the intention of the poet, the capital figure. Homer, however, is principally diſtinguiſhed, above all other writers, in the characteriſtical part. His exhibition of characters is rendered lively and ſpirited by his dramatic mode of writing, or by his continually recurring to dialogue and converſation. As this is the moſt ſimple and artleſs, it is evidently the moſt ancient. See a ſpecimen of it in Gen. xlii. 7—15. To the ſpeeches of Homer, which are upon the whole characteriſtic and lively, we owe, in a great meaſure, the admirable diſplay which he has given of human nature. Every one who reads him, becomes familiarly and intimately acquainted with his heroes. We ſeem to have lived among them and converſed with them. His art in painting characters is eminently diſplayed in thoſe of Helen and Paris. As for his character of Achilles; ſee ACHILLES. The gods alſo made a great figure in the Iliad; inſomuch that Homer has become the ſtandard of poetic theology. By the intervention of his gods, he has greatly diverſified his battles; and by frequently ſhifting the ſcene from earth to heaven, the mind is agreeably relieved in the midſt of ſo much blood and ſlaughter. It has, however, been objected to Homer, that his gods want dignity; but in apology for him, it ſhould be remembered, that, according to the fables of thoſe days, the gods are but one remove above the condition of men, and poſſeſs all the human paſſions. Nevertheleſs, though Homer frequently degrades his divinities, he knows how to make them appear, in ſome conjunctures, with the moſt awful majeſty. Jupiter, the father of gods and men, is, for the moſt part, introduced with great dignity, and ſeveral of the moſt ſublime conceptions in the Iliad are founded on the appearances of Neptune, Minerva, and Apollo, on great occaſions. As to Homer's ſtyle and manner of writing, it is eaſy, natural, and in the higheſt degree animated. In his ſtyle he is the moſt ſimple of all the great poets, and in this reſpect it reſembles moſt that of the poetical parts of the Old Teſtament. Of the ſimplicity of his ſtyle, we can form no adequate idea in the midſt of the elegance and luxuriancy of the language of Mr. Pope's tranſlation, however excellent that tranſlation may be deemed as a poetical performance. In the midſt, however, of that plainneſs of diction for which Homer is diſtinguiſhed, there are every where breaking forth upon us flaſhes of native fire, of ſublimity and beauty, which hardly any language but his own could preſerve. His verſification has been univerſally acknowledged to be uncommonly melodious; and to carry, beyond that of any poet, a reſemblance in the ſound to the ſenſe and meaning. In narration, continues Dr. Blair, Homer is, at all times, remarkably conciſe, which renders him lively and agreeable; though in ſome of his ſpeeches he is tedious. He is every where deſcriptive, and deſcriptive by means of thoſe well choſen particulars, which form the excellency of deſcription. Virgil gives us the nod of Jupiter with great magnificence:

> "Annuit; et totum nutu tremefecit Olympum."

But Homer, in deſcribing the ſame thing, gives us the ſable eye-brows of Jupiter bent, and his ambroſial curls ſhaken, at the moment when he gives the nod; and thereby renders the figure more natural and lively. In drawing our attention to any intereſting object, he paints it in a manner to our ſight. The ſhot of Pandarus' arrow, which broke the truce between the two armies, as related in the 4th book, may be given for an inſtance, and, above all, the admirable interview of Hector with Andromache in the 6th book, where all the circumſtances of conjugal and parental tenderneſs; the child affrighted with his father's helmet and creſt, and clinging to the nurſe; Hector pulling off his helmet, taking the child into his arms, and offering up a prayer for him to the gods; Andromache receiving back the child with a ſmile of pleaſure, and at the ſame inſtant burſting into tears, δακρυοεν γελασασα, as it is finely expreſſed in the original, form the moſt natural and pleaſing picture that can poſſibly be imagined. Homer, it is obſerved, particularly excels in battles. In deſcribing theſe, his genius is moſt highly diſplayed, inſomuch that Virgil's battles, and indeed thoſe of moſt other poets, are cold and unanimated in compariſon of thoſe of Homer. No poet abounds ſo much with ſimilies. Several of theſe are extremely beautiful: ſuch as thoſe, of the fires in the Trojan camp compared to the moon and ſtars by night; Paris going forth to battle, to the war-horſe prancing to the river; and Euphorbus ſlain, to the flowering ſhrub cut down by a ſudden blaſt; all which are among the fineſt poetical paſſages that are any where to be found. His compariſons, however, are not reckoned among his greateſt beauties, for ſeveral reaſons ſuggeſted by Dr. Blair. See Lectures, vol. iii. p. 247. For the conduct of the Iliad, ſee father Boſſu, Madam Dacier, and M. De la Motte.

The Iliad is divided into twenty-four books, which are marked with the letters of the alphabet. Pliny gives us an account of an Iliad written on ſo very ſlender a paper, that the whole might be contained in a nut-ſhell.

The ingenious Mr. Barnes, of Cambridge, has very ſtrenuouſly attempted to prove Solomon to have been the author of the Iliad.

The Engliſh tranſlation of the Iliad by Mr. Pope is well known. This tranſlation, though faithful in the main to the original, and though thought by ſome to have occaſionally improved even Homer, is neverthleſs no other than Homer modernized. There is, as Dr. Blair obſerves, no author to whom it is more difficult to do juſtice in a tranſlation than Homer.

ILIGATANGAN, in *Geography*, one of the ſmall Philippine iſlands, N.W. of Leyta. N. lat. 11° 24′. E. long. 124°.

ILIGNO Bay, a bay on the S.W. coaſt of the iſland of Mindanao. N. lat. 7° 30′. E. long. 20°.

ILII OS, in *Anatomy*, a name given to one of the diviſions of the os innominatum. See Extremities.

ILIJA, in *Geography*, a town of Aſiatic Turkey, in the province of Diarbekir, ſituated on the Euphrates; 60 miles W. of Diarbekir.

ILIM, a river of Ruſſia, which riſes in N. lat. 54° 20′, and runs into the Angara, near Samakina, N. lat. 57° 25′, E. long. 102° 2′.

ILIMSK, a town of Ruſſia, on the Ilim, in the government of Irkutſk, in the environs of which are found the moſt beautiful black ſables; 152 miles N. of Irkutſk. N. lat. 56 30′. E long. 103 56′.

ILINSKA, a town of Ruſſia, in the government of Irkutſk, on the Lena; 56 miles N.E. of Kirenſk.

ILINSKOI, a town of Ruſſia, in the government of Tobolſk; 8 miles N. of Atchinſk. Alſo, a town of Ruſſia, in the government of Tver; 32 miles E.N.E. of Tver.—Alſo, a town of Ruſſia, in the government of Olonetz; 8 miles N. of Olgſkoi. Alſo, a town of Ruſſia, in the government of Novgorod, on the river Sula, oppoſite to Tcherepovetz.

ILION, a town of Thibet; 25 miles W.N.W. of Haratoube.

ILION, or ILIUM, in *Ancient Geography*. See Troy.

ILIPA, Alcolea, a town of Spain in Bœtica, N. of Hiſpalis, upon the right bank of the Bœtis. Strabo relates, that the environs of this town had mines of ſilver. Its medals bear the head of a female, ſuppoſed to be Ceres, with emblems of abundance.

ILIPPE, in *Botany*. See Bassia.

ILIPULA, Niebla, in *Ancient Geography*, a town of Spain, in Bœtica, W. of Tucci. Livy calls it *Ilipa*, but Ptolemy and M. D'Anville name it *Ilipula*.

ILIS, in *Geography*, a town of South America, in the province of Popayan; 20 miles S. of Paſto.

ILISSIDES, in *Mythology*, a ſurname of the Muſes, from the river Iliſſus in Attica, the waters of which were reckoned ſacred.

ILISSUS, in *Ancient Geography*, a town of Attica, called by Pliny "locus Iliſſos."—Alſo, a ſmall river of Attica, on the route from Athens to Cyno-Sarges, which had to the weſt a ſmall river called Eridanus. This river was conſecrated to the Muſes and other divinities.

ILITA, in *Hindoo Mythology*, a name of Parvati, conſort of Siva; ſimilar, perhaps, tò *Idita*, which ſee.

ILITHYA, derived from ελευθειν, *to ſpring from*, in *Mythology*, the daughter of Juno, and ſiſter of Hebe, who preſided over deliveries. This goddeſs had a temple at Rome, in which were regiſtered the birth and death of every citizen; a cuſtom eſtabliſhed by Servius Tullius.

ILIVILIHU, in *Natural Hiſtory*, a name given by the inhabitants of the Philippine iſlands to a very remarkable ſpecies of birds, common in that country. It is called by ſome writers *coturnix parvula montana*, the ſmall mountain quail, and it is indeed a quail in all the characters; but it is very beautifully variegated in its colours, and is ſmaller than a ſparrow. It lives in hilly places, and is a very well taſted bird. See Quail.

ILIUM Os, *Fractures of*, in *Surgery*. See Fracture.

ILL, l', in *Geography*, a river of France, which riſes in the department of the Upper Rhine, near Fernette, and runs into the Rhine near Straſburg; navigable for boats from Schlettſtat.

ILLA, in *Botany*. See Callicarpa.

ILLAHABAD, in *Geography*, a town of Hindooſtan, in the circar of Mahur; 35 miles N. of Neermul.

ILLAHON, a town of Egypt; 12 miles S.E. of Fayoum.

ILLAMBAZAR, a town of Hindooſtan, in Bengal; 25 miles S.S.E. of Nagore.

ILLE, a town of France, in the department of the Eaſtern Pyrenees, on the Teck, containing about 2000 inhabitants; 12 miles W. of Perpignan.

Ille, a river of France, which riſes near Dingé, in the department of the Ille and Vilaine, and joins the Vilaine near Rennes.

Ille *and* Vilaine, a department of the north-weſt region of France, bounded on the N. by the Engliſh channel, and the department of the Channel, on the E. by the department of the Mayenne, on the S. by the Lower Loire, and on the W. by the departments of the Morbihan and the North coaſt, about 60 miles in length from N. to S. and from 20 to 48 in breadth, from E. to W. It takes its name from the two rivers Ille and Vilaine, which unite together at Rennes, the capital of the department. This department contains 347 ſquare leagues, and 488,605 inhabitants. It is divided into ſix diſtricts, *viz.* St. Malo, including 101,089 inhabitants, Fougeres, 76,577, Vitré, 74,885, Redon, 66,707, Montfort, 55,971, and Rennes, 113,376. The number of cantons is 43, and of communes 352. The contributions amount to 3,014,223 fr. and the expenees charged upon it to 421,093 fr. 66 cent. This department, of a clayey ſoil and interſected by gentle eminences, is indifferently fertile, and badly cultivated; producing ſcanty crops of grain, flax, fruits, and good paſtures on the borders of the rivers. The fertile marſh of Dol is reckoned the Delta of the territory. There are conſiderable foreſts, mines of iron and lead, quarries of ſtone, &c.

ILLECEBRA, in *Botany*. See Sedum.

ILLECEBRUM, Illecebra of Pliny, pretty or enticing plants. Linn. Gen. n. 290. Reich. 313. Schreb. 407. Juſſ. 89.

89. Sm. Fl. Brit. 267. (Corrigiola, Dill. Gen. 169. Moehr 106. Paronychia, Tournef. 281.) Claſs and order, *Pentandria Monogynia*. Nat. Ord. *Holoraceæ*, Linn. *Amaranthi*, Juſſ.

Gen Ch. *Cal.* Perianth five-leaved, cartilaginous, five-cornered; with coloured leaflets, which are ſharp with diſtant points, permanent. *Cor.* none. *Stam.* Filaments five, capillary, within the calyx. Anthers ſimple. *Piſt.* Germen ovate, ſharp, ending in a ſhort bifid ſtyle; ſtigma ſimple, obtuſe. *Peric.* Capſule roundiſh, acuminate, both ways five-valved, one-celled, covered by the calyx. *Seed* ſingle, roundiſh, ſharp on both ſides, very large.

Obſ. The fruit in ſeveral ſpecies is different.

Eſſ. Ch. Calyx five-leaved, cartilaginous. Corolla none. Stigma ſimple. Capſule five-valved, one-ſeeded.

1. I. *brachiatum*. Linn. Syſt. 247. Reich. 1. 580 (Achyranthes brachiata; Linn. Mant. 50.) "Stem upright, herbaceous, brachiate, leaves oppoſite, even, annual." Native of the Eaſt Indies.

2. I. *ſanguinolentum*. (Achyranthes ſanguinolenta; Linn. Spec. 294. Verbena rubra;; Rumph. Amb. 7. 60. t. 27. f. 2.) "Fruteſcent, leaves oppoſite, ſpikes compound, heaped." Perennial. Native of the Eaſt Indies.

3. I. *canarienſe*. Linn. Syſt. 248. Suppl. 161 "Shrubby, leaves elliptic, acute, ſtipules and bractes ovate, ſhorter, panicles terminating, dichotomous." Found on the iſland of Teneriffe by Maſſon.

4. I. *lanatum*. Linn. Syſt. Reich. Ait. Hort. Kew. Lour. Cochinch. Vahl. Symb. (α. Achyranthes lanata; Linn. Spec. 296. Mill. fig. t. 11. f. 1. A. villoſa; Forſk. Deſcr. 48. n. 64. Chenopodium, Burm. Zeyl. t. 26. f. 1. Amaranthus, Pluk. Phyt. t. 75. f. 8. "Spikes ſub-aggregate, ſhorter than the leaf, branches long, rod-like." β. Great woolly illecebrum. "Spikes ſolitary, on ſpreading branchlets." γ. with round leaves. Retz. Obſ. 2. 13. n. 28. β. "Leaves ovate, ſomewhat hairy, ſpikes lateral, calyxes woolly." Native of the Eaſt Indies and Cochinchina.

5. I. *javanicum*. Linn. Syſt. Reich. Ait. Hort. Kew. (Caloſia lanata; Linn. Spec. 298. Syſt. 247. Reich. 1. 579. Mill. Dict. n. 6. Ireſine javanica; Burm. Ind. 212 t. 65. f. 2. Amaranthus albus α; Pluk. Phyt. t. 10. f. 1.) "Leaves lanceolate, tomentoſe, ſpikes cylindrical, numerous, terminating." Native of the Eaſt Indies.

6. I. *verticillatum*. Whorled knot-graſs. Linn. Spec. Reich. Hort. Cliff. Hudſ. Angl. Wither. Arr. Fl. Dan. Krock. Siles. (Corrigiola; Dill. Giſſ. 169. Raii Syn. 160. Paronychia ſerpyllifolia paluſtris; Vaill. Par. t. 15. f. 7. Tournef. par. ed. Angl. 2. 160. Polygonum ſerp. verticill. Raii Syn. ed. 2. 160. Pet. Brit. t. 10. f. 7. Polygala repens; Ger. 449. 1. Emac. 163. Park. Theat. 1333.—Nivea; Bauh. Pin. 215. "Flowers in whorls, naked; ſtems procumbent." Native of many parts of Europe in wet paſtures: flowers in July and Auguſt. This is the only Britiſh ſpecies.

7. I. *ſuffruticoſum*. Shrubby I. or knot-graſs. Linn. Sp. 298. Reich. 1. 581. (Paronychia hiſpanica fruticoſa, myrtifolia; Tourn. Inſt. 508. Mill. Dict. v. 2. n. 4.) "Flowers lateral, ſolitary, ſtems ſuffruticoſe." Native of the ſouth of Europe. Flowers from May to Auguſt.

8. I. *cymoſum*. Linn. Sp. and Syſt. Reich. Ger. Prov. 337. 3. (Polygonum capitulis ad genicula echinatis; Bocc. Sic. 41. t. 20. f. 3. Raii Hiſt. 214.) "Spikes cymed, directed one way, ſtem diffuſed." Native of the ſouth of France, the iſle of Elbe, and Portugal.

9. I. *ariſtatum*. Ait. Hort. Kew. 1. 290. "Flowers ſubfaſcicled, leaves lanceolate, ſilky, awned." Native of the Canary iſlands. Flowers in June and July.

10. I. *Paronychia*. Mountain I. or knot-graſs. Linn. Sp. Reich. Ger. Prov. (I. ſerpillifolium; Villars. Dauph. 2. 558? an polygonifolium, ejuſd. 557? Herniaria; Linn. Hort. Cliff. 41. Upſ. 54. Polygonum minus candicans; Bauh. Pin. 281. P. montanum niveum; Park. Theat. 445. 1.) "Flowers fenced with ſhining bractes, ſtems procumbent, leaves even." Native of the ſouth of Europe. Flowers in July and Auguſt.

11. I. *divaricatum*. Forked I. Ait. Hort. Kew. 1. 291. "Flowers bracted, ſubfaſcicled, peduncles dichotomous, panicled, leaves ovate-oblong, petioled." Native of the Canary iſlands. Flowers in July and Auguſt.

12. I. *capitatum*. Linn. Reich. Villars. Ger. Prov. (Herniaria erecta; Sauv. Monſp. 129. Paronychia narbonenſis erecta; Tournef. Inſt. 508. Polygonum minus candicans, &c. Magn. Monſp. P. montan. niv. minimum; Lob. Ic. 420.) "Flowers with ſhining bractes, hiding terminating heads, ſtems ſomewhat erect, leaves ciliate, villoſe underneath." Native of Provence, Spain, and the Levant.

13. I. *benghalenſe*. Linn. Reich. "Stem upright, herbaceous, leaves alternate and oppoſite, lanceolate, pubeſcent." Native of Bengal, Java, &c. in the Eaſt Indies.

14. I. *arabicum*. Linn. Reich. (Corrigiola albella; Forſk. Deſcr. 207. n. 31.) "Flowers ſcattered, heaped, bractes ſhining, equalling them, ſtems procumbent." Found in Arabia by Forſkhal.

15. I. *achyrantha*. Linn. Reich. (Achyranthes repens; Linn. Sp. ed. 1. Achyracantha repens, fol. Bliti pallidi; Dill. Elth. 8. t. 7. f. 7.) "Stems creeping, hairy, leaves ovate, mucronate; one oppoſite, ſmaller, heads ſubglobular, ſomewhat ſpiny. Native of Buenos Ayres.

16. I. *polygonoides*. Linn. Reich. (Gomphrena polygonoides; Linn. Sp. ed. 1. Herniaria; Brown. Jam. Amaranthoides; Herm. Parad. Sloan. Jam. Raii Suppl. Amaranthoides; Plum. Ic. 94. t. 21. f. 2. "Stems creeping, rough-haired, leaves broad-lanceolate, petioled, heads orbiculate, naked." Native of America on ſea-ſhores.

17. I. *ficoideum*. Linn. Reich. Jacq. Amer. Pect. 43. t. 90. (Gomphrena ficoidea; Linn. Syſt. Jacq. Amer. Amaranthoides marina, &c. Plum. Sp.) "Stems creeping, ſmooth, leaves broad, lanceolate, petioled, heads orbiculate, pubeſcent." Native of America, on the coaſt; now wild in Spain. A noxious weed in Martinico.

18. I. *ſeſſile*. Linn. Reich. Vahl. Symb. Lour. Cochinch. (Gomphrena ſeſſilis; Linn. Sp. ed. 1. Alternanthera; Forſk. Deſcr. 28. Amaranthus humilis; Burm. Zeyl. Amaranthoides humile; Pluk. Phyt. Olus Squillarum; Rumph. Amb. 6. 37. t. 15. f. 1. Coluppa; Rheed. Mal. 10. 21. t. 9.) "Stems creeping, bifariouſly tomentoſe, leaves lanceolate, ſubſeſſile, heads oblong, ſmooth." Native of the Eaſt Indies, and in wet places about Canton in China. Flowers from July to October.

19 I. *vermiculatum*. Linn. Reich. (Gomphrena vermicularis; Linn. Sp. Brown Jam. Caraxeron humile; Vaill. Act. Par. 1722. Amaranthoides humile, &c. Herm. Parad. t. 15. Amarantho affinis, &c. Breyn. Prodr. 2. Trifolii ſpica crithmum marinum non ſpinoſum braſilienſe; Raii Hiſt. 1331.) "Stems creeping, ſmooth, leaves ſubcylindric, fleſhy, heads oblong, ſmooth, terminating." Native of Brazil and Curaçoa; Jamaica, and the ſandy ſhores of South America.

20. I. *alſinefolium*. Linn. Reich. Paronychia hiſpanica ſupina alſinifolia, capitulis minoribus; Tournef. Inſt. 508. "Stems diffuſed, leaves ovate, flowers heaped, bractes ſhining." Native of Spain.

21. I. *fruteſcens*. L'Herit Stirp. Nov. 4. 75. t. 37. "Stem ſhrubby, diffuſed, dichotomous, leaves oppoſite, mealy." Flowers and ripens its ſeeds in ſummer. The Eaſt

Indian I. *Monſoniæ* has elegant ſpikes of reddiſh flowers. The whole genus requires reviſion, and a compariſon with *Herniaria*, *Celoſia*, &c.

The 7th, 8th, 10th, and 12th ſpecies, which are natives of the ſouth of Europe, may be propagated by ſeeds on a bed of light earth in the beginning of April. When the plants are come up, they ſhould be tranſplanted either into pots, or a warm dry border, watering and ſhading them, till they have taken new root. In an ordinary winter they will live in England in the open air. Thoſe that are in pots ſhould, in ſevere winters, be placed in a common frame, ſo as to enjoy the open air in mild weather, and be ſcreened from froſt. They may be alſo increaſed by cuttings, which, taken off in May or June, and planted in a ſhady border, will in two months put out roots; in moiſt weather they may be tranſplanted, and treated as the old plants. The reſt, 4, &c, being natives of the Eaſt and Weſt Indies, and other hot climates, are tender and will not thrive in the open air in England; their ſeeds muſt therefore be ſown on a hot-bed in ſpring; and afterwards, if they are plunged into the tan-bed in the ſtove, their branches will put out roots, by which they may be propagated in plenty.

ILLEGITIMATE Birth, or *Delivery*, in *Law*. See Delivery, and Abortion.

ILLENAS, Los, in *Geography*, a town of the iſland of Hiſpaniola; ſeven miles N. of St. Domingo.

ILLESEAS, a town of Spain, in New Caſtile, ſituated about midway in the road from Toledo to Madrid; containing two pariſhes and three convents; 15 miles S.S.W. of Madrid.

ILLEVIABLE, in *Law*, a debt or duty which cannot, or ought not, to be levied.

The word *nihil* is uſually ſet on a debt, or due, that is illeviable.

ILLIBERIS, in *Ancient Geography*, ſince called *Helena*, a town of Gaul, at the foot of the Pyrenées, upon the ſea-coaſt towards the eaſt; now *Elne*.

ILLICI, or Illice, a town of Spain, in the Tarragonenſis, upon the gulf called "Illicitanus Sinus."

ILLICIUM, *ab illiciendo*, in *Botany*, denoting an *inticing* plant, from its being very fragrant and aromatic. Linn. Gen. n. 611. Reich. 746. Schreb. 940. Mant. 167. Ellis in Phil. Tranſ. for 1770. Gærtn. t. 69. Juſſ. 280. Claſs and order, *Polyandria Polygynia*. Nat. Ord. *Coadunatæ*, *Magnoliæ*, Juſſ.

Gen. Ch. *Cal.* Perianth ſix-leaved, deciduous, the three inferior leaflets oval; the three ſuperior alternate ones narrower and reſembling petals. *Cor.* Petals many (27), diſpoſed in a triple ſeries; the nine inferior obtuſe, concave, the nine middle ſhorter and narrower; the interior nine ſtill ſhorter and narrower. *Stam.* Filaments very many (30), ſhort, depreſſed; anthers upright, oblong, obtuſe, emarginate. *Piſt.* Germens very many (20), diſpoſed in a circle, ending in very ſhort ſpreading ſtyles; ſtigmas at the upper ſide of the ſtyle, oblong. *Peric.* Capſules ſeveral (commonly eight, Loureir.), ovate, compreſſed, hard, ſpreading into a circle, bivalve, (one-valved, L. opening at the upper edge, G.) *Seed* ſolitary, ovate, rather compreſſed, gloſſy.

Eſſ. Ch. Calyx ſix-leaved. Petals 27. Capſules ſeveral, diſpoſed in a circle, bivalve, one-ſeeded.

1. I. *aniſatum*, yellow-flowered aniſeed-tree. Linn. Sp. 664. Syſt. 507. Reich. 2. 624. Gærtn. Fruct. 1. 338. Lour. Cochinch. 353. Thunb. Jap. 235. Berg. Mat. Med. 514. (Zingi fructus ſtellatus ſ. Aniſum Indicum; Bauh. Hiſt. 1. 485. Somo vulgo ſkimmi; Kæmpf. Amœn. 880. t. 881.) "Flowers yellow." This plant is ſtomachic and carminative, and is uſed in the Eaſtern countries in the colic, rheumatiſm, &c. In China it is uſed for ſeaſoning ſweet diſhes. In Japan they place bundles and garlands of the aniſeed-tree in their temples before their idols, and on the tombs of their friends. They alſo uſe the powdered bark as incenſe to their idols.

2. I. *floridanum*, red-flowered aniſeed-tree. Linn. Reich. Ellis in Phil. Tranſ. 1770, vol. 60. p. 524. Gærtn. Fruct. 1. 339. Hortus Kewenſ. 2. p. 250. "Flowers red." Native of Florida.

The aniſeed-tree may be propagated by ſeeds, if they can be procured; or by laying down the young branches; or by cuttings which ſtrike freely. It requires the ſame treatment as *Gardenia*; which ſee.

ILLIERS, in *Geography*, a town of France, in the department of the Eure and Loire, and chief place of a canton, in the diſtrict of Chartres; 12 miles S.W. of Chartres. The place contains 2617 inhabitants, in 9383 cantons, on 232½ kiliometres and 20 communes.

ILLIMANI, a mountain of Peru, near La Paz, ſuppoſed to contain immenſe quantities of gold.

ILLINITIONS, in *Geology*, is uſed by Mr. Kirwan (Geolog. Eſſays, p. 152.) to denote the divided maſſes of argillaceous iron ore, thought by Buffon and others, without ſufficient reaſon, to owe their origin to decayed vegetables.

ILLINOIS, in *Geography*, a lake of North America, about 20 miles long and five broad in the middle. The inhabitants of the adjacent country are called Illinois Indians. The number of warriors is about 260. N. lat. 40° 35′. W. long. 89° 18′.

Illinois, or *Illini*, a river which riſes from the lake Illinois, and runs into the Miſſiſſippi, N. lat. 38° 40′. W. long. 92° 12′. The lands on the banks of the Illinois, particularly on the S.E. ſide, are perhaps as fertile as any part of N. America. They produce, in the moſt luxuriant plenty, wheat, rye, Indian corn, peas, beans, flax, hemp, tobacco, hops, grapes, apples, pears, peaches, dyeing roots, medicinal plants, &c. Here alſo are found large foreſts of hiccory, oak, cedar, mulberry trees, &c. Savannas, or natural meadows, are both numerous and extenſive. On the N.W. ſide of this river are a coal mine, half a mile in extent, and two ſalt ponds, 100 yards in circumference, and ſeveral feet in depth. The Illinois furniſhes a communication with lake Michigan, by Chiago river, between which and the Illinois are two portages not exceeding in length four miles. The whole length of the river from the ſource of Theakiki, which is at a ſhort diſtance from the river St. Joſeph, oppoſite to fort Joſeph on the N., is 480 miles. The Indians have ceded to the United States, by the treaty of Greenville, in 1795, a tract of land 12 miles ſquare, at or near the mouth of the Illinois, and alſo a tract 6 miles ſquare, near the ſouth end of Illinois lake. This lake is merely a dilatation of the river, and is ſituated about 240 miles below the ſource of Theakiki, and 43 below the ſalt-ponds.

ILLISIO, in *Surgery*, a bruiſe or contuſion.

ILLITERATURE, in *Law*; if an illiterate man be to ſeal a deed, he is not bound to do it, if none be preſent to read it, if required: and reading a deed falſe will make it void. (2 Rep. 3. 11.) A man may plead *non eſt factum* to a deed read falſe; as when a releaſe of an annuity was read to an illiterate perſon, as a releaſe for the arrears only, &c. agreed to be releaſed. (Moore, 148.) If there is a time limited for a perſon to ſeal a writing; in ſuch caſe illiterature ſhall be no excuſe; becauſe he might provide a ſkilful man to inſtruct him: but when he is obliged to ſeal it upon requeſt, &c. there he ſhall have convenient time to be inſtructed. 2 Nelſon's Abr. 946.

ILLITURGI, in *Geography*, a town of Spain, in Bœtica, ſituated towards the N.E. upon the Bœtis.—Alſo, a town of Hiſpania Tarragonenſis, on this ſide of the Ebrus.

ILLOK, a town of Sclavonia, ſituated on the Danube; 16 miles W. of Peterwaradin. N. lat. 45° 23′. E. long. 18° 8′.

ILLORA, a town of Spain, in the province of Grenada; 16 miles N. of Loja.

ILLOSIS, from ειλεω, *to turn round*, in *Surgery*, a diſtortion of the eyes.

ILLUMINATION, in a *general ſenſe*, denotes the act of a luminous body, or a body that emits light; ſometimes, alſo, the ſtate of an opaque body that receives it.

Illumination, *Circle of.* See Circle.

ILLUMINATIVE *lunar month.* See Month.

ILLUMINATORS, artiſts whoſe province it was, by a kind of miniature painting, to embelliſh books with ornamented letters and ſmall paintings. The practice is of great antiquity.

ILLUMINED, Illuminati, a *Church term*, anciently applied to ſuch perſons as had received baptiſm.

This name was occaſioned by a ceremony in the baptiſm of adults: which conſiſted in putting a lighted taper in the hand of the perſon baptized, as a ſymbol of the faith and grace he had received in the ſacrament.

Illumined, Illuminati, is alſo the name of a ſect of heretics, who ſprang up in Spain about the year 1575, and were called by the Spaniards, *Alambrados.*

Their principal doctrines were, that, by means of a ſublime manner of prayer, which they had attained to, they entered into ſo perfect a ſtate, that they had no occaſion for ordinances, ſacraments, or good works: and that they could give way, even to the vileſt actions, without ſin.

The ſect of the illumined was revived in France in the year 1634, and were ſoon after joined by the Guerinets, or diſciples of Peter Guerin, who together made but one body, called alſo illumined: but they were ſo hotly purſued by Louis XIII. that they were ſoon deſtroyed.

The brothers of the Roſy Croſs are ſometimes alſo called Illumined. See Rosycrucian.

ILLUSTRIOUS, Illustris, was heretofore, in the Roman empire, a title of honour peculiar to people of a certain rank. It was firſt given to the moſt diſtinguiſhed among the knights who had a right to bear the latus clavus: afterwards, thoſe were entitled illuſtrious who held the firſt rank among thoſe called *honorati;* that is, the præfecti prætorii. præfecti urbis, treaſurers, comites, &c.

There were, however, different degrees among the illuſtres: as in Spain, they have grandees of the firſt and ſecond claſs, ſo in Rome they had their illuſtres, whom they called great, *majores;* and others leſs, called *illuſtres minores.* For inſtance, the præfectus prætorii was a degree below the maſter of the offices, though they were both illuſtres.

The novels of Valentinian diſtinguiſh as far as five kinds of illuſtres; among whom, the *Illuſtres adminiſtratores* bear the firſt rank.

ILLYRIA, Illyricum, or Illyris, in *Ancient Geography*, a country of Europe, the boundaries of which have not been preciſely aſcertained. It was wholly contained between the rivers Naro or Narenta and Drilo. Some authors, among whom we may reckon Pliny and Ptolemy, extend the limits of this country ſo as to include Liburnia and Dalmatia, which ſee reſpectively. M. D'Anville has aſſigned to Illyricum the whole country which lies between Iſtria and the ſmall river Arſia, as far as the mouth of the Drilo; but he obſerves, that the Illyric nations extend much farther. The rivers of Illyricum are the Arſia, forming the boundary of Italy, Oeneus, Tedanius, Titius, Naro, and Drinus or Drilo. The mountains form an elevated and extenſive chain, ſeparating Illyricum from Pannonia. Part of this chain bears the name of Albius or Albanus Mons, and conſidered as a kind of continuation of the Carnic Alps, traverſes Illyricum through its whole length from W. to E., as far as mount Scardus in Dardania. The ſea coaſt is covered with a number of iſlands. It appears from an inſcription of Gruter, that Illyricum was divided by Auguſtus into two provinces, the Superior and Inferior; but the ſituation of each is left doubtful by ancient hiſtorians and geographers. According to Ptolemy, the whole of Illyricum was divided into Liburnia and Dalmatia; and it was bounded on the N. by Pannonia, part of it having Iſtria on the weſt; on the E. by Mœſia Superior, and on the S. by Macedonia, and alſo on the coaſt by the Adriatic gulf. In the ſeas that waſhed the coaſts of Liburnia and Dalmatia there were ſeveral iſlands, called the Illyric iſlands.

ILM, or Stadt-Ilm, in *Geography*, a town of Germany, in the county of Schwartzburg Rudolſtadt, on the Ilm; 14 miles S. of Erfurt. N. lat. 50° 46′. E. long. 11° 9′.

ILMAWAY, a town on the W. coaſt of the iſland of Samar. N. lat. 11° 39′. E. long. 124° 50′.

ILMEN, a lake of Ruſſia, in the government of Novogorod, on which ſtands the ancient city of this name, about 48 miles long, and from 12 to 18 wide.

ILMENAU, a town of Germany, in the county of Henneberg, on the ſide of the Elbe, near which are ſome mines of ſilver and copper; 10 miles E. of Schmalkalden.

ILMINSTER, a market town and pariſh in the hundred of Abdick, and county of Somerſet, England. It contained, in the year 1800, 366 houſes, and 2045 inhabitants. This place appears to have been of ſome note in the time of the Saxons: for Ina, king of the Weſt Saxons, gave the church and manor to the abbey of Michelney, in this county. To this monaſtery it continued annexed till the diſſolution of religious houſes in the time of king Henry VIII. This monarch granted it to Edward, earl of Hereford; but on this nobleman's attainder, in 1551, Ilminſter reverted to the crown. It was afterwards granted to the Seymour family, and in 1793 belonged to John Hanning, eſq. of Barrington court. The church is a large handſome edifice, and was made prebendal in the time of king Richard I. Among other monuments it contains, is one to the memory of Nicholas and Dorothy Wadham, the founders of a college in Oxford, bearing their name. In this church were four chantries, reſpectively dedicated to St. Mary, St. Catharine, the Holy Croſs, and St. John the Baptiſt. The town conſiſts of two principal ſtreets, one of which extends nearly a mile in length; and the other about half a mile. In the year 1491 a fire conſumed ſeveral houſes here. Previous to the Norman conqueſt this town was privileged with a market. Near the centre of the town is a commodious market-houſe, or town-hall; alſo a long range of ſhambles. The cloth manufacture formerly flouriſhed here to a very great degree; and at preſent a conſiderable buſineſs prevails in the manufactory of narrow cloths. A free German ſchool was founded here in the year 1550 by Humphrey Walrond and Henry Greenfield. Since the firſt endowment the revenues have been greatly increaſed by ſubſequent benefactions. This pariſh is divided into five tithings, and comprehends eight hamlets. The market is held on Saturdays, and an annual fair is held the laſt Wedneſday in Auguſt. Collinſon's Hiſtory, &c. of Somerſetſhire, vol. i.

ILMOLA, a town of Sweden, in the government of Waſa; 44 miles N.E. of Chriſtianſtadt.

ILOCCOS, a province of the iſland of Luçon.

ILOMANTZ, a town of Sweden, in the government of Kuopio; 90 miles E. of Kuopio.

ILORCIS, in *Ancient Geography*, *Lorca*, a town of

Hither Spain, towards the weſt of Carthago Nova, called by Pliny " Monumentum Scipionis."

ILORI, in *Geography*, a town of Mingrelia, on the coaſt of the Black ſea; 14 miles S.E. of Iſgaur. N. lat. 43° 8'. E. long. 40° 42'.

ILSBO, a town of Sweden, in the province of Helſingland; 9 miles N. of Hudwickſwall.

ILSLEY, East, or *Market Ilſley*, anciently *Huldeſley*, or *Hildeſley*, is a ſmall market town in the hundred of Compton, Berkſhire, England. It is 53 miles diſtant from London; and was returned to parliament in the year 1801, as containing 114 houſes and 512 inhabitants. A weekly market is held on Wedneſdays, and it has two fairs annually. But the town is principally noticed for its ſheep market, which, next to that of the metropolis, is ſuppoſed to be the largeſt in England. It commences on Wedneſday, in Eaſter week, and continues to be held every alternate Wedneſday till Midſummer. This market of late years has become of the firſt importance; the annual average of ſheep ſold being upwards of 250,000, compriſing lambs, tegs, wethers, and ewes. The principal purchaſers are the farmers of Hertfordſhire and Buckinghamſhire, in which counties they are afterwards fatted for the London market. At Kates-Gore, in the pariſh of Eaſt Ilſley, were large ſtables, built by William, duke of Cumberland. Lyſons's Magna Britannia, vol. i.

ILST, or Ylst, a town of Holland, in the department of Frieſland, defended by a ditch filled with waters by the river Weymer; 12 miles N.E. of Staveren.

ILSTORP, a town of Sweden, in Weſt Gothland; 27 miles S.S.E. of Gotheborg.

ILTEN, a town of the principality of Luneberg; 16 miles S.S.W. of Zelle.

ILTERIB, a town of Syria, in the pachalic of Aleppo; 15 miles N.W. of Aleppo.

ILUA, in *Ancient Geography*, called alſo *Æthalia*, an iſland in the Mediterranean, on the coaſt of Etruria. See Elba.

ILUCHANO, in *Geography*, a town of Ruſſia, in the government of Upha; 32 miles S.S.E. of Menzelinſk.

ILUCIA, in *Ancient Geography*, a town of Hither Spain, belonging to the Oretani.

ILU-MULU, in *Botany*. See Spinifex.

ILUNUM, in *Ancient Geography*, a town of Spain, in the Tarragonenſis, belonging to the Baſtitani. Ptol.

ILURBIDA, a town of Spain, in the Tarragonenſis, in the country of the Carpetani. Ptol.

ILWILTZKOLSTE, in *Geography*, a town of Sweden, in the province of Skonen; 10 miles S. of Chriſtianſtadt.

ILY, in *Botany*. See Arundo *bambos*.

ILYE, in *Geography*, a town of Tranſilvania, on the river Maros; 32 miles S.S.W. of Weiſenburg.

ILZA, a town of Auſtrian Poland, in the palatinate of Sandomirz; 14 miles S. of Radom.

IMABARI, a town of Japan, on the N. coaſt of the iſland of Xicoco. N. lat. 34°. 10'. E. long. 134° 20'.

IMAGE, Imago, in *Optics*, a natural, lively repreſentation of an object, oppoſed to a ſmooth, well-poliſhed ſurface, or mirror.

The Latin word, *imago*, comes originally from the Greek μιμεισθαι, *imitari*, to *imitate*, or *mimic*.

Image, taken more largely, denotes the ſpectre, or appearance, of an object; whether by reflection or refraction.

In all plane mirrors, the image is of the ſame magnitude as the object; and appears as far behind the mirror, as the object is before it.

In convex mirrors, the image appears leſs than the object; and farther diſtant from the centre of the convexity than from the point of reflection.

Mr. Molyneux gives the following rule for finding the diameter of an image, projected in the diſtinct baſe of a convex mirror; as the diſtance of the object from the mirror is to the diſtance from the image to the glaſs; ſo is the diameter of the object to the diameter of the image. See Lens, Mirror, Reflection, and Refraction.

Image is alſo uſed for the trace, or mark, which outward objects impreſs on the mind, by means of the organs of ſenſe. See Idea.

Image alſo ſignifies an artificial repreſentation performed by man; as in painting, ſculpture, and the like. In which ſenſe the word is now generally uſed in ſpeaking of things holy, or imagined to be ſo.

The noble Romans preſerved the images of their anceſtors with a great deal of care and concern, and had them carried in proceſſion at their funerals and triumphs: theſe were commonly made of wax, or wood; though ſometimes of marble, or braſs. They placed them in the veſtibules of their houſes; and they were to ſtay there, even if the houſe happened to be ſold, it being accounted impious to diſplace them. Appius Claudius was the firſt who brought them into the temples, in the year of Rome 259, and he added inſcriptions to them, ſhewing the origin of the perſons repreſented, and their brave and virtuous achievements.

It was not, however, allowed for all who had the images of their anceſtors in their houſes, to have them carried at their funerals; this was a thing only granted to ſuch as had honourably diſcharged themſelves of their offices: for thoſe who failed in this reſpect forfeited that privilege; and in caſe they had been guilty of any great crime, their images were broken to pieces.

The Jews abſolutely condemn all images, and do not ſo much as ſuffer any ſtatues or figures in their houſes, much leſs in their ſynagogues, or places of worſhip.

The uſe and adoration of images are things that have been a long time controverted in the world.

It is plain from the practice of the primitive church, recorded by the earlier fathers, that Chriſtians, for the firſt three centuries after Chriſt, and the greater part of the fourth, neither worſhipped images nor uſed them in their worſhip. However, the greater part of the Popiſh divines maintain, that the uſe and worſhip of images were as ancient as the Chriſtian religion itſelf: to prove this, they allege a decree, ſaid to have been made in a council held by the apoſtles at Antioch, commanding the faithful, that they may not err about the object of their worſhip, to make images of Chriſt and worſhip them. (Baron. ad an. 102.) But no notice is taken of this decree till 700 years after the apoſtolic times after the diſpute about images had commenced. The firſt inſtance that occurs in any credible author of images among Chriſtians, is that recorded by Tertullian de Pudicit. c. 10. of certain cups, or chalices, as Bellarmine pretends, on which was repreſented the parable of the good ſhepherd carrying the loſt ſheep on his ſhoulders: but this inſtance only proves, that the church, at that time, did not think emblematical figures unlawful ornaments of cups or chalices. Another inſtance is taken from Euſebius, Hiſt. Eccl. lib. vii. cap. 18. who ſays, that in his time, there were to be ſeen two braſs ſtatues in the city of Paneas, or Cæſarea Philippi; the one of a woman on her knees, with her arms ſtretched out, the other of a man over-againſt her, with his hands extended to receive her; theſe ſtatues were ſaid to be the images of our Saviour, and the woman whom he cured of an iſſue of blood. From the foot of the ſtatue repreſenting our Saviour, ſays the hiſtorian, ſprung up an exotic plant, which, as ſoon as it grew to touch the border of his garment, was ſaid to cure all ſorts of diſtempers. Euſebius, however, vouches none of theſe things: nay, he ſuppoſes that the woman who erected this ſtatue of our Saviour was a Pagan, and aſcribes it to a Pagan cuſtom. Farther, Philoſtorgius, Eccl. Hiſt. lib. vii. c. 3. expreſsly ſays, that this ſtatue was carefully preſerved by the Chriſtians, but that they paid no kind of worſhip to it, becauſe it is not lawful for Chriſtians to worſhip braſs or any other matter. The primitive Chriſtians abſtained from the worſhip of images, not, as the Papiſts pretend, from tenderneſs to heathen idolaters, but becauſe they thought it unlawful in itſelf to make any images of the Deity. (Juſtin Mart. Apol. ii. p. 44. Clem. Alex. Strom. 5. Strom. 1. and Protr. p. 46. Aug. de Civit. Dei. lib. vii. c. 5. and lib. iv. c. 32. Id. de Fide et Symp. c. 7. Lactant. lib. ii. c. 3. Tertull. Apol. c. 12. Arnob. lib. vi. p. 202.) Some of the fathers, as Tertullian, Clemens Alexandrinus, and Origen, were of opinion, that, by the ſecond commandment, the arts of painting and engraving were rendered unlawful to a Chriſtian, ſtyling them evil and wicked arts. (Tert. de Idol. cap. 3. Clem. Alex. Admon. ad Gent. p. 41. Orig. contra Celſum, lib. vi. p. 182.) The uſe of images in churches, as ornaments, was firſt introduced by ſome Chriſtians in Spain, in the beginning of the fourth century; but the practice was condemned, as a dangerous innovation, in a council held at Eliberis in 305. Epiphanius, in a letter preſerved by Jerome (tom. ii. ep. 6.), bears ſtrong teſtimony againſt images, and may be conſidered as one of the firſt Iconoclaſts. The cuſtom of admitting pictures of ſaints and martyrs into the churches, for this was the firſt ſource of image worſhip, was rare in the latter end of the fourth century; but became common in the fifth: however, they were ſtill conſidered only as ornaments; and, even in this view, they met with very conſiderable oppoſition. In the following century the cuſtom of thus adorning churches became almoſt univerſal, both in the Eaſt and Weſt. Petavius expreſsly ſays (De Incar. lib. xv. cap. 14.), that no ſtatues were yet allowed in the churches; becauſe they bore too near a reſemblance to the idols of the Gentiles. Towards the cloſe of the fourth or beginning of the fifth century, images, which were introduced by way of ornament, and then uſed as an aid to devotion, began to be actually worſhipped. However, it continued to be the doctrine of the church in the ſixth and in the beginning of the ſeventh century, that images were to be uſed only as helps to devotion, and not as objects of worſhip. The worſhip of them was condemned in the ſtrongeſt terms by pope Gregory the Great; as appears by two letters of his written in 601. From this time, to the beginning of the eighth century, there occurs no ſingle inſtance of any worſhip given, or allowed to be given, to images, by any council or aſſembly of biſhops whatever. But they were commonly worſhipped by the monks and populace in the beginning of the eighth century; inſomuch, that in the year 726, when Leo publiſhed his famous edict, it had already ſpread into all the provinces ſubject to the empire. See the hiſtory of the oppoſition to them under ICONOCLASTS. See Bower's Hiſt. of the Popes, vol. iii. p. 202, &c.

The Lutherans condemn the Calviniſts for breaking the images in the churches of the Catholics, looking on it as a kind of ſacrilege; and yet they condemn the Romaniſts (who are profeſſed image-worſhippers) as idolaters: nor can theſe laſt keep pace with the Greeks, who go far beyond them in this point; which has occaſioned abundance of diſputes among them. See ICONOCLASTS.

The Mahometans have a perfect averſion to images; which was what led them to deſtroy moſt of the beautiful monuments of antiquity, both ſacred and profane, at Conſtantinople.

The method of caſting images, &c. among the Hindoos, is in the uſual ſtile of ſimplicity, that, with the little variety of tools obſerved to be in uſe, has been ſo frequently remarked of eaſtern people. The following paragraph from the Hindoo Pantheon is deſcriptive of this proceſs of Indian metallurgy. "The reaſon why an exact duplicate of an image is a proof of its not being of Hindoo workmanſhip, will appear in the deſcription of their mode of caſting in metals. Firſt, the artiſt makes in wax the exact model, in every particular, of his intended ſubject, be it what it may, whether an image of a deity, or the hinge of a box: over this he plaſters a covering of fine clay, well moiſtened and mixed, leaving an aperture at ſome part; when dry it is put on a fire, with the hole downwards, and the wax, of courſe, melts out. The plaſter is now a mould, and receives at the aperture the molten metal, giving it externally, when cool, the exact form of its own concavity; in other words, of its original waxen model. The plaſter or cruſt, or mould, is now broken off, and the image (ſay) is produced ſometimes ſufficiently correct to require no after-poliſhing. The beautiful ſpecimens of Hindoo mythology caſt at Benares, under the ſuperintendance of Mr. Wilkins and ſome Pandits, have never ſince received the leaſt poliſh or filing; but are now ſeen at the India-houſe muſeum, exactly as they made their firſt appearance from the mould: from theſe claſſical ſubjects ſeveral of my plates have been engraved.

"That Hindoo caſts have but little muſcular expreſſion, is not, perhaps, to be conſidered altogether as defective, or attributed to want of ſkill in the artiſts. The human ſubject with them is rounder and plumper, leſs marked by angles and muſcles, than the harder and ruder perſons of higher latitudes, who, of courſe, exhibit more "nerve and pith." The models from which Hindoo founders have borrowed their forms, partake more of the roundneſs of Apollo, than of the muſcle of Hercules." Hin. Pan. p. 420.

IMAGE, in *Rhetoric*, alſo ſignifies a lively deſcription of any thing in a diſcourſe.

Images, in diſcourſe, are defined, by Longinus, to be, in general, any thoughts proper to produce expreſſions, and which preſent a kind of picture to the mind.

But, in the more limited ſenſe, he ſays, images are ſuch diſcourſes as come from us, when, by a kind of enthuſiaſm, or an extraordinary emotion of the ſoul, we ſeem to ſee the things whereof we ſpeak, and preſent them before the eyes of thoſe who hear us.

Images, in rhetoric, have a very different uſe from what they have among the poets: the end principally propoſed in poetry is aſtoniſhment and ſurprize; whereas the thing chiefly aimed at in proſe is to paint things naturally, and to ſhew them clearly. They have this, however, in common, that they both tend to move, each in its kind.

Theſe images, or pictures, are of vaſt uſe, to give weight, magnificence, and ſtrength to a diſcourſe. They warm and animate it; and, when managed with art, according to Longinus, ſeem as it were to tame and ſubdue the hearer, and put him in the power of the ſpeaker. See HYPOTYPOSIS.

IMAGINARY QUANTITIES, or *Impoſſible Quantities*, in *Algebra*, are certain expreſſions that ariſe in various algebraical and trigonometrical operations, to which no value, either rational or irrational, can be aſſigned, yet being ſubſtituted in the equations whence they were deduced, are found to anſwer the condition of the queſtion. Theſe expreſſions ariſe in the extraction of the even roots of a negative quantity, and may be all reduced to one of the forms $a\sqrt{-1}$, or $b + a\sqrt{-1}$; a part only of this latter form being imaginary, but this, when taken collectively with the other part, renders the whole expreſſion, like itſelf, imaginary. Whenever a quantity of this kind ariſes in the ſolution of a problem, it indicates that there are ſome conditions ſuppoſed that are impoſſible, and hence it may be ſaid, that an imaginary expreſſion is a ſign of impoſſibility. Thus, for example, let there be propoſed the two equations $x + y = 10$, and $xy = 26$, to find x and y. Firſt, $x = \frac{26}{y}$, therefore $\frac{26}{y} + y = 10$, or $y^2 - 10y = -26$; whence is obtained $y = 5 \pm \sqrt{-1}$, which is an imaginary expreſſion; and hence we conclude, that the two conditions in the problem propoſed were inconſiſtent with each other; that is, the product of no two quantities, whoſe ſum is equal 10, can be equal to 26; or 10 cannot be divided in two parts, ſuch that their product ſhall be equal to 26. But if we ſubſtitute this value of y in the equation $y^2 - 10y = -26$, it will be found to anſwer the conditions required.

The firſt notice that is taken of imaginary expreſſions, or of the ſquare root of negative quantities, is found in Cardan's algebra, who was moſt probably firſt led to the conſideration of them, from the ſolutions of thoſe cubic equations, which are now termed irreducible, and in which ſuch expreſſions always ariſe, the roots of them being of the form $x = \sqrt[3]{b + a\sqrt{-1}} + \sqrt[3]{b - a\sqrt{-1}}$, each of which parts are imaginary; and thus it is, that ſome compenſation takes place, and the root, though expreſſed in ſuch terms, that no value can be given to either, is notwithſtanding equal to a real quantity; this very ſingular circumſtance, as ſoon as it was obſerved by Cardan, would no doubt lead him to an inveſtigation of this ſpecies of quantity, but neither he, nor any other author, has yet been able to unravel the myſteries that theſe ſymbols involve, nor has any ſubject of mathematical enquiry led to more angry diſputes: ſome aſſerting that ſuch expreſſions as the mind can form no conception of, or at leaſt of what they are intended to repreſent, ought not to be introduced into a ſcience, the excellence of which conſiſts in the rigour and evidence of its demonſtrations, and that reſults thus obtained are unworthy of notice. On the other hand, it has been contended, that in all caſes where the reſults thus deduced have been compared with thoſe ariſing from the ſtricteſt geometrical inveſtigations, they have always been found perfectly to agree; and that the ſymbol $\sqrt{-1}$, although we can form no idea of what it repreſents, yet that being ſubjected to the ſame rules as other analytical ſymbols, the reſults derived from its introduction, are equally certain and concluſive: while others, taking a mean between theſe extremes, admit, that though, from analogy, there is no reaſon to doubt the truths obtained by means of theſe imaginary ſymbols, yet that it always adds a degree of conviction, when the reſults are verified by a more rigid analyſis, and conſequently that they ought not to be employed when other means are equally ſucceſsful. Baron Maſeres is decidedly of the firſt of theſe opinions, on which ſubject he has a work, entitled "A Diſſertation on the Uſe of the negative Sign in Algebra;" in which is demonſtrated the nature of thoſe ſigns, and the rules that are commonly given for working with them, and where he has alſo ſhewn, that equations of the ſecond and third degree may be effected without this introduction, or at leaſt without the conſideration of negative roots. Mr. Woodhouſe's opinion on this ſubject may be ſeen in his "Analytical Calculations;" and a very ingenious paper on the ſame head is inſerted in the "Philoſophical Tranſactions" for 1778, by profeſſor Playfair of Edinburgh, who has there given us ſeveral examples in which theſe imaginary expreſſions may be introduced to advantage into trigonometrical and other ſpecies of calculation.

Of the Algorithm of Imaginary Quantities.—After what has been ſaid of the various opinons entertained by different able mathematicians on this ſubject, it will not be ſurpriſing to find that the algorithm of theſe quantities has alſo been unſettled, ſuch as the rules for multiplication, diviſion, and involution; ſome authors making the reſults in theſe operations different from others, and each aſſigning reaſons for the rules he has given; it will, however, be uſeleſs to follow them through their particular arguments, as there are ſome of them ſpecious, and many of them fallacious; we ſhall therefore barely ſtate thoſe reaſons on which the rules now commonly adopted are founded. It is an eſtabliſhed principle in algebra, that $+a \times +a = a^2$, and $-a \times -a = a^2$; and hence, converſely, it follows, that $\sqrt{a^2} = +a$, or $-a$; but this ambiguity has no place, if we know how a^2 was generated, and have occaſion to retrace the ſteps of our operation; that is, we cannot ſay that $\sqrt{-a \times -a} = \pm a$; nor that $\sqrt{+a \times +a} = \pm a$; but the ſquare root of a^2, in both theſe caſes, is determined; that is, when conſidered with regard to its generation it has only one root; whereas, had its origin not been known, we muſt have given the ambiguous ſign to the root a, and for this obvious reaſon, that we know not when a^2 is unconditionally aſſumed, whether it be the repreſentative of $(+a)^2$, or $(-a)^2$; theſe being both expreſſed by the ſame ſymbol a^2. The reſtriction of which we have been ſpeaking, ſometimes takes place in equations; thus, for example, ſuppoſe it were required to find the value of x in the equation $\sqrt{12 + x} = 6 + \sqrt{x}$; we ſoon find $x = 4$; but there is this limitation, that the ſquare root of x, or of 4, muſt neceſſarily be -2, and not $+2$; as the latter ſuppoſition will not anſwer the conditions of the equation; and the reaſon is obvious, namely, that we firſt found $\sqrt{x} = -2$; and then $x = 4$; but now, in re-tracing our ſteps, we muſt remember how this 4 was generated, and that it has not two roots, or has not the ambiguous ſign belonging to it, as the ſquare root of 4 would have if unconditionally aſſumed; in fact, the ambiguity in the extraction of the ſquare root ariſes only in thoſe caſes in which we are unacquainted with the generation of the quantity whoſe root is to be extracted; and here it muſt neceſſarily occur, becauſe we have before agreed to repreſent both $(+a)^2$ and $(-a)^2$ by the ſame character a^2.

If therefore it be required to find the product of $\sqrt{-1} \times \sqrt{-1}$, we ſee immediately that it is equal to $\sqrt{(-1)^2} = \sqrt{1}$; but under this limitation, that the root can only be expreſſed by -1, and therefore this product may always be repreſented by -1; or by $-\sqrt{1}$; and it can never have any other form. If the product $\sqrt{-1} \times \sqrt{-1} \times \sqrt{-1}$ were required, this would on the ſame principles be repreſented by $-\sqrt{-1}$; and the fourth power of $\sqrt{-1}$ is equal to $+1$; but with this limitation, that the root of this quantity can only be -1, and not ± 1: hence then we have $(\sqrt{-1})^2 = -1$, $(\sqrt{-1})^3 = -\sqrt{-1}$ and $(\sqrt{-1})^4 = 1$, $(\sqrt{-1})^5 = \sqrt{-1}$; and conſequently, the 6th power will be the ſame as the 2d; the 7th the ſame as the 3d; the 8th the ſame as the 4th, and ſo on.

And exactly the converſe of theſe rules muſt be obſerved in diviſion. Theſe examples involve all the caſes that can ariſe; for if the quantities to be multiplied or involved be $\sqrt{-a} \times \sqrt{-b}$, we have only to write theſe, $\sqrt{a} \cdot \sqrt{-1} \times \sqrt{b} \cdot \sqrt{-1} = -\sqrt{ab}$; and $(\sqrt{-a})^2 \times (\sqrt{-b})^2 = ab(\sqrt{-1})^2 = -ab$; this product may be put under a ſimpler form, $\sqrt{-a^2} \times \sqrt{-b^2} = a\sqrt{-1} \times b\sqrt{-1} = ab(\sqrt{-1})^2 = -ab$: this ſhews the neceſſity of always ſeparating the quantities into ſuch factors, that only -1 is found under the radical, for according to the common rules for the multiplication of ſurds, we ſhould have $\sqrt{-a^2} \times \sqrt{-b^2} = \sqrt{-a^2 \times -b^2}\ \sqrt{a^2 b^2} = ab$, which is a falſe reſult; but the error is explained from what is obſerved in the preceding paragraph; for we have no right in this caſe to aſſume $\sqrt{a^2 b^2} = ab$, becauſe we know its generation, and that it aroſe from the product of two negative ſigns, and therefore its root muſt neceſſarily be $-ab$, and not $+ab$.

Having thus eſtabliſhed rules for the multiplication, diviſion, and involution of imaginary quantities, we ſhall give an example, on which a well known trigonometrical formula is deduced from an imaginary expreſſion for the ſine and coſine of an angle.

Let a be an arc of a circle, of which the radius is unity, and let c be the number that has unity for its hyperbolic logarithm; then the ſine of the arc a, or ſin. $a = \frac{c^{a}\sqrt{-1} - c^{-a}\sqrt{-1}}{2\sqrt{-1}}$; and coſin. $a = \frac{c^{a}\sqrt{-1} + c^{-a}\sqrt{-1}}{2}$, which exponential and imaginary values of the ſine and coſine are well known to geometers; and the inveſtigation of them, according to the received arithmetic of impoſſible quantities, may be as follows. Let ſin. $a = z$, then $\dot{a} = \frac{\dot{z}}{\sqrt{(1 - z^2)}}$. To bring this fluxion to ſuch a form that its fluent may be found by logarithms, both numerator and denominator are to be multiplied by $\sqrt{-1}$, then $\dot{a} = \sqrt{-1} \times \frac{\dot{z}}{\sqrt{(1 - z^2)}}$; and (by form 6 Harm. Men.) $a = \sqrt{-1} \times \log. \frac{z + \sqrt{(z^2 - 1)}}{\sqrt{-1}}$. Hence $\frac{a}{\sqrt{-1}}$, or $1 \times \frac{a}{\sqrt{-1}} = \log. \frac{z + \sqrt{(z^2 - 1)}}{\sqrt{-1}}$, and becauſe 1 is the log. c; $c^{\frac{a}{\sqrt{-1}}} = \frac{z + \sqrt{(z^2 - 1)}}{\sqrt{-1}}$; therefore, if both parts of the fractional index of c be multiplied by $\sqrt{-1}$, $c^{-a}\sqrt{-1} = \frac{z + \sqrt{(z^2 - 1)}}{\sqrt{-1}}$. Again, if the arc a be conſidered as negative, its ſine becomes alſo negative, and therefore $-a = \sqrt{-1} \times \log. \frac{-z + \sqrt{(z^2 - 1)}}{\sqrt{-1}}$; or $-a\sqrt{-1} = -\log. \frac{-z + \sqrt{(z^2 - 1)}}{\sqrt{-1}}$; and $a\sqrt{-1} = \log. \frac{-z + \sqrt{(z^2 - 1)}}{\sqrt{-1}}$; whence alſo, $c^{a}\sqrt{-1} = \frac{-z + \sqrt{(z^2 - 1)}}{\sqrt{-1}}$. If from this equation the former be taken away, there remains $-\frac{2z}{\sqrt{-1}} = c^{a}\sqrt{-1} - c^{-a}\sqrt{-1}$; whence dividing by $2\sqrt{-1}$, we have $z =$ ſin. $a = \frac{c^{a}\sqrt{-1} - c^{-a}\sqrt{-1}}{2\sqrt{-1}}$; and by adding together the equations, a value of the coſines may be found in the ſame imaginary terms which were aſſigned above. Now by means of theſe expreſſions, many theorems may be demonſtrated; it may for example be ſhewn, that if a and b are any two arcs of a circle of which the radius is unity, then

$$\text{ſin. } a + \text{coſin. } b = \frac{\text{ſin. } a + b}{2} + \frac{\text{ſin. } a - b}{2}.$$

For ſin. $a = \frac{c^{a}\sqrt{-1} - c^{-a}\sqrt{-1}}{2\sqrt{-1}}$; and coſin. $b = \frac{c^{b} \cdot \sqrt{-1} + c^{-b}\sqrt{-1}}{2}$, therefore ſin. a + coſin. b =

$$\frac{c^{a+b} \cdot \sqrt{-1} - c^{-a-b} \cdot \sqrt{-1} + c^{a-b} \cdot \sqrt{-1} - c^{b-a} \cdot \sqrt{-1}}{4\sqrt{-1}}$$

$= \frac{\text{ſin. } a + b}{2} + \frac{\text{ſin. } a - b}{2}$; which is a well known formula, and it has been deduced by means of the imaginary expreſſions that we firſt found, and various other examples of a ſimilar nature might here be given.

This example, with ſeveral others, all tending to ſhew the utility of theſe imaginary expreſſions, may be ſeen in the paper of Mr. Playfair before referred to, after which, and many ingenious remarks on this ſubject, the profeſſor concludes his paper with the following obſervation: "Supported on ſo ſure a foundation, the arithmetic of impoſſible quantities will always be found a uſeful inſtrument in the diſcovery of truth, and may be of ſervice when a more rigid analyſis can hardly be applied; for this reaſon many reſearches concerning it, which in themſelves might be deemed abſurd, are yet not deſtitute of utility: M. Bernouilli has found, for example, that if r be the radius of a circle, the circumference equal $\frac{4\log.\sqrt{-1}}{\sqrt{-1}} \cdot r$: conſidered as a quadrature of the circle, this imaginary theorem is wholly inſignificant, and would deſervedly paſs for an abuſe of calculation; at the ſame time we learn from it, that if in any equation the quantity $\frac{\log.\sqrt{-1}}{\sqrt{-1}}$ enters, it may be made to diſappear by the ſubſtitution of a circular arc."

We have ſaid nothing in the foregoing paragraphs of a paper on the ſubject of imaginary quantities by M. Buée, publiſhed in the Philoſophical Tranſactions for 1806, in which the author endeavours to ſhew, that imaginary quantities are ſigns of *perpendicularity*, a notion peculiar to himſelf; but there are other parts of the eſſay that diſplay very conſiderable ability and ingenuity, but of which our limits will not allow a particular deſcription.

IMAGINARY *Roots of an Equation,* are thoſe roots, or values of the unknown quantity in an equation, which contain ſome imaginary expreſſion. Thus the roots of the equation $y^2 - 10y + 26$, are $5 \pm \sqrt{-1}$; and the three roots of the cubic equation $x^3 - 1 = 0$, are $x = \frac{-1 + \sqrt{-3}}{2}$; $\frac{-1 - \sqrt{-3}}{2}$; and 1: of which the latter is the only poſſible value of x, the two former being imaginary or impoſſible. Sometimes the root of an equation may be repreſented by imaginary expreſſions, when it is in fact equal to a real quantity, as is the caſe in the ſolution of cubic equations of the irreducible form, according to the method of Cardan. Albert Girard was the firſt author who treated expreſsly on the imaginary roots of equations, and ſhewed that every equation has as many roots, either real or imaginary, as is denoted by the higheſt power of the index; ſee his "Inventions Nouvelles en l'Algebra." D'Alembert, in the Memoires of Berlin for 1746, firſt demonſtrated, that every imaginary expreſſion may be reduced to the form $a\sqrt{-1}$, or $b + a\sqrt{-1}$; and that the number of imaginary roots always enter in pairs, and conſequently every equation of an odd dimenſion muſt have at leaſt one real root, but an equation of an even degree may have all its roots impoſſible. Waring alſo, in his "Meditationes Algebraicæ," has treated largely on this head, ſee chapters 2 and 3 of that work; in which will be found many excellent obſervations on this ſubject, with rules for determining the number of imaginary or impoſſible roots in a given equation of any dimenſions.

The rule given by ſir I. Newton, in his Univerſal Arithmetic, for finding the number of impoſſible roots in an equation is as follows. Conſtitute a ſeries of fractions, whoſe denominators are the ſeries of natural numbers 1, 2, 3, 4, 5, &c. continued to the number repreſenting the index or exponent of the higheſt power of the equation, and their numerators the ſame ſeries of numbers, in the contrary order; and divide each of thoſe fractions by that next before it, and place the reſulting quotients over the intermediate terms of the equation; then under each of the intermediate terms; if its ſquare, when multiplied by the fraction over it, be greater than the terms on each ſide of it, place the ſign +; but if not, the ſign —; and under the firſt and laſt term place the ſign +; then will the equation have as many imaginary roots, as there are changes of the under written ſigns from + to —, and from — to +. Thus, for the equation $x^3 - 4x^2 + 4x - 6 = 0$, the ſeries of fractions is $\frac{3}{1}$, $\frac{2}{2}$, $\frac{1}{3}$; and the ſecond of theſe, divided by the firſt, gives $\frac{2}{6}$, or $\frac{1}{3}$; and the third, divided by the ſecond, is alſo $\frac{1}{3}$; hence theſe fractions placed over the intermediate terms will ſtand thus,

$$\left\{\begin{array}{cccc} & \frac{1}{3} & \frac{1}{3} & \\ x^3 & -\,4x^2 & +\,4x & -\,6 \\ + & + & - & + \end{array}\right.$$

Now, becauſe the ſquare of the ſecond term multiplied by its ſuperſcribed fraction is $\frac{16}{3}x^2$, which is greater than $4x^2$, the product of the two adjacent terms, therefore the ſign + is ſet below the ſecond term; and becauſe the ſquare of the third term multiplied by its correſponding fraction is $\frac{16}{3}x^2$, which is leſs than $24x^2$, the product of the terms on each ſide of it, therefore the ſign — is placed under that term; alſo the ſign + is ſet under the firſt and laſt terms. Hence the two changes of the ſign, firſt from + to — 1, and then again from — to +, indicate that the given equation has two impoſſible roots.

When two or more of the terms are wanted together, under the place of the firſt of the different terms write the ſign —, under the ſecond the ſign +, under the third the ſign — 1, and ſo on, always varying the ſigns, except that under the laſt of the deficient terms, which muſt always be +, when the adjacent terms on both ſides of the deficient terms have contrary ſigns; as in the equation

$$\begin{array}{cccccc} x^5 & +\,ax^4 & +\,0x^3 & +\,0x^2 & +\,0.x & +\,b = 0 \\ + & + & - & + & - & + \end{array}$$

which has four imaginary roots.

This rule, however, may ſometimes fail of giving the true number of impoſſible roots, on account of the roots being more than there can be changes of the ſign, but this ſeldom happens.

This rule is demonſtrated by Maclaurin, who has alſo given another of his own, which never fails; and the ſame has alſo been done by Mr. Campbell. See Philoſophical Tranſactions, vols. 34 and 35.

IMAGINARY *Root*. See ROOT.

IMAGINATION, as it has been often defined, is a power or faculty of the ſoul, whereby it conceives and forms ideas of things, by means of impreſſions made on the fibres of the brain, by ſenſation. This power depends on the memory. Ideas enter into the mind by the ſenſes; the memory retains them; and the imagination compounds them. Some writers have diſtinguiſhed two ſorts of imagination; the one, which conſiſts in retaining the ſimple impreſſion of objects, is called the *paſſive* imagination; the other arranges the images that are received, and combines them in a thouſand ways, and is called the *active* imagination. The organs of our ſenſes are compoſed of fibrillæ, or little fibres, which, at one end, terminate in the outward parts of the body and ſkin, and at the other in the middle of the brain. Theſe fibres may be moved two ways; either beginning at that end which terminates in the brain, or at that which terminates without. Now the agitation of theſe fibres cannot be communicated to the brain, but the ſoul will be affected, and perceive ſomething. If then the agitation begins where objects make their firſt impreſſion, *viz.* on the external ſurface of the fibres of our nerves, and is communicated thence to the brain; the ſoul, in that caſe, judges that what ſhe perceives is without, that is, ſhe percieves an external object as preſent; but if only the anterior fibres be moved by the courſe of the animal ſpirits, or in ſome other manner, the ſoul then imagines, and judges, that what ſhe perceives is not without, but within the brain; that is, ſhe perceives an object as abſent; and herein lies the difference between ſenſation and imagination.

The faculty of imagining, or imagination, only conſiſts, according to the doctrine of Malebranche, in the power which the ſoul has of forming images of objects, by producing a change in the fibres of that part of the brain, which may be called the principal part, becauſe it correſponds to all the parts of our body, and is the place where the ſoul (if it may be ſo ſaid) immediately reſides. It matters not which that part is, nor whether the opinion of Willis be true, who places the common ſenſe in the two bodies, called *corpora ſtriata*, and the imagination in the *corpus calloſum*; or that of Fernelius, who places ſenſation in the pia mater that encompaſſes the ſubſtance of the brain; or that of Deſcartes, who places it in the pineal gland: it ſuffices that there is ſome ſuch part.

Since then the imagination only conſiſts in a power which the ſoul has of forming images of objects, by impreſſing them on the fibres of the brain, it follows that the larger and more diſtinct the veſtigia or tracks of the animal ſpirits; which are the lines or ſtrokes, as it were, of thoſe images, are; the more ſtrongly and diſtinctly the ſoul imagines thoſe objects. Now as the breadth, depth, and cleanneſs of the ſtrokes of a ſculpture depend on the force wherewith the graver acts, and the obedience which the copper yields, ſo the depth and cleanneſs of the tracks of the imagination depend on the force of the animal ſpirits, and the conſtitution of the fibres of the brain; and it is that variety which is found in thoſe two things, to which we owe almoſt all the vaſt difference which we obſerve in people's minds. On the one ſide are abundance and ſcarcity, briſkneſs and ſlowneſs, largeneſs and ſmallneſs, of the animal ſpirits; and on the other hand, delicacy or groſſneſs, humidity or dryneſs, ſtiffneſs or flexibility of the fibres of the brain; and laſtly, a particular relation which the animal ſpirits may have with thoſe fibres: from the various combinations of which things, will reſult a ſufficiently great variety, to account for all the different characters which appear in the minds of men: and from the ſame principle flows that difference which is obſerved in the ſame perſon's mind, at different times, and under different circumſtances, as in childhood, manhood, and old age, in ſickneſs, health, &c.

It may here be obſerved, that the fibres of the brain are more agitated by the impreſſion of objects than by the courſe of the animal ſpirits; and for this reaſon the ſoul is more affected with objects, which it perceives by ſenſation, and which it looks on as preſent, and capable of giving it pleaſure or pain, than by thoſe perceived by imagination, which it judges to be diſtant. And yet it ſometimes happens, that in perſons whoſe animal ſpirits are extremely agitated by faſting, waking, drinking, a fever, or ſome violent paſſion, theſe ſpirits move the inward fibres of the brain as forcibly as inward objects do; ſo that thoſe perſons perceive things by ſenſation, which they ſhould only perceive by imagination; for imagination and ſenſation only differ from each other, as the greater from the leſs. (See Malebranche, Recher. de la Verité, lib. ii. See Madness, Delirium, Phrensy, Melancholy, &c.)

Imagination or fancy, ſays the ingenious Mr. Harris, though as to its origin it may be ſubſequent to ſenſe, yet is truly prior to it in dignity and uſe. It is this which retains the fleeting forms of things, when things themſelves are gone, and all ſenſation is at an end. The difference between ſenſe and imagination appears from hence; that we have an imagination of things that are gone and extinct, which cannot be made the objects of ſenſation. We have an eaſy command over the objects of our imagination; whereas our ſenſations are neceſſary, when their objects are preſent. Imagination is alſo diſtinguiſhed from memory, as the former views ſome relict of ſenſation repoſed within us, without thinking of its riſe, or referring it to any ſenſible object, whereas memory views ſuch relict, referring it at the ſame time to that ſenſible object, which in time paſt was its cauſe and original, and recollection is the road which leads to memory, through a ſeries of ideas, however connected, whether rationally or caſually. Beſides, imagination may exhibit, after a manner, things that are to come: but memory is confined in the ſtricteſt manner to the paſt. Hermes, p. 354, &c. ed. 2d.

Conception is frequently uſed as ſynonymous with imagination. Thus Dr. Reid ſays (Eſſays on the Intellectual Powers of Man, p. 397.) that "imagination, in its moſt proper ſenſe, ſignifies a lively conception of objects of ſight. This is a talent of importance to poets and orators, and deſerves a proper name, on account of its connection with their arts." He adds, that "imagination is diſtinguiſhed from conception, as a part from a whole." Profeſſor Stewart (in his Elements of the Philoſophy of the Human Mind, p. 135, 8vo.) diſtinguiſhes between conception and imagination. The buſineſs of conception, according to this ingenious writer, is to preſent us with an exact tranſcript of what we have felt or perceived. But we have, moreover, a power of modifying our conceptions, by combining the parts of different ones together, ſo as to form new wholes of our own creation. Accordingly he employs the word imagination to expreſs this power, which, in his opinion, is the proper ſenſe of the word; if imagination be the power which gives birth to the productions of the poet and the painter. This is not a ſimple faculty of the mind. It preſuppoſes abſtraction, to ſeparate from each other, qualities and circumſtances which have been perceived in conjunction; and alſo judgment and taſte to direct us in forming the combinations. The two powers of conception and imagination, though diſtinct, are very nearly allied; and are frequently ſo blended, that it is difficult to ſay, to which of the two ſome particular operations of the mind are to be referred. There are alſo many general facts which hold equally with reſpect to both. Logicians in general have maintained, that conception, or imagination, often uſed as ſynonymous with it, is attended with no belief of the exiſtence of its object. But this is a principle which profeſſor Stewart has controverted. (See Conception.)

Imagination, according to Dr. Hartley, is the faculty to which we aſcribe the recurrence of ideas in a vivid manner, without regard to the order of paſt impreſſions. All ideas, he ſays, are the reſult either of new impreſſions, or of aſſociation with preceding ideas, though the connection cannot in every inſtance be immediately traced out. In that ſtate of mind denominated a reverie, a perſon is more attentive to his own thoughts than to external impreſſions, and therefore more of his ideas are deducible from aſſociation, and fewer from external impreſſions. And as dreams are the imaginations or reveries of a ſleeping man, theſe are deducible from impreſſions lately received, from the ſtate of the body, and particularly of the ſtomach and brain, and alſo from aſſociation. See Dream.

Every man, ſays Dr. Reid, is conſcious of a ſucceſſion of thoughts, which paſs in his mind while he is awake, even when they are not excited by external objects; and this continued ſucceſſion of thought has, by modern philoſophers, been called the "imagination." It is often denominated the "train of ideas," and is made up of many other operations of mind, as well as conceptions or ideas. Memory, judgment, reaſoning, paſſions, affections, and purpoſes; in a word, every operation of the mind, excepting thoſe of ſenſe, is exerted occaſionally in this train of thought, and has its ſhare as an ingredient; ſo that we muſt take the word idea in a very extenſive ſenſe, if we make the train of our thoughts to be only a train of ideas. Theſe trains of thought in the mind are of two kinds: they are either ſuch as flow ſpontaneouſly, like water from a fountain, without any exertion of a governing principle to arrange them, or they are regulated and directed by an active effort of the mind with ſome view and intention. Theſe two kinds, however diſtinct in their nature, are for the moſt part mixed in perſons awake and arrived at years of underſtanding; and they take their denomination from that which is moſt prevalent. It is to be obſerved, however, that a train of thought, which at firſt was ſtudied and compoſed, may by habit preſent itſelf ſpontaneouſly. Thoſe trains of thought that are ſpontaneous muſt be the firſt in the order of nature. When the work of the day is over, and a man lies down to relax his body and mind, he cannot ceaſe from thinking, though he deſires it. Something occurs to his fancy; that is followed by another thing; and ſo his thoughts are carried from one object to another, till ſleep cloſes the ſcene. In this operation of the mind, it is not one faculty only that is employed. Though memory acts the moſt conſiderable part, other powers are exerciſed and directed to their proper objects. In reveries of this kind we judge and reaſon, form an opinion of perſons and things, and paſs ſentence accordingly. Such trains of thought may be called hiſtorical. Others may be denominated romantic, in which the plot is formed by the creative power of fancy, without any regard to what did or will happen. In theſe alſo, the powers of judgment, taſte, moral ſentiment, as well as the paſſions and affections, come in and take a ſhare in the execution. Mr. Addiſon, in the "Spectator," calls this play of the fancy "caſtle-building." The romantic ſcenes of fancy are moſt commonly the occupation of young minds, not yet ſo deeply engaged in life as to have their thoughts taken up by its real cares and buſineſs. In perſons come to maturity, there is even in theſe ſpontaneous ſallies of fancy ſome arrangement of thought. But how is this arrangement effected? It has all the marks of judgment and reaſon, yet it ſeems to go before judgment, and to ſpring forth ſpontaneouſly. It is highly probable, that whatever is regular and rational in a train of thought, which preſents itſelf ſpontaneouſly to a man's fancy, without any ſtudy, is a copy of what had been before compoſed, by his own rational powers, or thoſe of ſome other perſon. They are the reſult of habits previouſly acquired. In order to account for the regular arrangement of thoſe operations of fancy that are in a great degree ſpontaneous, we need only recur to the natural powers of judgment and invention, the pleaſure that always attends the exerciſe of thoſe powers, the means we have of improving them by imitation of others, and the effect of practice and habits, without ſuppoſing any unaccountable attractions of ideas by which they arrange themſelves. Beſides the original powers which fancy poſſeſſes, which are very different in different perſons, it has likewiſe more regular motions, to which it has been trained by a long courſe of diſcipline and exerciſe; and by which it may *extempore*, and without much effort, produce things that have a conſiderable degree of beauty, regularity, and deſign. Upon the whole we may obſerve, that every thing that is regular in that train of thought, which we call fancy or imagination, from the little deſigns and reveries of children, to the grandeſt productions of human genius, was originally the offſpring of judgment or taſte, applied with ſome effort greater or leſs. In order to account for this ſucceſſive train of thought in the mind, a theory, which was ſuggeſted by Mr. Hobbs, has been more diſtinctly explained by Mr. Hume. That author thinks, that the train of thought in the mind is owing to a kind of attraction which ideas have for other ideas that bear certain relations to them. The relations which produce this attraction of ideas, he thinks, are theſe three only, *viz.* cauſation, contiguity in time or place, and ſimilitude. Theſe, according to this writer, are the only general principles that unite ideas. Dr. Reid very juſtly obſerves, that this enumeration of the relations of things is very inaccurate. Lord Kames, in his "Elements of Criticiſm," and Dr. Gerard in his "Eſſay on Genius," have given a much fuller and juſter enumeration of the cauſes that influence our train of thinking. To theſe works we refer. After all, this attraction of ideas may be reſolved into the power of habit. As far as it is in our power to give a direction to our thoughts, which it undoubtedly is in a great degree, they will be directed by the principles common to men, by our appetites, our paſſions, our affections, our reaſon, our conſcience; and that the trains of thinking in our minds are chiefly governed by theſe, according as one or another prevails at the time, every man will find in his experience. We ſhall here ſubjoin two or three reflections of a more practical nature, and of higher importance. It muſt be allowed that our happineſs or miſery in life, that our improvement in any art or ſcience we profeſs, and that our improvement in real virtue and goodneſs, depend in a very great degree on the train of thinking that occupies the mind both in our vacant and in our more ſerious hours. "As far, therefore, as the direction of our thoughts is in our power (and that it is ſo in a great meaſure cannot be doubted), it is of the utmoſt importance to give them that direction which is moſt ſubſervient to thoſe valuable purpoſes. The human imagination is an ample theatre, upon which every thing in human life, good or bad, great or mean, laudable or baſe, is acted. How happy is that mind in which the light of real knowledge diſpels the phantoms of ſuperſtition; in which the belief and reverence of a perfect all-governing mind caſts out all fear, but the fear of acting wrong; in which ſerenity and cheerfulneſs, innocence, humanity, and candour, guard the imagination againſt the entrance of every unhallowed intruder, and invite more amiable and worthier gueſts to dwell! There ſhall the Muſes, the Graces, and the Virtues, fix their abode; for every thing that is great and worthy in human conduct muſt have been conceived in the imagination before it was brought in to act. And many great and good deſigns have been formed there, which, for want of power and opportunity, have proved abortive. The man, whoſe mind is occupied by theſe gueſts, muſt be wiſe; he muſt be good; and he muſt be happy." Reid's Eſſays on the Intellectual Powers of Man, Eſſ. iv.

IMAGINATION, *Pleaſures of the*, are referred by Mr. Addiſon, in the ſixth volume of the "Spectator," to three ſources, *viz. beauty*, grandeur or *ſublimity*, and *novelty*; which ſee reſpectively. Theſe pleaſures, as the author deſcribes them, are ſuch as ariſe from viſible objects, either when we have them actually in view, or when we call up their ideas into our minds by paintings, ſtatues, deſcriptions, or any the like occaſion. Theſe pleaſures are not ſo groſs as thoſe of ſenſe, nor ſo refined as thoſe of the underſtanding. They are more conducive to health than thoſe of the underſtanding, which are wrought out by dint of thinking, and attended with too violent a labour of the brain. Delightful ſcenes, whether in nature, painting, or poetry, have a kindly influence on the body as well as the mind, and not only ſerve to clear and brighten the imagination, but are able to diſperſe grief and melancholy, and to ſet the animal ſpirits in pleaſing and agreeable motions. The Creator hath wonderfully diſplayed his benignity by endowing us with the powers of taſte and imagination for participating ſuch pleaſures; and the additional embelliſhment and glory, which, for promoting our entertainment, the Author of nature hath poured forth upon his works, is one ſtriking teſtimony, among many others, of benevolence and goodneſs. This thought, firſt ſuggeſted by Mr. Addiſon, Dr. Akenſide, in his "Poem on the Pleaſures of the Imagination," has happily purſued:

"————— Not content
With every food of life to nouriſh man,
By kind illuſions of the wandering ſenſe,
Thou mak'ſt all nature, Beauty to his eye,
Or Muſic to his ear.——"

IMAGINATION, *Influence of, on the corporeal Frame.* The influence of this faculty of the mind upon the conſtitution and operations of the body has been the ſubject of ſome diſcuſſion from very early times. But it is remarkable, that while philoſophers and phyſicians attributed to it a ſeries of phenomena, which a more accurate inveſtigation has ſhewn to ariſe from other cauſes; they at the ſame time overlooked, or rather aſcribed to different ſources, many other facts, which ſubſequent inquiry has proved to originate from the influence of the imagination. The principal operation of this faculty, acknowledged by the older phyſicians, was that of pregnant women upon the body of the child *in utero*: and this opinion, although it was long ago ſatisfactorily refuted by ſome philoſophical obſervers, (ſee Dr. Blondel's anſwer to the twelfth chapter of Dr. Turner's treatiſe on Diſeaſes of the Skin, and Lettres ſur le Pouvoir de l'Imagination des Femmes enceintes, Paris 1745,) has been maintained by many other writers of reputation, and is ſtill popularly current, if not received as an eſtabliſhed truth by the leſs enlightened part of the medical profeſſion. Nothing, however, we conceive, but the inveteracy of the prejudices of education, can account for the ſupport of a doctrine, which reaſon, experience, and anatomical ſcience concur to refute. On the other hand, the phenomena actually occaſioned by the operation of the imagination on the corporeal functions, are ſo numerous, and yet at times appear ſo extraordinary, that they merit a particular inveſtigation: for it is the conſequence only of inattention to the ſubject, and of the general appetite of mankind, eſpecially in ages of ignorance, for whatever is occult and myſterious, that the principle was not long ago eſtabliſhed, and the facts rendered familiar to all. Rational ſcience, built upon obſervation and experiment, has in a great meaſure baniſhed the notions of magic and witchcraft, even from the peaſantry; but it remained for the philoſophical minds of a Franklin, a Lavoiſier, &c. to propound the myſteries of Meſmer, and the other profeſſors of *animal magnetiſm*, at Paris, near the cloſe of the eighteenth century;—and for that of a Haygarth, to expoſe the rationale of *Perkiniſm* and the *metallic tractors*, in our own country, at the beginning of the nineteenth. (See Rapport des Commiſſaires chargés par le Roy de l'examen du Magnétiſme Animal, Paris 1784;—and a pamphlet, "On the Imagination as a Cauſe and as a Cure of Diſorders of the Body, exemplified by fictitious Tractors and epidemical Convulſions; by John Haygarth, M.D. &c." Bath, 1800.) In truth, the influence of the faculty of imagination over the functions of the body affords an explanation of numerous facts in the moral as well as phyſical hiſtory of man, which have been accounted for upon various occult principles; ſuch as diabolical or dæmoniacal poſſeſſion; the power of incantations and amulets; the miraculous influence of relics, images of ſaints, &c.; the operations aſcribed to ſome magnetic or electrical principle in nature; to the touch of kings, and of various gifted perſons; and many other circumſtances.

Before we purſue this intereſting inquiry, however, we ſhall diſmiſs the ſubject, ſo far as relates to the ſuppoſed operation of the imagination in pregnant women.

I. All the varieties of deformity and monſtroſity, as well as of cutaneous marks and blemiſhes of infants, were formerly aſcribed to the imagination of the mother dwelling upon ſome analogous object, or to her diſappointed longings for ſome particular article of food or drink. Hippocrates himſelf obſerves, that the deſire of a pregnant woman is capable of marking the tender infant with the thing deſired: and ſubſequently, the obſervations to this effect, and the number of hiſtories illuſtrative of it, have been ſo multiplied by authors of reputation, that the defenders of the doctrine ſtill appeal to experience, as deciſive in favour of the ancient and popular opinion; they conſider the matter as eſtabliſhed upon the evidence of indiſputable hiſtory. But to thoſe who are acquainted with the records of medicine, it is not neceſſary to ſtate, that they abound with ſo many extravagant and fabulous details, which have been collected and repeated with the utmoſt credulity, that to admit them as truths would require a renunciation of the beſt principles of modern ſcience. It is enough to peruſe the marvellous collections of Schenk and Marcellus Donatus, to be ſatisfied of this propoſition, as to the occurrences themſelves; but in reſpect to the cauſes of the phenomena, (which is a matter of difficult inveſtigation,) authority is of no weight, when placed in oppoſition to ſound anatomical and phyſiological principles.

The moſt common deformities, attributed to the influence of the mother's imagination, are ſpots, tubercles, &c. on the ſkin, moſt commonly of a red or purpliſh colour, which are ſuppoſed to reſemble different ſorts of fruit, ſuch as raſpberries, cherries, ſtrawberries, &c. or the ſtains of port-wine; and other ſpots covered with a downy hair, and compared to the ſkin of a mouſe, a mole, &c. Theſe appearances have been commonly aſcribed to the diſappointed longings of the female, during utero-geſtation, for the particular fruit, which is ſuppoſed to be impreſſed on the ſkin; or to ſome agitation of mind, occaſioned by theſe things being thrown at her, or certain animals jumping upon her. But many more extraordinary phenomena are on record. Among the caſes ſtated by Turner, we find an inſtance of an "infant's head pierced quite through by reaſon of an affright of the mother;" another of a child born with the leg broken or diſtorted, by the mother looking on a crucifix, and viewing the broken limbs of one of the malefactors by the ſide of Chriſt; of a child of ſir J. B. which was born wanting one hand, in conſequence of his lady being frightened, when pregnant, by the unexpected view of a beggar's ſtump arm upon her coach door; of another child, which, in conſequence of the mother being purſued by her huſband with a drawn ſword, threatening to cut her over the forehead, near the time of her delivery, was brought forth with a large wound on its forehead, from which a fatal hæmorrhagy took place; and of another infant, whoſe abdominal viſcera hung out all naked below the navel at birth, in conſequence of the mother having been compelled to witneſs the killing of a calf three months before parturition, at the opening of which ſhe felt an extraordinary motion in herſelf, when ſhe ſaw how the bowels came tumbling from the belly; not to mention inſtances of children born with the head of a cat, with a hairy ſkin and bear's claws, or of different colour from that of the parents, in conſequence of frights, or of the frequent contemplation of pictures of bears, or of negroes, &c. See Turner on Diſeaſes of the Skin, chap. xii.

Now, in all theſe inſtances, the impreſſions on the imagination are alleged to have occurred in the courſe, or even at an advanced period, of the pregnancy. Before this occurrence then, it is preſumed that the child *in utero* was of the natural and perfect form: that is, the infant, which is born with a large diſcolouration or protuberance on its ſkin, had, up to this period, a fair and ſmooth ſkin; that the child who is born with ſix toes, had, till then, only five; that the child, brought forth with one leg or one arm, had originally two; and the monſter produced with the head of a cat, had originally a natural human head, until the mother was frightened by the cat getting into her bed, when ſhe was "big with child" (Turner); and ſo on, with regard to every other preternatural appearance, whether it be an increaſe, decreaſe, or alteration of the parts of the body. It ſeems almoſt ſufficient barely to ſtate the matter in this light, in order to demonſtrate the abſurdity of the opinion. For ſurely it does not require a train of reaſoning or of experiment to prove, that neither man nor woman can, by the force of imagination, "add an inch to the ſtature," or take an inch from it, or transform any part of their bodies into the reſemblance of other animals, or of vegetables and fruit. It is not leſs clear, that no woman can, by an effort of imagination, form a child; and, if not a whole child, neither can ſhe add new parts to a child already completely formed, nor deſtroy any of the parts ſo formed, nor tranſmute any of thoſe parts into other forms of ſtructure. For example, let us take the inſtance of the lady, who, when advanced five or ſix months in her pregnancy, was ſo terrified by a beggar thruſting the ſtump of an amputated arm into her coach, that the child, of which ſhe was afterwards delivered, was born with the ſtump of an arm reſembling that of the beggar. Let us conſider what an operation muſt be performed to work this effect: a child at the term of five or ſix months is of conſiderable bulk, and the arm itſelf not ſmall. This arm, then, muſt drop off by the power of imagination: there muſt be no blood loſt to endanger the life of the child; and the wound muſt be healed before the birth. This might ſeem ſufficiently improbable: but, admitting that the limb could drop off by the force of fancy in the mother, it muſt ſtill remain in the uterus until the delivery; and the bones at leaſt could not putrify and waſte away, although the fleſh might. But it never was pretended that, in caſes of this nature, any part of the deficient limb was found by the midwife. And, what is a material point in the argument, the ſtumps of all ſuch imperfect limbs have a ſmooth and regular ſkin, which plainly indicates that they were from their firſt formation of the ſame figure: for had there been a wound, there would have been a ſcar; and ſcars are very diſtinguiſhable from ſound ſkin.

When we conſider the nature of the connection between the fœtus in utero and the mother, this view of the ſubject is ſtill farther confirmed. The infant is not one body with the mother, as ſome writers have aſſerted, any more than the plant is one ſubſtance with the earth, which nouriſhes it. (See Lettres ſur le Pouvoir de l'Imagination de Femmes enceintes, Paris, 1745.) There is no communication of nerves whatever between the mother and the child, nor is there any direct vaſcular communication: the infant has its own diſtinct circulation of blood, carried on by the action of its own heart and arteries, which laſt do not terminate in the veſſels of the mother, but in the veins of the child, which reconduct the blood to its heart: nor is there any direct communication of the veſſels of the mother with thoſe of the fœtus. (See Embryo.) This identity of the circulation and nervous ſyſtem of the fœtus. renders it altogether inconceivable that the ſenſations, fears, or deſires of the mother ſhould be in any way communicated to it; or that any impreſſion on the imagination of the mother ſhould produce any changes in its ſtructure, or appearance. As it never happens, by any ſeries of fancies or paſſions, that the figure of the objects of them is traced upon the ſkin of the mother; ſo it is equally impoſſible, and more improbable, that ſuch changes or appearances ſhould be impreſſed upon the infant, thus inſulated from any nervous influence of the parent.

Beſides, with reſpect to the *nævi*, moles, and other marks on the ſkin, it is obvious to thoſe who have paid any attention to them, that the reſemblance which they are ſaid to bear to various ſorts of fruit, &c. is purely fanciful; that they are generally of two or three kinds, conſiſting of a multiplicity, or network, of ſmall blood-veſſels, which conſtitute the common red and purpliſh marks; or of large brown moles, &c.; and that the fancied occurrence of greater redneſs in thoſe of the former claſs, which are compared to fruit, at the time when ſuch fruit is ripe, ariſes merely from the increaſed circulation and diſtention of the ſmall blood-veſſels in hot weather. When theſe and other deformities are connate, the mother, already poſſeſſed with the belief that ſome ſuch cauſe as could affect the mind muſt have exiſted, is not long at a loſs; her memory or her prejudice ſoon furniſhes her with ſome fact, which was never attended to perhaps when it happened, and the inſtance of her child is added to the long catalogue of thoſe which preceded. For the minute accordance of the fact is never required. Thus there is no defect more common than that of a hare-lip; and when this appears, the mother does not fail to recollect, that at ſome time in the courſe of the nine months ſhe had wiſhed for a hare, or had been frightened by a hare, or had by chance ſeen ſomebody with a hare-lip, no matter which, the occurrence is ſatisfactorily accounted for, and the *fact* is eſtabliſhed. Yet had not medical obſervers given this *name* to the diſeaſe, the actual reſemblance of a human countenance, thus deformed, to that of a hare, would not perhaps readily ſuggeſt itſelf.

But, the truth is, although we cannot explain the cauſes of theſe irregularities and monſtroſities of human births, any more than various other anomalies and *luſus naturæ* in the animal and vegetable world in general, yet we muſt refer them all to the ſame origin: for in regard to his corporeal frame, his generation, and mechanical ſtructure, man is ſubject to the ſame laws with the reſt of the living creation. The growth of the human fœtus ſeems not to differ from the developement of the germ, in the eggs of oviparous animals, or in the ſeeds of plants. All theſe are liable to every conceivable variety of conformation; to deformities, redundancies, defects, and anomalous diſpoſitions of parts, both internal and external: yet the influence of imagination is, in the latter caſes, out of the queſtion. But it would ſeem, that a nut with two kernels, a chicken with two heads, or a child with a double head, body, and limbs, (a monſtroſity not very rare,) are upon a very ſimilar footing: and, that it would be as philoſophical to attribute the monſtrous chicken to the imagination of the hen that hatched the egg, or the double nut to the fancies of the hazle-buſh, as to aſcribe the extraordinary infant to the fears or apprehenſions of the mother.

In all the above examples, the changes, ſuppoſed to be effected by the imagination on the child in the womb, are ſaid to take place after the developement of the germ or embryo has conſiderably advanced; and it is to ſuch operations only that our attempts at refutation apply. For as to the myſterious influence of the mind in the act of procreation, on which "the *callipædia*, or the art of begetting beautiful children" depends, although much has been ſaid on the ſubject in all ages, we confeſs ourſelves altogether unable to enter into the diſcuſſion. The original conception may doubtleſs be modified by circumſtances, which are incapable of producing ſubſequent changes in the embryo. If the placing of ſtreaked or pilled rods before the flocks at the time of their conjunction, as mentioned in holy writ, (Gen. chap. xxx.) was the occaſion of the generation of black and white lambs; the notions of ſome ancient and modern philoſophers and poets may be verified in reſpect to the human conception. Thus the tyrant Dionyſius, who was deformed and ill-favoured himſelf, in order that he might have a comely iſſue, is ſaid to have always had a beautiful picture ſet before his wife in the bed-chamber, that by the force of fancy ſhe might conceive the likeneſs of it. Galen attributed the ſame effect to the ſight of a picture. (Lib. de Theriac ad Piſon. c. 14.) And the poet Heſiod exhorts his friends not to ſet about the work of procreation after they return from funerals, leſt the ſorrowful idea be tranſmitted to the conception, and the tender fœtus marked with ſome frightful character.

> Μὴ δ' ἀπὸ δυσφήμοιο τάφου ἀπονοστήσαντα,
> Σπερμαίνειν γενεήν, ἀλλ' ἀθανάτων ἀπὸ δαιτός.
>
> Heſ. Lib. ii. de Op. et Dieb.

Dr. Darwin has many ſpeculations upon this ſubject; but he refers all the influence to the imagination of the male parent, and denies the influence of that of the female, not only during the period of pregnancy, but at the moment of conception; and he thinks the *callipædia* is an art which may be taught: "but," he properly obſerves, "the manner of accompliſhing this cannot be unfolded with ſufficient delicacy for the public eye." See Zoonomia, vol. i. ſect. xxxix. 6 and 7.

II. Although, however, we may be convinced of the error of aſcribing the actual changes of ſtructure, which conſtitute the deformities and monſtroſities of infants, to the imagination of the mother, operating upon the embryo after it is completely developed; yet we have the moſt ſatisfactory evidence of the powerful influence of this faculty over the nervous and vaſcular ſyſtem, and of effects reſulting from this influence, which might *à priori* be deemed equally extraordinary, as the metamorphoſes abovementioned. Who, for example, could ſuppoſe that, on the one hand, many painful, ſpaſmodic, and convulſive affections, both local and general, could be removed by impreſſions exciting only the imagination of the patient; or, that on the other hand, various anomalous ſenſations, actual ſyncope or ſwooning; and even the moſt violent epileptic and hyſterical convulſions, could be occaſioned by influencing the ſame faculty? We conceive, however, that no fact in phyſiology is more clearly demonſtrated. We ſhall firſt ſtate the evidence which experiment has eſtabliſhed, and then the inferences which may be deduced, and extended to many other analogous phenomena. The moſt ſtriking illuſtration is to be found in the hiſtory of

§ 1. *Animal Magnetiſm.*—In conſequence of the extent to which the practice of *animal magnetiſm,* as it was called by its inventor, M. Meſmer, was carried in Paris, the French king appointed a committee, conſiſting of four phyſicians, and five members of the Royal Academy of Sciences, to inveſtigate the matter, in the year 1784. Among the latter were M.M. Bailly, Lavoiſier, and Dr. Franklin, who was at that time the American miniſter at Paris. This agent, which Meſmer pretended to have diſcovered, he affirmed, was "a fluid univerſally diffuſed, and filling all ſpace, being the medium of a reciprocal influence between the celeſtial bodies, the earth, and living beings;—it inſinuated itſelf into the ſubſtance of the nerves, upon which therefore it had a direct operation;— it was capable of being communicated from one body to other bodies, both animated and inanimate, and that at a conſiderable diſtance, without the aſſiſtance of any intermediate ſubſtance;—and it exhibited in the human body ſome properties analogous to thoſe of the loadſtone, eſpecially its two poles. This *animal magnetiſm,*" he added, "was capable of curing directly all the diſorders of the nervous ſyſtem, and indirectly other maladies; it rendered perfect the operation of medicines; and excited and directed the ſalutary *criſes* of diſeaſes, ſo that it placed theſe *criſes* in the power of the phyſician. Moreover, it enabled him to aſcertain the ſtate of health of each individual, and to form a correct judgment as to the origin, nature, and progreſs of the moſt complicated diſeaſes, &c." In ſhort, he ſaid, "La Nature offre dans le magnétiſme un moyen univerſel de guerir et de preſerver les hommes." (See Memoire ſur la Decouverte du Magnetiſme Animal, par M. Meſmer, Doct. en Med. de la Faculté de Vienne, 1779.—Alſo his Precis Hiſtorique des Faits relatifs aux Mag. An. juſques en Avril, 1781.) Monſ. Deſlon, a pupil of Meſmer, alſo practiſed animal magnetiſm at Paris, and undertook to demonſtrate its exiſtence and properties to the commiſſioners. He commenced his inſtructions by reading a memoir, in which he maintained, that "there is but one nature, one diſeaſe, and one remedy; and that remedy is animal magnetiſm."

The firſt ſtep of the commiſſioners was to examine the mode and inſtruments of operation, and the effects of the agent. It was obſerved that M. Deſlon operated upon many individuals at the ſame time. In the middle of a large room was placed a circular cheſt of oak, raiſed about a foot from the floor, which was called the *baquet:* the lid of this cheſt was pierced with a number of holes, through which there iſſued moveable and curved branches of iron. The patients were ranged in ſeveral circles round the cheſt, each at an iron branch, which, by means of its curvature, could be applied directly to the diſeaſed part. A cord, which was paſſed round their bodies, connected them with one another; and ſometimes a ſecond chain of communication was formed by means of the hands, the thumb of each one's left hand being received and preſſed between the fore-finger and thumb of the right hand of his neighbour. Moreover, a *piano-forte* was placed in a corner of the room, on which different airs were played; ſound being, according to the principles of Meſmer, a conductor of magnetiſm. The patients, thus ranged in great numbers round the *baquet,* received the magnetic influence at once by all theſe means of communication; by the branches of iron which tranſmitted to them the magnetiſm of the baquet; by the cord entwined round the body; by the union of thumbs, which conveyed to each the magnetiſm of his neighbour; and by the ſound of the muſic, or of an agreeable voice, which diffuſed the principle through the air. The patients were, beſides, directly magnetiſed, by means of the finger of the magnetiſer, and a rod of iron, which he moved about before the face, above or behind the head, and over the diſeaſed parts, always obſerving the diſtinction of the magnetic poles, and fixing his countenance upon the individual. But above all, they were magnetiſed by the application of the hands, and by preſſure with the fingers upon the hypochondria, and the abdominal regions, which was often continued for a long time, occaſionally for ſeveral hours together.

The patients, ſubjected to this treatment, at length began to preſent very various appearances in their condition, as the operation proceeded. Some of them were calm and tranquil, and felt nothing; others were affected with coughing and ſpitting; others again experienced ſlight pains, partial or univerſal heats, and conſiderable perſpirations; and others were agitated and tortured with convulſions. Theſe convulſions were extraordinary in their number, ſeverity, and duration. The commiſſioners ſaw them, in ſome inſtances, continue for three hours, when they were accompanied with expectoration of a viſcid phlegm, which was ejected by violent efforts, and ſometimes ſtreaked with blood; one young man often brought up blood copiouſly. The convulſions were characterized by violent involuntary motions of the limbs, and of the whole body, by ſpaſms of the throat, by agitations of the epigaſtrium and hypochondres, and wandering motions of the eyes, accompanied by piercing ſhrieks, weeping, immoderate laughter, and hiccup. They were generally preceded or followed by a ſtate of languor and rambling, or a degree of drowſineſs and even of coma. The leaſt unexpected noiſe made the patients ſtart; and it was remarked, that even a change of meaſure in the air, played upon the piano-forte, affected them, ſo that a more lively movement increaſed their agitation, and renewed the violence of their convulſions. Nothing can be more ſurpriſing, or more inconceivable by thoſe who have not witneſſed it, than the ſpectacle of theſe convulſions, ſay the commiſſioners: all ſeem to be under the power of the magnetiſer; a ſign from him, his voice, his look, immediately rouſes them from a ſtate even of apparent ſopor. In truth, they add, it was impoſſible not to recogniſe, in theſe conſtant effects, a great power or agency, which held the patients under its dominion, and of which the magnetiſer appeared to be the ſole depoſitary. See Rapport des Commiſſaires chargés par le Roi, de l'Examen du Magnétiſme Animal; à Paris, 1784.

Such, then, were the phenomena (of the reality of which they could not doubt) produced by the operation of this new agent, the nature and origin of which it was the duty of the commiſſioners to inveſtigate.' This convulſive and lethargic ſtate, it may be noticed, was conſidered as a *criſis*, ſuch as the conſtitution or the art of medicine is enabled to effect, for the purpoſe of curing diſeaſes; and for the ſake of brevity, we ſhall adopt the term, to expreſs this occurrence, regardleſs of the hypotheſis which led to its uſe.

On witneſſing the ſame experiments, frequently repeated, the commiſſioners remarked, that among the patients who fell into the *criſis*, there were always many women, and very few men; that the *criſes* were not effected in leſs than the ſpace of an hour or two; and that as ſoon as one perſon was thus taken, the reſt were ſimilarly ſeized in a very ſhort time. But they were unable to obtain any ſatisfactory reſults from experiments made upon ſo many perſons at once. They reſolved, therefore, to endeavour, by experiments upon individuals, in a more private way, to aſcertain the direct effects of the newly diſcovered agent on the animal economy, in a ſtate of health; which, if the agent exiſted, could of courſe be rendered manifeſt by its effects: and they determined to become themſelves the ſubjects of the firſt experiments. No inquiry was ever conducted in a more philoſophical manner, or terminated in a more complete and unequivocal developement of the nature of the ſubject. Great and extraordinary as the powers of this new agent ſeemed to be, the phenomena were proved to be referrible ſolely to the *imagination* of the parties magnetiſed.

The commiſſioners ſubmitted to be magnetiſed together, excluding all ſtrangers, by M. Deſlon, once a week, for the ſpace of two hours and a half: they were ranged round the *baquet*, encircled by the cord of communication, with an iron branch from the *baquet* reſting upon the left hypochondre of each, and forming from time to time the communication of thumbs: they were magnetiſed by the fingers or the metallic rod being moved about and preſented to different parts of the body, as well as by the preſſure of hands on the pit of the ſtomach and ſides of the belly. The moſt irritable and delicate of the commiſſioners were magnetiſed the moſt frequently, and for the longeſt time. But none of them experienced any effects or ſenſations; or at leaſt any that could be aſcribed to magnetiſm. Three of them were valetudinarians, and ſome of their uſual uneaſy feelings were excited partly by the fatigue, and partly by the ſtrong preſſure made on the ſtomach. They ſubmitted to the experiment on three days ſucceſſively: ſtill without any effect. The quiet and ſilence of the eight commiſſioners, thus magnetiſed, without any uneaſineſs or any new ſenſation, formed the moſt perfect contraſt with the noiſe, agitation, and diſorder of the public magnetiſm: here was the magnet without any influence, and the operator deſpoiled of his power. They were warranted, therefore, in concluding, "that magnetiſm has no agency in a ſtate of health, or even in a ſtate of ſlight indiſpoſition.'

They reſolved, then, to make their next trials of its influence upon perſons actually diſeaſed; and ſeven perſons, of the lower claſs, were magnetiſed by M. Deſlon, in the preſence of the commiſſioners, at Dr. Franklin's houſe. Two women, the one aſthmatic, the other with a ſwelling on the thigh, and two children, the one ſix and the other nine years of age, felt nothing, and remained unaffected. One man, with diſeaſed eyes, felt a pain in the ball of one of them, which alſo diſcharged tears, when the finger of the magnetiſer was brought near it, and moved quickly about for a conſiderable time: but when the other eye, which was moſt diſeaſed, was magnetiſed, he felt nothing. A nervous, hyſterical woman, to whom the preſſure of the abdomen was painful, and who had a *hernia*, ſaid ſhe felt a pain in the head when the finger was pointed near the rupture, and that ſhe loſt her breath when it was brought oppoſite the face. When the finger of the magnetiſer was repeatedly moved up and down, ſhe experienced ſome catchings of the muſcles of the head and ſhoulders, like one ſurpriſed and afraid. The ſeventh patient, a man, ſuffered ſome effects of the ſame ſort, but much leſs marked.

Four perſons, two ladies and two gentlemen, of good education, and in bad health, were afterwards magnetiſed. Three of theſe underwent the operation ſeveral times, and felt nothing: but the fourth, a nervous lady, being magnetiſed during an hour and twenty minutes, generally by the application of the hands, was ſeveral times on the point of falling aſleep, and felt ſome degree of agitation and uneaſineſs. On a ſubſequent occaſion, a large company, aſſembled at Dr. Franklin's, (who was confined by illneſs,) were all magnetiſed, including ſome patients of M. Deſlon, who had accompanied him thither: there were preſent ſeveral Americans, one of whom, an officer, had an intermittent fever; yet no perſon experienced any effects, except M. Deſlon's patients, who felt the ſame ſenſations to which they had been accuſtomed at his public magnetiſing.

Theſe experiments, then, furniſhed ſome important facts. Of fourteen invalids, five experienced ſome effects from the operation, but nine felt none whatever. All the effects obſerved in the nervous lady, however, might be occaſioned by the irkſomeneſs of the ſame poſture for ſo long a time, and by her attention being ſtrongly fixed upon her feelings: for it is frequently ſufficient to think of theſe nervous attacks, or to hear them mentioned, in order to reproduce them when they are habitual. The three other inſtances occurred among perſons of the *lower claſs*: and this circumſtance was remarked with ſurpriſe by the commiſſioners; that the only effects, which could be aſcribed to magnetiſm, manifeſted themſelves in the poor and ignorant; while thoſe who were better able to obſerve and to deſcribe their ſenſations, felt nothing. At the ſame time, it was obſerved, that *children*, although endowed with the peculiar ſenſibility of their age, likewiſe experienced no effect. The notion, that theſe effects might be explained by natural cauſes, therefore, ſuggeſted itſelf to the commiſſioners. "If we figure to ourſelves," they obſerve, "a poor ignorant perſon, ſuffering from diſeaſe, and anxious to be relieved, brought before a large company, partly conſiſting of phyſicians, with ſome degree of preparation and ceremony, and ſubjected to a novel and myſterious treatment, the wonderful effects of which he is already perſuaded that he is about to experience; and if, moreover, it is recollected, that he is paid for his compliance, and ſuppoſes that the experimenters will be gratified in being told that he perceived certain operations; we ſhall have natural cauſes by which theſe effects may be explained, or at leaſt very legitimate reaſons for doubting that the real cauſe is magnetiſm." Rapport des Commiſſ p. 30.

Since the ſuppoſed effects of the *animal magnetiſm*, then, were not diſcoverable in thoſe who were incredulous; there was great reaſon to ſuſpect, that the impreſſions which were produced, were the reſult of a previous expectation of the mind, a mere effect of the *imagination*. The commiſſioners, therefore, now directed their experiments to a new point; namely, to determine how far the imagination could influence the ſenſations, and whether it could be the ſource of all the phenomena attributed to magnetiſm.

The commiſſioners had recourſe now to a M. Jumelin, who magnetiſed in the ſame way with M. M. Meſmer and Deſlon, except that he made no diſtinction of the magnetic *poles*. Eight men and two women were operated on by M. Jumelin; but none of them experienced any effect. At length a female ſervant of Dr. Le Roy, who was magnetiſed in the forehead, but without being touched, ſaid ſhe perceived a ſenſe of heat there. When M. Jumelin moved his hand about, and preſented the extremities of his five fingers to her face, ſhe ſaid that ſhe felt as it were a flame moving about: when magnetiſed at the ſtomach, ſhe declared that the heat was there; at the back, and the ſame heat was there: ſhe then affirmed that ſhe was hot all over the body, and ſuffered a head-ache. Seeing that only one perſon, out of eleven, had been ſenſible of the magnetiſm, the commiſſioners thought that this perſon was probably poſſeſſed of the moſt mobile imagination. They therefore tied a bandage over her eyes, and ſhe was magnetiſed again: but the effects no longer accorded with the parts to which the magnetiſm was directed! When it was applied ſucceſſively to the ſtomach and to the back, the woman only perceived the heat in her head, and a pain in her eyes, and in the left ear! The bandage was removed, and M. Jumelin applied his hands to the hypochondres; ſhe immediately perceived a ſenſe of heat in thoſe parts; and, at the end of a few minutes, ſaid that ſhe was faint, and actually ſwooned. When ſhe was ſufficiently recovered, her eyes were again bandaged; M. Jumelin was then removed to a diſtance, ſilence was commanded, and they made the woman believe that ſhe was again magnetiſed. The effects were now preciſely the ſame, although no one operated, either near her or at a diſtance: ſhe felt the ſame heat, particularly in the back and loins, and the ſame pain in the eyes and ears! At the end of a quarter of an hour, a ſign was made to M. Jumelin to magnetiſe her at the ſtomach; he did ſo, but ſhe felt nothing; he magnetiſed her back, but without effect; in fact the heat of the back and loins gradually ceaſed, and the pains in the head remained!

Here, then, was demonſtrative evidence of the operation of the imagination. When the woman ſaw what was done, the ſenſations were placed in the parts magnetiſed; but when ſhe could no longer ſee, they were referred to the moſt diſtant parts, where no magnetiſm was directed; and, above all, they were equally felt, when ſhe was not magnetiſed at all, and not felt when ſhe was magnetiſed, after a little repoſe, but unknown to herſelf. The fainting of a nervous woman, when made the ſubject of a myſterious experiment, and continued in a poſture of reſtraint for a conſiderable time, is explicable upon natural cauſes. This experiment alſo ſhewed, that the diſtinction of poles was purely chimerical. It was repeated the following day upon a man and a woman, with the ſame reſults. Senſations, felt when they were not magnetiſed, could only be the effect of imagination: and it was found only neceſſary to excite and direct the imagination, by queſtions, to the parts where the ſenſations were to be felt, inſtead of directing the magnetiſm upon thoſe parts, in order to produce all the effects. A child of five years old was then magnetiſed; but it felt nothing, except the heat which it had previouſly contracted in playing.

Theſe experiments were repeated by the commiſſioners in various ways, upon many different perſons, of all claſſes, and with the ſame reſults, differing only according to the difference of ſuſceptibility of the imagination of the individuals. They found effects conſtantly experienced, when no magnetiſm was uſed, and *vice verſâ*, (when the eyes were covered,) according to the direction of the patient's attention by queſtions put to him with addreſs. Now this practice could not lead to any error; ſince it only deceived their imagination. For, in truth, when they were not magnetiſed, their only anſwer ought to have been, that they felt nothing.

Some facts, communicated to the commiſſioners by M. Sigault, an eminent phyſician at Paris, place the power of the imagination in a ſtrong light. "Having announced," he ſays, "in a great houſe, that I was an adept in the art of Meſmer, I produced conſiderable effects upon a lady who was there. The voice and ſerious air which I affected, made an impreſſion upon her, which ſhe at firſt attempted to conceal; but having carried my hand to the region of the heart, I found it palpitating. Her ſtate of oppreſſion indicated alſo a tightneſs in the cheſt, and ſeveral other ſymptoms ſpeedily enſued: the muſcles of the face were affected with convulſive twitches, and the eyes rolled; ſhe fell down in a fainting fit, vomited her dinner, and had afterwards ſeveral motions from the bowels, and felt herſelf in a ſtate of incredible weakneſs and languor. A celebrated artiſt, who gives leſſons in drawing to the children of one of our princes, complained during ſeveral days of a ſevere head-ache, which he mentioned to me when we met accidentally on the Pont-Royal. Having perſuaded him that I was initiated in the myſteries of Meſmer, almoſt immediately, by means of a few geſtures, I removed his pain, to his great aſtoniſhment." Dr. Sigault juſtly remarks, that it is probably by ſuch an impreſſion on the mind, that the ſight of the dentiſt removes the tooth-ache, when the patient has gone to him for the purpoſe of having his tooth drawn. He adds, that being one day in the parlour at a convent, a young lady ſaid to him, "you go to M. Meſmer's, I hear." 'Yes,' he replied, 'and I can magnetiſe you through the grate;' preſenting his finger towards her at the ſame time. She was alarmed, grew faint, and begged him to deſiſt; and, in fact, her emotion was ſo great, that had he perſiſted, he had no doubt that ſhe would have been ſeized with a fit. Rapport, *note* p. 39—41.

But although the commiſſioners were convinced, by their experiments, that the *imagination* was capable of producing different ſenſations, of occaſioning pain, and a ſenſe of heat, and even actual heat, in all parts of the body; and therefore that it contributed much to the effects, which were aſcribed to *animal magnetiſm*: yet the effects of the latter had been much more conſiderable, and the derangements of the animal economy, which it excited, much more ſevere. It was now, therefore, to be aſcertained, whether by influencing the imagination, convulſions, or the complete *criſis* witneſſed at the public treatment, could be produced. In proof of this point, their experiments were not leſs concluſive, as the following relation of one or two of them will evince. As M. Deſlon acknowledged that the complete ſucceſs of the experiments would depend upon the ſubjects of them being endowed with ſufficient ſenſibility, he was requeſted to ſelect ſome of his patients, who had already proved their ſuſceptibility of the magnetic influence, upon whom the trials might be made.

According to the principles of the magnetiſers, when a tree had been touched by them, and charged with magnetiſm, every perſon who ſtopped near the tree would feel the effects of this agent, and either fall into a ſwoon or into convulſions. Accordingly in Dr. Franklin's garden at Paſſy, an apricot tree was ſelected, which ſtood ſufficiently diſtant from the others, and was well adapted for retaining the magnetiſm communicated to it. M. Deſlon, having brought thither a young patient of twelve years of age, was ſhewn the tree, which he magnetiſed, while the patient remained in the houſe, under the obſervation of another perſon. It was wiſhed that M. Deſlon ſhould be abſent during the experiment; but he affirmed that it might fail, if he did not direct his looks and his cane towards the tree. The young man was then brought out, with a bandage over his eyes, and ſucceſſively led to four trees, which were *not magnetiſed,* and was directed to embrace each during two minutes ; M. Deſlon at the ſame time ſtanding at a conſiderable diſtance, and pointing his cane to the tree actually magnetiſed. At the firſt tree, the young patient, on being queſtioned, declared that he ſweated profuſely ; he coughed and expectorated, and ſaid that he felt a pain in the head : he was ſtill about twenty-ſeven feet from the magnetiſed tree. At the ſecond tree he found himſelf giddy, with the head-ache as before : he was now thirty feet from the magnetiſed tree. At the third, the giddineſs and head-ache were much increaſed ; he ſaid he believed he was approaching the magnetiſed tree ; but he was ſtill twenty-eight feet from it. At length, when brought to the fourth tree, *not magnetiſed,* and at the diſtance of twenty-four feet from that which was, the *criſis* came on ; the young man fell down in a ſtate of inſenſibility, his limbs became rigid, he was carried to a graſs-plot, where M. Deſlon went to his aſſiſtance, and recovered him.

This experiment, then, was altogether adverſe to the principle of magnetiſm, not negatively, but poſitively and directly. If the patient, ſaid the commiſſioners, had experienced no effect under the tree actually magnetiſed, it might have been ſuppoſed that he was not in a ſtate of ſufficient ſuſceptibility ; but he fell into the *criſis* under one which was not magnetiſed ; therefore not from any external phyſical cauſe, but ſolely from the influence of the *imagination.* He knew that he was to be carried to the magnetiſed tree ; his imagination was rouſed, and ſucceſſively exalted, until, at the fourth tree, it had riſen to the pitch neceſſary to bring on the *criſis.*

Many other experiments furniſhed the ſame reſults. M. Deſlon was requeſted to ſelect, from among his poor patients, thoſe who had ſhewn the greateſt ſenſibility to the magnetiſm ; and he accordingly brought two women to Paſſy. While he was magnetiſing Dr. Franklin and ſeveral perſons in another apartment, the two women were put into ſeparate rooms. Three of the commiſſioners remained with one of the women, the firſt to queſtion her, the ſecond to write, and the third to repreſent M. Deſlon, who (they perſuaded her, after having bandaged her eyes) was brought into the room to magnetiſe her. One of them pretended to ſpeak to M. Deſlon, requeſting him to begin : but *nothing was done ;* the commiſſioners remained quiet, only obſerving the woman. In the ſpace of three minutes, ſhe began to feel a nervous ſhivering (friſſon nerveux) ; then ſhe felt in ſucceſſion a pain in the head and in the arms, and a pricking in the hands, ſhe became ſtiff, ſtruck her hands together, got up from her ſeat, and ſtamped with her feet : in a word, the criſis was completely characterized. Two of the commiſſioners were in an adjoining room with the other woman, whom they placed by the door, which was ſhut, with her ſight at liberty, and made her believe that M. Deſlon was on the other ſide of the door, magnetiſing her. She had ſcarcely been ſeated a minute before the door when a ſhivering began ; in one minute more ſhe had a clattering of the teeth, but yet a general warmth over the body ; and, by the end of three minutes, the *criſis* was complete. The breathing became hurried ; ſhe ſtretched out her arms behind her back, writhing them ſtrongly, and bending the body forwards ; a general tremor of the whole body came on ; the clattering of the teeth was ſo loud as to be heard out of the room ; and ſhe bit her hand ſo as to leave the marks of her teeth in it.

Now, the commiſſioners obſerve, theſe two women were never touched, not even their pulſe felt. A more clear and demonſtrative proof of the power and agency of the imagination could not have been afforded them. It may be added, however, that one of theſe women, being ſent to M. Lavoiſier's, actually fell into the *criſis* in the antichamber, before ſhe had ſeen either M. Deſlon, or any of the commiſſioners ; but ſhe knew that ſhe was to meet them there. While ſhe was alone in the antichamber, a ſhort time afterwards, different perſons went to her who had no connection with magnetiſm, and the convulſive motions began again. They remarked to her that no one magnetiſed her ; but ſo much was her imagination excited, that ſhe replied, "If you did nothing to me I ſhould not be in this condition." She knew in fact that ſhe came there for the purpoſe of being the ſubject of experiment, and the approach of any one, or the leaſt noiſe, attracted her attention, recalled the idea of magnetiſm, and produced a freſh acceſſion of convulſions.

It is unneceſſary to carry this detail of facts any farther. No experimental inquiry could have been more ably proſecuted, and no philoſophical truth more clearly developed, than that the mere operation of the imagination is ſufficient to produce all thoſe great and extraordinary changes in the animal economy, which were aſcribed to an hypothetical agent in nature, which was termed magnetiſm. If, indeed, it ſhould be ſtill maintained, that the effects, produced in theſe iſolated experiments, fell ſhort of the phenomena which occurred at the *public* magnetiſings, there is another principle of the human conſtitution, which will fully account for this difference in the degree, independently of other phyſical circumſtances neceſſarily exiſting in the latter mode of treatment ; we mean the principle of *imitation,* as it has been termed, of which we ſhall ſay more under its proper head. (See Imitation.) Independently of the warmth and contamination of the air, in a crowded room, which particularly affects the head and the nervous ſyſtem, and of the influence of muſic in increaſing all emotions, and in addition to the multiplied impreſſions upon the ſight and hearing, as well as thoſe of touch and preſſure, not employed in the private trials, this principle of *imitation,* which heightens all emotions, and augments all tendencies to action, would be ſufficient to explain the difference. It was remarked that when one perſon fell into the *criſis,* the reſt were ſpeedily overcome. In like manner, we ſee a ſort of contagion in all the emotions and impreſſions excited in a crowded aſſembly. Hence the powerful impreſſions made by public ſpectacles, and the enthuſiaſm excited in theatres by generous ſentiments ; hence the general ardour which ſpreads at once through an army in the hour of battle ; or, on the contrary, the univerſal panic which is propagated with inconceivable rapidity, often from the ſlighteſt cauſes, or from cauſes merely imaginary ; and hence alſo the ungovernable fury of mobs. But to trace the principle to a cloſer analogy, all nervous and convulſive diſeaſes are liable to propagate themſelves among thoſe who witneſs them, and thus to become, as it were, epidemic ; whence hyſterical and epileptical convulſions have prevailed at times in large ſchools, manufactories, and even in religious aſſemblies, in a moſt diſtreſſing manner, and were prevented only by a complete ſeparation of the individuals, or by exciting ſtrong counter-impreſſions on the mind, ſuch as the dread of puniſhment, &c. (See Imitation.) The greater effects, therefore, produced at the public operations of the magnetiſers, are explicable upon the known principles of the human conſtitution, and ſerve to confirm, rather than to invalidate, the inferences of the preceding inveſtigation.

§ 2. *Metallic Tractors.*—Complete as the detection of the deluſion of Meſmer, and the other advocates of *animal magnetiſm,* by the commiſſioners of Paris, was, and numerous as the facts were, which evinced the efficacy of touching, or even pointing at the body with the fingers, or a rod of iron, &c. in removing as well as in exciting pains and diſtreſſing ſenſations, it could hardly have been expected that another deluſion, founded upon the ſame grounds, could again be diſſeminated, after the ſhort interval of ſixteen or ſeventeen years, ſo as to find advocates among philoſophical men, and to enrich the author of the contrivance. Such, however, was the fact. We now ſtate it, rather as a matter of record than of information, that, in the year 1798, an American, of the name of *Perkins*, introduced into this country a method of curing diſeaſes, for which he obtained the royal letters patent, by means of two ſmall pieces of metal, denominated *Tractors*. Theſe were applied externally near the part diſeaſed, and moved about, gently touching the ſurface only; and thus multitudes of painful diſorders were removed, ſome moſt ſpeedily, and ſome after repeated applications of the metallic points. Pamphlets were publiſhed, announcing the wonderful cures accompliſhed by this ſimple remedy; and periodical journals and newſpapers teemed with evidence of the curative powers of the *tractors*; inſomuch, that in the courſe of a few months, they were the ſubject of general converſation, and ſcarcely leſs general uſe. The religious ſect of the Quakers, whoſe benevolence has been ſometimes diſplayed at the expence of their ſagacity, became the avowed and active friends of the *tractors*; and a public eſtabliſhment, called the "Perkinean Inſtitution," was formed under their auſpices, for the purpoſe of curing the diſeaſes of the poor, without the expence of drugs or medical advice. The tranſactions of this inſtitution were publiſhed in pamphlets, in ſupport of the extraordinary efficacy of theſe new inſtruments. In ſomewhat leſs than ſix years Perkins left the country, in poſſeſſion, as we have been informed on good authority, of upwards of ten thouſand pounds, the contributions of Britiſh credulity; and now (1811) the tractors are almoſt forgotten.

We by no means intend to impeach the veracity of thoſe who atteſted the many extraordinary cures performed by the application of the *tractors*; on the contrary, we have no doubt that many of them were actually accompliſhed, at leaſt temporarily: after what we have already ſtated, when treating of *animal magnetiſm*, (ſuch as the ſudden cure of the artiſts's head-ache, on the bridge, by M. Sigault's geſtures,) and what we ſhall proceed to ſtate reſpecting the effects of *counterfeit* tractors, it were impoſſible not to admit the truth and correctneſs of the majority of the accounts of the efficacy of *Perkiniſm*. We muſt obſerve, however, that the efficacy was founded on the deluſion: and had not the ſcientific world been at that time in a ſtate of comparative ignorance reſpecting the principle of which Galvani had recently obtained a glance; had they been in total ignorance of that principle, or poſſeſſed of more than that "little knowledge" of it, which "is a dangerous thing," ſuch an impoſture would ſcarcely have gained ground for a day, among thoſe who were acquainted with the proceedings of the French commiſſioners in the affair of Meſmer. But Perkins aſſociated the idea of the Galvanic principle, or animal electricity, with the operation of his tractors, by conſtructing them of two different metals, which the Italian philoſopher had ſhewn to be neceſſary to excite the operation of the agent which he had diſcovered: and the obſcurity which hung over this ſubject, (for the great developement of the Galvanic principle by the pile of Volta, and the trough which followed, had not then taken place,) left a new field for hypotheſis, and the anomalous character of the facts contributed to induce even philoſophers to liſten to the relation.

But Dr. Haygarth, a philoſopher, to whom his profeſſion and his country are deeply indebted for more important ſervices (ſee CONTAGION, FEVER-*ward*, and HOUSE *of Recovery*), ſuſpected the true ſource of the phenomena, produced by the tractors, from the firſt promulgation of the ſubject. Recollecting the developement of the animal magnetiſm, he ſuggeſted to Dr. Falconer, about the end of the year 1798, when the tractors had already obtained a high reputation at Bath, even among perſons of rank and underſtanding, that the nature of the operation of the tractors might be correctly aſcertained by a pair of *falſe tractors*, reſembling the real ones; and it was reſolved to put the matter to the teſt of experiment in the general hoſpital of that city. They therefore contrived two *wooden tractors*, of nearly the ſame ſhape as the metallic, and painted to reſemble them in colour. Five caſes were choſen of chronic rheumatiſm, in the ankle, knee, wriſt, and hip: one of the patients had alſo gouty pains. All the affected joints, except the laſt, were ſwelled, and all of them had been ill for ſeveral months.

"On the 7th of January, 1799, the *wooden* tractors were employed. All the five patients, except one, aſſured us that their pain was relieved, and three much benefited by the firſt application of this remedy. One felt his knee warmer, and he could walk much better, as he ſhewed us with great ſatisfaction. One was eaſier for nine hours, and till he went to bed, when the pain returned. One had a tingling ſenſation for two hours. The wooden tractors were drawn over the ſkin ſo as to touch it in the *ſlighteſt* manner. Such is the wonderful force of the imagination!

"Next day, January 8th, the true metallic tractors of Perkins were employed exactly in like manner, and with ſimilar effects. All the patients were in ſome meaſure, but not more relieved by the ſecond application, except one, who received no benefit from the former operation, and who was not a proper ſubject for the experiment, having no exiſting pain, but only ſtiffneſs in her ankle. They felt (as they fancied) warmth, but in no greater degree than on the former day." Of the Imagination as a Cauſe and as a Cure of the Diſorders of the Body, exemplified by fictitious Tractors and epidemical Convulſions. By John Haygarth, M. D. F.R.S. &c. Bath, 1800.

Such were the firſt experiments attempted with the view of aſcertaining the nature of *Perkiniſm*! But Dr. Haygarth's pamphlet contained an account of ſtill more deciſive trials made in the Briſtol infirmary, by Mr. Smith, one of the ſurgeons to that eſtabliſhment. This gentleman firſt operated, with two *leaden* tractors, on Tueſday, April 19th, on a patient who had been ſome time in the Infirmary, "with a rheumatic affection of the ſhoulder, which rendered his arm perfectly uſeleſs." In the courſe of ſix minutes no other effect followed the application of theſe pieces of *lead* than a warmth upon the ſkin: nevertheleſs the patient informed Mr. Smith, on the following day, that "he had received ſo much benefit, that it had enabled him to lift his hand from his knee, which he had in vain ſeveral times attempted on the Monday evening, as the whole ward witneſſed." But although it was thus proved that the patent tractors poſſeſſed no ſpecific powers independent of ſimple metals, he thought it adviſable to lay aſide metallic points, leſt the proofs might be deemed leſs complete. "Two pieces of wood, properly ſhaped and painted, were next made uſe of; and in order to add ſolemnity to the farce, Mr. Barton held in his hand a ſtop-watch, whilſt Mr. Lax minuted the effects produced. In four minutes the man raiſed his hand ſeveral inches, and he had loſt alſo the pain in his ſhoulder, uſually experienced when attempting to lift any thing. He continued to undergo the operation daily, and with progreſſive good effect; for on the 25th he could touch the mantle-piece.

“ On the 27th,” Mr. Smith continues, “ in the preſence of Dr. Lovell and Mr. J. P. Noble, two common iron nails, diſguiſed with ſealing-wax, were ſubſtituted for the pieces of mahogany before uſed. In three minutes the ſame patient ‘ felt ſomething moving from his arm to his hand,’ and ſoon after he touched the Board of Rules, which hung a foot above the fire-place. This patient at length ſo far recovered, that he could carry coals, &c. and uſe his arm ſufficiently to aſſiſt the nurſe: yet previous to the uſe of the ſpurious tractors, ‘ he could no more lift his hand from his knee than if a hundred weight were upon it, or a nail driven through it,’ as he declared in the preſence of ſeveral gentlemen, whoſe names I ſhall have frequent occaſion to mention. The fame of this caſe brought applications in abundance; indeed it muſt be confeſſed, that it was more than ſufficient to act upon weak minds, and induce a belief that theſe pieces of wood and iron were endowed with ſome peculiar virtues.” See Dr. Haygarth's Pamphlet, p. 8.

Many other equally ſtriking inſtances of the curative operation of the imagination, when excited by the *ſham* tractors, might be quoted from the pamphlet in queſtion; but we ſhall confine our account to a caſe, which fell under our own obſervation. Immediately after the publication of Dr. Haygarth's expoſition, the writer of this article, then a ſtudent at Edinburgh, was deſirous of being convinced, by perſonal experience, of the truth of his ſuggeſtion. Having procured two pieces of ſtick, painted both of a leaden colour, himſelf and a friend operated upon three or four individuals in various painful complaints. A ſervant girl, afflicted with a moſt acute head-ache, which ſhe declared had rendered her nights altogether reſtleſs for nearly a fortnight, readily ſubmitted to theſe potent *electrical* inſtruments, as we called them. We moved them about near the forehead, *never touching her;* and in four minutes ſhe ſaid ſhe felt a ſenſation of a tranſient chillineſs in the head; in a minute or two more ſhe felt as if cold water was running down the temples, and the pain was ſomewhat diminiſhed; but in the ſpace of ten minutes ſhe declared that the head-ache was entirely gone. On the following day ſhe came to thank us for the good ſleep which ſhe had enjoyed through the night, and then continued free from head-ache: but we underſtood that in a few days ſhe ſuffered a ſlight return of it. In the other caſes ſome relief was afforded, but not ſo marked as in this; they were, indeed, of an inflammatory nature, and leſs likely to be ſpeedily cured.

After having peruſed this abundant evidence of the powers of the imagination, not only in producing various affections of the body, but in removing others which exiſt, we can have no difficulty in crediting many relations of cures performed by perſons ſuppoſed to be gifted with extraordinary powers, or employing other pretended agents, all of which may be referred to the ſame common principle. One of the moſt ſingular inſtances of this kind, both from the number of cures performed, and the rank, learning, and character of the perſons who atteſted them, is to be found in the perſon of Valentine Greatraks, who flouriſhed in the latter part of the 17th century.

§ 13. *The Cures of Valentine Greatraks, and others.*—The proceedings of this pious and apparently ſincere man are very intereſting, as affording a hiſtory of the power of imagination and confidence over certain diſorders of the body. He was the ſon of an Iriſh gentleman of good education and property, who died in his childhood. Diſguſted with the religious and political contentions of his country in the time of Cromwell, he retired from the world apparently in a ſtate of melancholy derangement and bad health, which had been nearly terminated fatally. On recovering he became one of the puritans of the day, and after having acted ſome time as a magiſtrate, he had “ an impulſe or ſtrange perſuaſion” in his mind, which continued to preſent itſelf, whether he was in public or in private, ſleeping or waking, “ that God had given him the bleſſing of curing the king's evil.” Accordingly he commenced the practice of touching for this diſeaſe about the year 1662, which he continued for three years; at this time the ague became very epidemical, and the ſame impulſe within him ſuggeſted, “ that there was beſtowed upon him the gift of curing the ague,” which he alſo practiſed with ſucceſs, by laying his hands on the patients. At length he found his power extended to epilepſy and paralytic diſorders, &c.; but he candidly acknowledges that many were not cured by his touch. Nevertheleſs the unbounded confidence in his powers, and conſequently the facility with which the imagination of the ignorant would be acted upon, muſt be manifeſt from the following ſtatement, which he ſent to Mr. Boyle. “ Great multitudes from divers places reſorted to me, ſo that I could have no time to follow my own occaſions, nor enjoy the company of my family and friends: whereupon I ſet three days in the week apart (from ſix in the morning till ſix at night), to lay my hands on all that came, and ſo continued for ſome months at home. But the multitudes which came daily were ſo great, that the neighbouring towns were not able to accommodate them: whereon, for the good of others, I left my home, and went to Youghall, where great multitudes reſorted to me, not only of the inhabitants, but alſo out of England; ſo that the magiſtrates of the town told me, that they were afraid that ſome of the ſick people that came out of England might bring the infection into the place: whereon I retired again to my houſe at Affane, where (as at Youghall) I obſerved three days, by laying my hands on all that came, whatſoever the diſeaſes were (and many were cured, and many were not); ſo that my ſtable, barn, and malt-houſe were filled with ſick people of all diſeaſes almoſt, &c.” See “ A Brief Account of Mr. Valentine Greatraks, and divers of the ſtrange Cures by him lately performed. Written by himſelf in a Letter addreſſed to the Hon. Robert Boyle, eſq.” London, 1723, p. 32. This pamphlet was publiſhed originally in 1666.

We ſhall not extend this article by quoting the hiſtories of caſes certified by ſeveral phyſicians, as well as by divines and philoſophers; among whom were the names of Robert Boyle, Dr. Cudworth, Dr. Whichcot, &c. We may remark, that ſome of the caſes of head-ache and rheumatiſm, reſemble moſt accurately thoſe which were cured by the ſpurious tractors above-mentioned; and that the hand of Greatraks can only be conceived to have operated in the ſame way. The influence of the imagination was likewiſe obvious in ſeveral convulſive affections, in the ſame manner as in the women at Paſſy, who fell into the *criſis* before the magnetiſm was applied. Greatraks mentions ſeveral poor people that went from England to him, “ and amongſt the reſt, two that had the falling-ſickneſs, who *no ſooner ſaw me,* than they *fell into their fits* immediately;” and he reſtored them, he affirms, by putting his hands upon them. (Loc. cit. p. 34.) Nay, he tells us, that even the touch of his *glove* had driven many kinds of pains away (p. 30), and removed ſtrange fits in women (p. 32.); and that the ſtroking of his hand or his glove had, in his opinion, and that of other perſons preſent, driven ſeveral devils, or evil ſpirits, out of a woman, one after the other, “ every one having been like to choke her (when it came up to her throat), before it went forth.” Now, this whole deſcription contains a pretty accurate picture of an ordinary hyſterical fit, with its attendant *globus*, terminating with the diſcharge of flatus. P. 31.

About the ſame period, a Capuchin friar, whoſe name was Franciſco Bagnone, was famous in Italy for the ſame gift of healing, by the touch of the hands only; and was attended wherever he went by great multitudes of ſick people, upon whom he operated numerous and ſurpriſing cures, which were deemed true miracles. So general was the belief in his curative powers, that even a prince of Parma, who had laboured under a febrile diſeaſe for the ſpace of ſix months, was induced to apply to him, and was immediately cured by his voice only. The prince himſelf, and many others that were preſent, afterwards bore public teſtimony to the fact. It appears, however, as might be anticipated, and as Greatraks honeſtly acknowledges with reſpect to his own attempts, that great numbers of perſons, who applied to the friar with full faith in his powers, were not benefited. A celebrated Venetian phyſician, Tacchenius, affirms that it was notorious, that many (etiam plurimos) of the ſick left his preſence as feeble and wretched as when they were admitted: "et ita abiiſſe, ut admiſſi erant, miſeros atque imbecilles, et vidi ipſe et vulgo conſtat." It is curious to obſerve, how the ſame diſcuſſions and the ſame arguments are repeated in different ages, when the ſame ſubject is agitated. Tacchenius ſays, that many perſons, eſpecially of the higher claſſes, aſcribed the whole of the affair to the imagination: but to this it was replied, that children, wrapped in their ſwaddling clothes, were cured through the faith of their parents. Nevertheleſs, he ſays, he ſaw ſome children brought to the monk ſeveral times, who were carried home as ſickly as they went. Yet he confeſſes himſelf unable to make up his opinion reſpecting ſo occult a matter, which is maintained and diſputed by ſo many people. It will be recollected, that the friends of Perkins maintained, in anſwer to Dr. Haygarth's obſervations, that ſheep and horſes had been cured by the metallic tractors, and therefore the influence of imagination was out of the queſtion.

Pechlin, a celebrated Daniſh phyſician, to whom the above ſtated facts were communicated, and who referred them excluſively to the imagination, mentions another perſon, of the name of Marcus Avianus, a man of auſtere manners, and bearing a high reputation for ſanctity, who obtained a great fame, with a certain claſs of credulous people, for the cure of diſeaſes in this way. It is certain, however, he adds, that all his efforts were not equally ſucceſsful; and many, who were apparently cured, ſpeedily relapſed. See Jo. Nic. Pechlini Obſerv. Phyſico-Medic. lib. iii. Obſ. xxxii.

But it is unneceſſary to enumerate the individuals, the De Mainaudues, the Preſcotts, &c. who have at different times been diſtinguiſhed by the poſſeſſion of various occult methods of healing the ſick. The practice has occaſionally prevailed in almoſt all ages; and we have ſeen, in the detail of experiments above related, that the faculty of the imagination, in certain habits and conditions of the body, and eſpecially in the irritable female conſtitution, is actually capable of producing all thoſe effects on the corporeal frame, which have been deemed the reſult of occult agency and extraordinary powers.

§ 4. *Effects of Magic, Incantations, Amulets, Holy Relics, &c.*—Admitting this, then, as an eſtabliſhed principle of the human conſtitution, and making due allowances for the exaggerations and miſrepreſentations of ignorance and ſuperſtition, we are enabled to give a rational explanation of many hiſtorical relations, which have been conſidered as altogether fabulous, or as direct violations of truth. We are well aware of the facility with which the imagination is excited in an uninformed perſon, and more particularly in an age of profound ignorance, which is, for that reaſon, commonly an age of ſuperſtition. We know, too, that in the middle ages, when every form of ſcience was almoſt unknown, and the laws of nature had not been inveſtigated, the ſmalleſt diſcovery in natural philoſophy, chemiſtry, or aſtronomy, was deemed the reſult of ſupernatural communication with the world of ſpirits; and the diſcoverer or poſſeſſor of the knowledge was looked upon as a being gifted with ſupernatural powers. In ſuch a ſtate of the human mind, when natural philoſophy, meagre as it was, was diſguiſed with the name, and clothed with all the ſuppoſed agencies of *magic*; and when every perſon, with a little more knowledge than his neighbours, was maſter of ſo many *magnets*, ſo many *tractors*, by which he could rule the imaginations of the multitude; it cannot be the ſubject of our wonder, that the magician's rod (or the philoſopher's cane) ſhould produce ſuch mighty operations, or that a ſcrap of his writing ſhould be a remedy for many maladies. Theſe only executed what was afterwards performed by M. Deſlon's extended fingers, and Valentine Greatraks' glove! The effects, then, of the *incantations*, *amulets*, and all the arts of magic, witchcraft, and aſtrology, by which the more artful pretenders to ſuperior knowledge impoſed upon the people, may be allowed to have actually occurred, and to have been the reſult of natural cauſes; and they are plainly referrible to one common ſource, with thoſe of animal magnetiſm, Perkiniſm, and various other modifications of the imagination in fetters.

It is ſcarcely neceſſary to add, that, during the ſame periods of ignorance and ſuperſtition, thoſe extremely pious and comparatively learned perſons, who have been enrolled in the catalogue of ſaints, muſt neceſſarily have obtained the moſt complete veneration and confidence from the multitude; and hence, after their death, every relic of their bodies or clothing, the ſhrines in which they were entombed, fragments of the inſtruments of their execution (in the caſes of martyrdom), and every other object that could excite, by aſſociation, thoſe reverential feelings, uſually called up by a contemplation of their character, would become ſo many agents upon the imagination, by which all the extraordinary changes in the animal economy above deſcribed might be effectually produced. Thus we cannot doubt that there is much foundation for the hiſtories of recovery from various diſeaſes, occaſioned by removing the ſick to the tombs of celebrated worthies, or placing them before the ſtatues and images of theſe perſons, or by touching them with nails taken from the coffins, or rings from the fingers, or the bones of the fingers themſelves of theſe ſaints, or by the influence of an infinity of relics of this ſort, which cannot be ſuppoſed to poſſeſs leſs power over a ſuperſtitious mind, than the painted *tractors* of a ſurgeon, or the glove of an enthuſiaſt.

§ 5. *Influence of the Imagination in Aid of Medicine.*—Since it is obvious, then, that the imagination is capable of producing very important changes in the nervous and vaſcular ſyſtems, independently of the operation of medicine; the phyſician will infer, that this faculty may be employed as a powerful adjuvant in his hands, and that, by a combination of the moſt active remedies of both body and mind, he may extend the uſefulneſs of his art to the utmoſt bounds. A very able phyſician, Dr. Lind of Haſlar, long ago deduced this inference from an intereſting occurrence at Breda, related by Vander Mye. "An important leſſon in phyſic," he ſays, "is here to be learned, namely, the wonderful and powerful influence of the paſſions of the mind upon the ſtate and diſorders of the body. This is too often overlooked in the cure of diſeaſes; many of which are ſometimes attempted by the ſole mechanical operation of drugs, without calling into aſſiſtance the ſtrong powers of imagination, or the concurring influences of the ſoul. Hence it is, that the ſame remedy will not produce the like effect, even in the ſame perſon, when given by different hands." (See Lind's Treatiſe on Scurvy.) The hiſtory given by Vander Mye is ſtrongly illuſtrative of the ſubject before us.

During the ſiege of Breda, in 1625, the garriſon was afflicted with the ſcurvy in a moſt dreadful degree. "When the prince of Orange heard of their diſtreſs," ſays this phyſician, "and underſtood that the city was in danger of being delivered up to the enemy by the ſoldiers; he wrote letters addreſſed to the men, promiſing them the moſt ſpeedy relief. Theſe were accompanied with medicines againſt the ſcurvy, ſaid to be of great price, but of ſtill greater efficacy: many more were yet to be ſent them. The effects of this deceit were truly aſtoniſhing! Three ſmall phials of medicine were given to each phyſician, not enough for the recovery of two patients. It was publicly given out, that three or four drops were ſufficient to impart a healing virtue to a gallon of liquor. We now diſplayed our wonder-working balſams; nor were even the commanders let into the ſecret of the cheat put upon the ſoldiers. They flocked in crowds about us, every one ſoliciting that part may be reſerved for their uſe. Cheerfulneſs again appears on every countenance, and an univerſal faith prevails in the ſovereign virtues of the remedies. The herbs now beginning to ſpring up above the ground, of theſe we make decoctions, to which wormwood and camphor were added, that by the prevalent flavour of theſe, they might appear medicines of no mean efficacy. The ſtiff contracted limbs were anointed with wax, melted in rapeſeed or linſeed oil. The invention of new and untried phyſic is boaſted; and amidſt a defect of every neceſſary and uſeful medicine, a ſtrange medley of drugs was compounded. The effect, however, of the deluſion was really aſtoniſhing; for many were quickly and perfectly recovered. Such as had not moved their limbs for a month before, were ſeen walking the ſtreets ſound, ſtraight, and whole. They boaſted of their cure by the prince's remedy: the motion of their joints being reſtored by a ſimple friction with oil, and the belly now of itſelf well performing its office, or at leaſt with a ſmall aſſiſtance from medicine. Many who declared they had been rendered worſe by all former remedies, recovered in a few days to their inexpreſſible joy, and the no leſs general ſurpriſe by taking (almoſt by having brought to them) what we affirmed to them to be their gracious prince's cure." Lind's loc. cit. and Fred. Vander Mye, de morbis et ſymptomatibus popularibus Bredanis, tempore obſidionis.

Another rule of medical practice is to be deduced, Dr. Haygarth obſerves, from the facts which were aſcertained from the experiments with the fictitious tractors. "A patient ought always to be inſpired in the beſt manner poſſible, with confidence in any remedy which is adminiſtered: but if a favourable opinion of it cannot be obtained, and eſpecially if there be a marked prejudice againſt it, another (though a leſs powerful) medicine ought to be preferred." Haygarth, loc. cit. p. 28.

The preceding ſtatements illuſtrate alſo the great advantages of medical reputation, in conſequence of the faith of the ſick in the medicines preſcribed by thoſe who are poſſeſſed of it. This explains what has been frequently obſerved, that the ſame remedy will produce more beneficial effects, when preſcribed by a famous phyſician, or an aſſuming empiric, than when taken from the hands of a perſon of leſs character and notoriety. Magnificent and unqualified promiſes, in the latter caſe, inſpire weak minds with implicit confidence. "Omne ignotum pro magnifico." Upon this principle we may account for the marvellous recoveries frequently aſcribed to *empirical* remedies, which are often inert drugs, and generally applied by the ignorant patient in diſorders totally different from what the quack himſelf pretends that he can cure. Hence alſo it may be obſerved, that *new* medicines, even when their compoſition is known, if recommended to the public with exalted praiſe, have ſometimes been attended with great ſucceſs, much greater than future experience confirmed. From the ſame views it is apparent, why reputation, however abſurdly obtained, will contribute to enable certain perſons to cure ſome diſeaſes. Thus kings, old women, and *ſeventh* ſons, who have had medical diplomas aſſigned to them by common conſent for many ages, have probably ſometimes worked cures. Nevertheleſs we have ſeen, that there were other attractions to the preſence of kings, beſides the *royal touch*, when that was in vogue; and the *angel* was perhaps the beſt ingredient in the remedy. See Evil, *King's*.

After all that has been ſaid, ſome perſons may nevertheleſs be ſceptical as to the power of the imagination over the corporeal organs, illuſtrated in this article, and think it impoſſible that ſuch great phyſical changes can be produced by a mere mental affection. How, they will aſk, can any operation of mind at once modify the actions of veſſels, nerves, and muſcles, over which the will has no controul? Nothing is more myſterious or inſcrutable than the operations of the mind upon the body; ſo that the proximate cauſe of the motion of the muſcles of any organ, by a thought, a volition of the mind, is altogether incomprehenſible. The only anſwer, therefore, that can be given to this queſtion, conſiſts in ſhewing that analogous effects of the operation of the mind in regard to organs not ſubject to the will are frequent in the animal economy.

We have a familiar example of the inſtantaneous change in the action of blood-veſſels, occaſioned by an affection of the mind in the act of *bluſhing*, in which the cutaneous veſſels of the face are immediately diſtended with blood, from the feeling of ſhame: and a ſtill greater diſtention of veſſels occurs in ſome other organs of the body, as the immediate conſequence of certain paſſions. On the contrary, other mental emotions, ſuch as fear and terror, as ſpeedily diminiſh the action of the blood-veſſels; whence the ſudden *paleneſs* which overſpreads the perſon under ſuch emotions; nay, when theſe are violent, the whole ſyſtem of circulation, heart and arteries together, is often inſtantaneouſly ſuſpended in its motions; if this ſuſpenſion be merely temporary, as is uſual, *ſyncope* or *fainting* only occurs; if it be permanent, which has ſometimes happened, death enſues. In delicate and irritable habits, and therefore eſpecially in the female ſex, very ſlight affections of the mind will produce *convulſions*, and all the other effects which were exhibited in the *criſes* of animal magnetiſm. *Hyſterical* paroxyſms are thus frequently produced by the mimic pathos of a theatrical ſcene; by the ſlighteſt emotions of alarm and apprehenſion, and even by joy; and they often enſue after a continued attention to ſome intereſting object. Even the convulſions of *epilepſy* have been excited by the mere ſight of a perſon afflicted by them. (See Imitation.) In fact, the mind has an extenſive influence over ſpaſmodic and convulſive diſeaſes, which depend chiefly upon the unuſual mobility of the nervous ſyſtem, from the ſlight convulſion of *hiccup* to the moſt violent hyſterical fit: and as the motions of the heart and arteries are cloſely connected with the ſtate of the brain and nerves, through the ſame medium the force, rapidity,

dity, and regularity of the circulation may be variouſly affected. It would ſeem, indeed, that by a continued direction of the *attention* to particular parts of the body, combined with a belief in the efficacy of a ſuppoſed remedy applied to them, the action of particular portions of the circulating ſyſtem may be conſiderably modified. For not only has this effect ariſen from the external employment of the *tractors;* but even the internal organs, *e. g.* the ſtomach and bowels, have been acted upon by medicines of ſuppoſed efficacy which had been ſwallowed. There are inſtances on record of *bread pills* operating as purgatives, when adminiſtered with the aſſurance that they would produce that effect: and it is well known, that not only the ſight of a perſon in the act of vomiting, but even the thought or recollection of it, has produced the inverted action of the fibres of the ſtomach, and vomiting itſelf. Turner mentions a young gentleman who was a patient of his, and who having taken ſeveral draſtic emetics, became ſo diſguſted, that he could vomit by the force of imagination as effectually as from the moſt active medicine. The ſight of a bolus produced this effect immediately, again and again, whenever it was produced. "Nay, ſo great and admirable," ſays Turner, "is the idioſyncraſy of this gentleman, that if at meals or in company, though never ſo well before, other perſons talked but of a bolus, or himſelf caſually thought upon the ſame, it was odds if he was not forced to riſe from table and fall a vomiting." Turner on Diſeaſes of the Skin, chap. xii. See alſo Pechlin. Obſ. Med. Phyſ. the third book of which relates chiefly to the influence of the mind on the body; and Whytt on Nervous Diſorders, chap. v. ſect. 6.

On the whole, then, there is ample evidence of the influence of the mind over the actions of the nervous and muſcular parts of the body, which are not under the ſubjection of the will; and therefore we have the concurring proofs, both from analogy and direct experiment, in favour of referring all the phenomena comprehended in this article, to one and the ſame principle. See alſo IMITATION.

IMAGINATION, in *Muſic*, was too much fettered during the ſeventeenth century by canon, fugue, and eccleſiaſtical modes, to attempt the uſe of her wings. In the peruſal of the muſic of the times, we collected fragments of the infant liſp in the vocal language, which has been ſince ſo highly poliſhed; but neither found in the ſubjects of fugue, or vocal diviſions, any thing like invention or grace, till after the time of Cariſſimi and Stradella, who ſeem to have been the firſt gifted muſicians in Italy.

In England, crowded and elaborate as is the harmony, and uncouth and antiquated the melody in the collection of the beſt compoſitions of the time, in queen Elizabeth's virginal book, there is a manifeſt ſuperiority in thoſe of Bird over all the reſt, both in texture and deſign. In a later age his genius would have expanded in works of invention, taſte, and elegance; but, at the period in which he flouriſhed, nothing ſeems to have been thought neceſſary for keyed-inſtruments, except variations to old tunes, in which all the harmony was crowded, which the fingers could graſp, and all the rapid diviſions of the times, which they could execute. Even nominal fancies were without fancy, and confined to the repetition of a few dry and unmeaning notes in fugue, or imitation. Invention was ſo young and feeble, as to be unable to go alone; and old chants of the church, or tunes of the ſtreet, were its leading-ſtrings and guides.

IMAGINIFER, among the Romans, an enſign-bearer, who carried the ſtandard on which was repreſented the image of the reigning emperor. See SIGNA.

IMAGLIN, in *Geography*, a ſmall iſland in the Straits, between the weſtern coaſt of America, and the eaſt point of Ruſſia. N. lat. 65 40′. E. long. 189 44′.

IMAGO, in *Natural Hiſtory*, is a name given by Linnæus to the third ſtate of inſects, when they appear in their proper ſhape and colours, and under no more transformation.

IMALGAN, in *Geography*, a ſmall iſland in the ſea of Mindoro. N. lat. 10° 51′. E. long. 121° 5′.

IMAM, or IMAN, a miniſter in the Mahometan church, anſwering to a pariſh prieſt among us.

The word properly ſignifies what we call a prelate, *antiſtes*, one who preſides over others; but the Muſſulmen frequently apply it to a perſon who has the care and intendency of a moſque, who is always there at firſt, and reads prayers to the people, which they repeat after him.

IMAM is alſo applied, by way of excellence, to the four chiefs or founders of the four principal ſects in the Mahometan religion.

Thus Ali is the imam of the Perſian, or of the ſect of the Schiites; Abu-beker the imam of the Sunnites, which is the ſect followed by the Turks; Saphii, or Safi-y, the imam of another ſect, &c.

The Mahometans do not agree among themſelves about this *imamate*, or dignity of the imam. Some think it of divine right, and attached to a ſingle family, as the pontificate of Aaron. Others hold, that it is, indeed, of divine right, but deny it to be ſo attached to any ſingle family, as that it may not be transferred to another. They add, that the imam is to be clear of all groſs ſins; and that otherwiſe he may be depoſed, and his dignity may be conferred on another. However this be, it is certain, that after an imam has once been owned as ſuch by the Muſſulmen, he who denies that his authority comes immediately from God, is accounted impious; he who does not obey him, is a rebel; and he who pretends to contradict what he ſays, is eſteemed a fool, among the orthodox of that religion. The imams have no outward mark of diſtinction; their habit is the ſame with that of the Turks in common, except that the turban is a little larger, and folded ſomewhat differently.

IMAM *of Sana*. See SANA and YEMEN.

IMAMIA, a name given to that ſect of the Mahometans, to which the Perſians adhere. See IMAM.

IMAMZADE, in *Geography*, a town of Perſia, in the province of Farſiſtan; 20 miles S. of Darabgherd.

IMAMZADE-*Kaſim*, a town of Perſia, in the province of Irak; 30 miles S.W. of Ghulpaigan.

IMANDRA, a conſiderable lake of Ruſſian Lapland.

IMAUS, in *Ancient Geography*, part of a long chain of mountains, which traverſed Independent and Ruſſian Tartary, with the extent and direction of which the ancients were very imperfectly acquainted. According to them, this chain divided Scythia into two parts, *viz.* Scythia intra Imaum, and Scythia extra Imaum. Ptolemy not only deſcribes an Imaus as running N. and S., which is the Belur-Tag of the Ruſſians and Tartars, with its ridges to the W., now called Argun, Ak-tau, &c.; but another Imaus paſſing E. and W. to the N. of Hindooſtan. As the Northern Imaus of Ptolemy is clearly the Belur-Tag, ſo his Southern Imaus may be ſafely regarded, ſays Pinkerton, as the Himmaleh of the Hindoos; which we may allow to have been known to the ancients, who were no ſtrangers to the rich Gangetic regions of Hindooſtan. Nor was it abſurd to conſider the Himmaleh as a S.E. prolongation of the Northern Imaus. See HIMMALEH.

IMBA, in *Geography*, a town of Japan, in the iſland of Niphon; 70 miles E. of Jedo.

IMBANKING. See Banking.

IMBARGO, or Embargo, a ſtop or ſtay put upon ſhips, or merchandize, uſually by public authority. See Embargo.

IMBATTLED. See Embattled.

IMBECILITY, a ſtate of languor and decay; wherein the body is not able to perform its uſual exerciſes or functions.

IMBER, in *Ornithology*. See Colymbus *Immer*.

IMBEZLE, or Imbezzle, is probably from the old Engliſh word to waſte, pilfer, or purloin.

As where a perſon intruſted with goods, waſtes, conſumes, and diminiſhes them, he is ſaid to imbezzle them. Perſons that imbezzle, or illegally diſpoſe of any woollen, linen, fuſtian, cotton, or iron materials; or gloves, leather, ſhoes, &c. with which they are entruſted for manufacture, ſhall forfeit double the value, or be ſent to the houſe of correction, and there whipped, and kept to hard labour fourteen days: and for the ſecond offence, forfeit four times the value, &c. Buyers and receivers are liable to the ſame penalties, 13 Geo. II. c. 8.

If any ſervant imbezzles, purloins, or makes away his maſter's goods, to forty ſhillings value, it is made felony without benefit of clergy, 12 Ann. c. 7. Imbezzling the king's armour, or ſtores, is felony by 31 Eliz. c. 4.; other inferior imbezzlements and miſdemeanours of the ſame kind are puniſhed with fine, corporal puniſhment, and impriſonment, by 9 & 10 Will. III. c. 41. 1 Geo. I. c. 25. 9 Geo. I. c. 8. and 17 Geo. II. c. 50. The uſual method of proceeding againſt high officers who imbezzle the public money is by impeachment in parliament. At common law the offender is ſubject to a diſcretionary fine and impriſonment. Imbezzling, or vacating records, is a felonious offence againſt public juſtice, 8 Hen. VI. c. 12.

IMBIBE, is commonly uſed in the ſame ſenſe as *abſorb*, *viz.* where a dry porous body takes up another that is moiſt.

IMBLOCATION, in *Middle Age Writers*, a particular method of diſpoſing of the dead bodies of excommunicated perſons, by raiſing over them a heap of ſtones, or earth. This was done in the fields, or near highways; it being unlawful to bury them in holy ground, or even to inter them at all. See Burial.

The word is derived from *bloc*, tumulus.

IMBRA Christos, in *Geography*, a town of Abyſſinia; 145 miles S.E. of Gondar.

IMBRICARIA, in *Botany*, was ſo named by Dr. Smith in his paper on the "Botanical Characters of ſome Plants of the Natural Order of *Myrti*." Linn. Soc. Tranſ. v. 3. 257. This is the *Jungia* of Gærtner, but Linnæus in his Supplementum Plantarum having already dedicated a plant, of a very different genus, to the memory of Jungius, it became neceſſary to give this of Gærtner another denomination. Profeſſor Gmelin called it *Mollia*; but as that was of uncertain derivation it was purpoſely changed. "In preference, therefore, to *Mollia* (ſays Dr. Smith), this genus is called *Imbricaria* in alluſion to its imbricated foliage. A farther reaſon for my choice of this name is to aboliſh the *Imbricaria* of Gmelin, taken up by him from Juſſieu, which I know from original ſpecimens to be the identical *Mimuſops Kauki* of Linnæus, of which Juſſieu, after Commerſon's Manuſcripts, made a diſtinct genus on account of its fruit having eight cells, and as many ſeeds; but Commerſon obſerved that four or more of theſe were often abortive; and on the other hand Rumphius tells us the *Mimuſops* has often as many as three or four perfect ſeeds. It is probable, therefore, that the germen has eight cells and eight ſeeds, moſt of which are generally abortive; a ſtriking inſtance of the neceſſity of ſtudying that part in all its ſtates."

Gen. Ch. *Cal.* Perianth ſuperior, in five ſegments. *Cor.* of five petals. *Stam.* Filaments five. *Piſt.* Germen of two cells, one of which is frequently abortive; ſtyle ſolitary; ſtigma globoſe. *Peric.* Capſule inferior, crowned with the rounded teeth of the calyx, coriaceous, ſmooth, ovate, ſomewhat compreſſed. *Recept.* none. *Seeds* from four to eight, ſmall, ovate, brown.

Eſſ. Ch. Petals five. Stigma capitate. Capſule covered by the calyx, of two cells and many ſeeds.

1. I. *crenulata.* Linn. Soc. Tranſ. v. 3. 259. (Jungia imbricata; Gærtn.) "Leaves obovate-wedge ſhaped, crenulated towards the top. Petals and calyx toothed." A native of Port Jackſon, New South Wales.—*Stem* about a foot high, tough and wiry, thickly imbricated with ſmooth, ſhining, carinated *leaves*. *Flowers* lateral. Whole plant ſmooth.

2. I. *ciliata.* Linn. Soc. Tranſ. v. 3. 259. "Leaves triangularly-linear. Calyx fringed. Germen five-ſided." A native alſo of New South Wales.—*Stem* branched, thickly imbricated with minute, ſhining *leaves*, among which the *flowers* ſeem imbedded.

Theſe are the only ſpecies known; but it has been ſuggeſted that the *Jungia tenella* of Gærtner might be added to this genus. This laſt mentioned author ſuſpected the *Eſcallonia* of Linn. Suppl. to be the ſame as his *Jungia*, but theſe genera differ eſſentially in the latter having a capſule inſtead of a berry, not to mention other particulars.

IMBRICATED is uſed, by ſome botaniſts, to expreſs the figure of the leaves of ſome plants, which are hollowed like an *imbrex*, or gutter-tile, or are laid in cloſe ſeries over one another like the tiles of a houſe.

Imbricated *Cup*, *imbricatus calyx*, a term uſed by authors to expreſs the cups of ſome of the plants which have compound flowers; in which the common perianthium, ſurrounding the whole cluſter of flowers, is compoſed of ſeveral ſeries of ſquamæ, the exterior of which is ſhort, and the interior longer, but in great part hid under theſe upper ones.

Imbricated *Shell*, *imbricata concha*, in *Natural Hiſtory*, a term uſed in general to expreſs any ſpecies of ſhell-fiſh, whoſe ſhells are elevated into tranſverſe ridges, lying over one another at the baſe, in the manner of the tiles on a houſe-top. It has alſo been uſed as the name of a peculiar ſpecies of ſhell: this is a *cordiformis*, or heart-ſhell, whoſe ſides are remarkably ridged in this tranſverſe manner, and at the ſame time ſo divided longitudinally by ſeven high ribs running from the apex to the edge, that the whole repreſents the roof of a houſe with the beams and rafters, before they are covered by the tiling. Hence the French call it *faitiere*.

IMBRO, in *Geography*, an iſland in the Grecian Archipelago, mountainous and woody, with plenty of game; about 20 miles in circumference and containing five villages, two of which are defended by caſtles. N. lat. 40 10. E. long. 25 46'.

IMELBORN, a town of Germany, in the county of Henneberg; 34 miles S.E. of Salzungen.

IMER, la Signora, in *Biography*, a female opera ſinger in London 1746, at the ſame time as Monticelli. Though ſhe was nominally the firſt woman, ſhe never ſurpaſſed mediocrity in voice, taſte, or action.

IMGNAEL, in *Geography*, a town of Norway, in the dioceſe of Drontheim; 56 miles N.N.E. of Runſdal.

IMHOFF, John William, in *Biography*, an eminent genealogiſt, was a German of a noble family, who devoted himſelf to the ſtudy of hiſtory, politics, and particularly the deſcents and alliances of all the great houſes in Europe. His principal works are "De Notitia Procerum Germaniæ:" "Hiſtoria Genealogica Italiæ et Hiſpaniæ:" "Familiarum Italiæ, Hiſpaniæ, Portugalliæ, Magnæ Britanniæ, cum Appendice:" "Recherches ſur les Grands d'Eſpagne." He died in 1728.

IMIDSU, in *Geography*, a town of Japan, in the iſland of Niphon; 130 miles N.W. of Jedo.

IMIRETTA, Imeritia, or Immeretia, a country of Aſia, in European Turkey, which lies between the Caſpian and Black ſeas, bounded on the E. and S E. by Georgia, on the N. by Oſſetia, or that part of Circaſſia, called the government of Caucaſus, on the W. by Mingrelia, and on the S. by Turkiſh Armenia. It pertains to the ancient Iberia, and is about 80 miles from N. to S., and nearly as much from E. to W. The country is mountainous and poor; and the inhabitants are wanderers and vagabonds. Although it could formerly ſupply an army of 20,000 men, it is now thinly peopled, on account of the number of children purchaſed by the Turks, and an impoſition laid upon them of furniſhing annually 80 young men, between 10 and 20 years of age. The governing prince aſſumes the title of king of kings. The towns are few; but the principal ſeems to be Cotatis.

IMITATION, in the *Arts of Deſign*, has, as in other things, two acceptations; one of a confined, the other of a more vague ſenſe. In the firſt it ſignifies merely copying cloſely the forms or colours of a work of art or nature; in the ſecond, it is ſufficient that the ſtyle of the thing imitated be maintained; and it is in this latter ſenſe moſt frequently applied. Thus Raphael may be ſaid to have imitated in his latter works the ſtyle of Michael-Angelo in deſign; and Julio Romano his maſter Raphael. Thus the whole Venetian ſchool endeavoured to imitate Titian and Paul Veroneſe; and the Flemiſh Rubens, Rembrandt, and Teniers.

Imitation, thus conſidered, is the true ſource of advancement in art. Were it not for the attempt to follow in the paths of great men, the arts would be always in their infancy; be always ſtationary in their progreſs, if we may uſe the expreſſion; and therefore whilſt we deprecate a long continuance of dull copying the effects and defects of the greateſt maſters, we would recommend to all youths engaged in the polite arts, at all times to keep in their mind's-eye at leaſt, the works of thoſe who have ſucceſsfully paſſed the ordeal of time: and moſt probably if they have original genius within them, its fire will be moſt uſefully elicited by rivalry thus laudably excited. And not to youths alone will this conduct be found uſeful; right happy ought he to feel himſelf, who, adopting this plan, ſhall become able to unite the various beauties he may thus ſelect.

Too much ſtreſs has been laid upon what is termed originality, to which title it would appear excentricity has the ſureſt claim. But that is not the foundation upon which the great artiſts of Italy, Spain, and Flanders, proceeded in their labours. Step by ſtep they advanced upon the merits of their predeceſſors; till at laſt their own excellencies ſeem to leave little room for further advance in true taſte: yet that mode of ſtudy which has produced ſo much, bids moſt fair to produce whatever may beſt be effected in art: *viz.* a careful imitation in the firſt inſtance of what has been done, till the mind is informed of the moſt important principles of art: and then a judicious examination, how far theſe works correſpond with nature; and wherein they are capable of receiving new beauties, conſiſtent with the laws and principles by which ſhe is governed. How far poſitive imitation of nature is, in painting or ſculpture required by, or conſiſtent with the beſt principles of thoſe arts, ſee the article Ideal, in *Painting* and *Sculpture*.

Imitation may here be conſidered as one of the ſources of pleaſure to Taſte. Accordingly it gives riſe to what Mr. Addiſon terms the ſecondary pleaſures of imagination, which form, without doubt, a very extenſive claſs. For all imitation affords ſome pleaſure; not only the imitation of beautiful or great objects, by recalling the original ideas of beauty or grandeur, which ſuch objects themſelves exhibited; but even objects, which have neither beauty nor grandeur, nay, ſome which are terrible or deformed, pleaſe us in a ſecondary or repreſented view. The high power, ſays Dr. Blair, which eloquence and poetry poſſeſs, of ſupplying taſte and imagination with ſuch a wide circle of pleaſures, they derive altogether from their having a greater capacity of imitation and deſcription than is poſſeſſed by any other art. Of all the means which human ingenuity has contrived for recalling the images of real objects, and awakening, by repreſentation, ſimilar emotions to thoſe which are raiſed by the original, none is ſo full and extenſive as that which is executed by words and writing. By the aſſiſtance of this happy invention, there is nothing, either in the natural or moral world, but what can be repreſented and ſet before the mind, in colours very ſtrong and lively. Hence it is uſual among critical writers, to ſpeak of diſcourſe as the chief of all the imitative or mimetic arts; they compare it with painting and with ſculpture, and in many reſpects prefer it juſtly before them. However, neither diſcourſe in general, nor poetry in particular, can be called altogether imitative arts. We muſt diſtinguiſh, ſays Dr. Blair, betwixt imitation and deſcription, which are ideas that ought not to be confounded. Imitation is performed by means of ſomewhat that has a natural likeneſs and reſemblance to the thing imitated, and of conſequence is underſtood by all; ſuch are ſtatues and pictures. Deſcription, again, is the raiſing in the mind the conception of an object by means of ſome arbitrary or inſtituted ſymbols, underſtood only by thoſe who agree in the inſtitution of them; ſuch are words and writing. Words have no natural reſemblance to the ideas or objects which they are employed to ſignify; but a ſtatue or a picture has a natural likeneſs to the original. And therefore imitation and deſcription differ conſiderably in their nature from each other. Nevertheleſs, imitation and deſcription agree in their principal effect, of recalling, by external ſigns, the ideas of things which we do not ſee. But though in this they coincide, it ſhould not be forgotten, that the terms themſelves are not ſynonymous, that they impart different means of effecting the ſame end; and of courſe make different impreſſions on the mind. Blair's Lect. vol. iii. See Poetry.

Imitation, in *Muſic*, dramatic or theatrical, belongs to imitation, as much as poetry and painting do: in this inſtance it is a principle common to all arts. But this imitation does not belong to all arts to the ſame extent. All that the imagination can convey to the mind belongs to poetry. Painting, which cannot preſent its pictures to the imagination, but to ſenſe, and to one ſenſe only, can only paint objects ſubmitted to the judgment of the eye. Muſic ſhould ſeem to have the ſame bounds with reſpect to the ear; however, ſhe can repreſent every thing, even objects that are only viſible: by an illuſion almoſt inconceivable, ſhe ſeems to put the eye into the ear; and the greateſt miracle of an art, which totally depends on movement, is, that it can excite an idea of repoſe. Night, ſleep, ſolitude, and ſilence; all enumerated among the great pictures of muſic. It is known that noiſe can produce the effect of ſilence, and ſilence the effect of noiſe: as when we fall aſleep during an even-toned and monotonous reading, and that we wake the inſtant it ceaſes. But muſic acts more immediately upon our ſenſation in exciting by one ſenſe ſimilar affections to thoſe which we can excite by another. And, as the relations cannot be ſenſible unleſs the impreſſion is forcibly made, painting, ſtripped of this force, cannot return to muſic thoſe imitations which muſic draws from her ideal painting. Let all nature ſleep, the perſon who contemplates her at ſuch time is not aſleep. And the muſician's art conſiſts in ſubſtituting to the inſenſible object that of movement, which its preſence excites in the heart of the beholder. It will not only agitate the ſea, increaſe the flames of a conflagration, render the ſtream of a river more rapid, produce ſhowers, and ſwell torrents; but will paint the horror of a frightful deſert, blacken the walls of a ſubterraneous dungeon, calm the tempeſt, render the air tranquil and ſerene, and ſhed from the orcheſtra new freſhneſs on the grove. It will not repreſent theſe things directly; but it will awaken in the mind the ſame ſenſations which we feel in ſeeing them.

It has been ſaid in the article HARMONY, that we can draw from it no principle of muſical imitation, as there is no relation between chords and objects which we wiſh to paint, or paſſions which we would expreſs. See MELODY.

IMITATION, in its technical ſenſe, is uſing the ſame, or a ſimilar paſſage or melody, in many different parts, which are heard one after the other: in the uniſon, 5th, 4th, 3d, or in any other interval whatever. Imitation is always pleaſing, even if many notes are changed, provided the air is not ſo diſguiſed as to be no longer recognizable, and the rules of modulation are not violated. Often, in order to render imitation more perceptible, it is preceded by a reſt, or by long notes, which ſeem to extinguiſh the melody at the very moment when it is renewed by the imitation. Imitations are warrantable at our pleaſure; they are confined to no particular intervals, they may be continued or changed for another, or the imitation made in *moto contrario*, or contrary motion, or in what way we pleaſe. The ſeveral performers like it better than a dull and dry accompaniment; it renders a part more amuſing to the player and important to the hearer; the rules are as relaxed as thoſe of fugue are rigid: for which reaſon great maſters diſdain imitations from the facility with which they are compoſed; and when purſued too cloſely with the manifeſt ambition of being particularly noticed, they diſcover the *young* contrapuntiſt. Rouſſeau.

IMITATION, *Principle of*, in *Medicine*. Man was characterized by Ariſtotle as an *imitative* animal; and a propenſity to imitation appears from the firſt dawn of reaſon in infants, and in ſome meaſure accompanies us through life. By this term, we do not mean to deſignate that voluntary and deliberate imitation, by which we copy the dreſs, language, or manners of others; but that ſort of *irritative* imitation, (to adopt the language of Dr. Darwin,) of which we are almoſt unconſcious, and to which we are drawn mechanically, as it were, by a propenſity, which it requires an act of volition to reſiſt;—"cette imitation machinale, qui nous porte malgré nous à répéter ce qui frappe nos ſens," as the French commiſſioners have expreſſed it. (Rapport des Commiſſaires, chargés par le Roi de l'Examen du Magnetiſme Animal, p. 77; Paris 1784.) The moſt familiar example of this propenſity that can be adduced, is the act of *yawning*, which is readily propagated from one perſon through a whole company. But there is ſcarcely any irregular action of any organ of the body, which has not been caught (to uſe a common phraſe), in conſequence of this tendency to imitation, by different individuals: thus *ſquinting*, *ſtammering*, *winking* with the eyes, and various unſeemly habits, have been frequently acquired, by aſſociating with thoſe to whom they were already habitual. In a ſimilar manner, many people are immediately excited to the act of *vomiting* by the ſight of a perſon in the ſame act; and various convulſive diſorders have been cauſed by looking on others affected with them. Baglivi mentions a young man, who, looking at a perſon in an *epileptic* fit, was himſelf affected in the ſame manner: and Dr. Whytt ſays, "it has frequently happened in the Royal Infirmary here (at Edinburgh), that women have been ſeized with *hyſteric* fits, from ſeeing others attacked with them;" a fact, which the writer of this article has alſo witneſſed in the ſame hoſpital.

A remarkable example of this infectious nature of convulſive diſeaſes, (if the term may be uſed in this ſenſe,) occurred in the poor's houſe at Haerlem, under the inſpection of the learned Dr. Boerhaave, of which his nephew has given the following account. "In the houſe of charity at Haerlem, a girl, under an impreſſion of terror, fell into a convulſive diſeaſe, which returned in regular paroxyſms. One of the by-ſtanders, intent upon aſſiſting her, was ſeized with a ſimilar fit, which alſo recurred at intervals; and on the day following, another was attacked; then a third, and a fourth; in ſhort, almoſt the whole of the children, both girls and boys, were afflicted with theſe convulſions. No ſooner was one ſeized, than the ſight brought on the paroxyſm in almoſt all the reſt at the ſame time. Under theſe diſtreſſing circumſtances, the phyſicians exhibited all the powerful antepileptic medicines with which their art furniſhed them; but in vain. They then applied to Boerhaave, who, compaſſionating the wretched condition of the poor children, repaired to Haerlem; and whilſt he was inquiring into the matter, one of them was ſeized with a fit, and immediately he ſaw ſeveral others attacked with a ſpecies of epileptic convulſion. It preſently occurred to this ſagacious phyſician, that, as the beſt medicines had been ſkilfully adminiſtered, and as the propagation of the diſeaſe from one to another appeared to depend on the imagination, (or the principle of imitation,) by preventing this impreſſion upon the mind, the diſeaſe might be cured: and his ſuggeſtion was ſucceſsfully adopted. Having previouſly appriſed the magiſtrates of his views, he ordered, in the preſence of all the children, that ſeveral portable furnaces ſhould be placed in different parts of the chamber, containing burning coals, and that irons, bent to a certain form, ſhould be placed in the furnaces; and then he gave theſe farther commands:—that all medicines would be totally uſeleſs, and the only remedy with which he was acquainted, was, that the firſt who ſhould be ſeized with a fit, whether boy or girl, muſt be burnt in the arm, to the very bone, by a red-hot iron. He ſpoke this with uncommon dignity and gravity; and the children, terrified at the thoughts of this cruel remedy, when they perceived any tendency to the recurrence of the paroxyſm, immediately exerted all their ſtrength of mind, and called up the horrible idea of the burning; and were thus enabled, by the ſtronger mental impreſſion, to reſiſt the influence of the morbid propenſity." (Abr. Kaau-Boerhaave, Impet. faciens; Hippoc. dictum, ix. § 406.) This caſe affords at once an illuſtration of the powerful operation of the imitative principle, and of the influence of the imagination, when excited by ſtrong impreſſions, over the diſeaſes of the body, as related in a preceding article. See IMAGINATION.

If we trace the operation of this imitative propenſity a little farther, we find that convulſive diſorders are not only communicated, in this manner, to perſons who live in the ſame houſe or apartment; but that they have, in many inſtances, been propagated from houſe to houſe, by the intimate intercourſe of perſons in the ſame neighbourhood, and thus a ſort of *epidemical convulſions* has been produced. At the latter end of the year 1796, Dr. Haygarth was conſulted reſpecting a convulſive malady, which prevailed for ſome time among the tenants of the earl of Uxbridge and Holland Griffith, eſquire, in the iſland of Angleſey. This diſeaſe gradually ſpread from one girl to twenty-three others, all between the age of ten and twenty-five; except one boy, ſeventeen years old, all the patients were females. This diſorder began with pain in the head, and ſometimes in the ſtomach and ſide, but not very violent: this was ſucceeded by violent twitchings or convulſions of the upper extremities, continuing with little intermiſſion, and cauſing the ſhoulders almoſt to meet by the exertion. The ſecond perſon attacked was ſiſter of the firſt, and lived in the ſame houſe; the third and fourth were acquaintances, and had been much alarmed at ſeeing the fits of the firſt patient. In the courſe of two or three months, eighteen girls were thus attacked, of whom only two had recovered. The influence of the imagination, as well as of the principle of imitation, was obvious from the general alarm and anxiety which prevailed; a ſtate of mind which prediſpoſes to the operation of this principle, as was exemplified by the animal-magnetiſm. (See IMAGINATION.) "All of them," ſays Mr. Griffith, "as far as I can underſtand, were taken much in the ſame manner with the firſt three. Their lower extremities are free from ſpaſms, although they find themſelves conſiderably relaxed. The leaſt alarm throws them into a ſhaking fit. They have in general a hiccup. The anxiety of parents, ſiſters, brothers, friends, &c. for their recovery, is particularly obvious in this neighbourhood." (See Dr. Haygarth's pamphlet, "On the Imagination as a Cauſe and as a Cure of Diſorders of the Body; exemplified by fictitious Tractors, and epidemical Convulſions," 1800.) This intelligent phyſician, after preſcribing ſome antiſpaſmodic medicines, deſired Mr. Griffith to uſe all his authority to prevent girls and young women from having any communication with perſons affected with theſe convulſions, and to keep thoſe who were ill of the diſtemper ſeparate from each other, as much as poſſible. "I warned him," Dr. Haygarth ſays, "that if theſe cautions were not obſerved, the epidemic might ſpread through the whole iſland of Angleſey." Loc. cit. p. 35.

Dr. Haygarth was led to take this view of the ſubject, from his recollection of the caſe of the children in the poor-houſe at Haerlem, and of the occurrence of a convulſive diſeaſe of the hyſterical kind, which, about thirty years before, had ſpread through the ſhire of Angus, in Scotland. Several imperfect deſcriptions of this malady may be found in the "Statiſtical Account" of Scotland. (See alſo Edin. Med. and Surg. Journ. for Oct. 1807, vol. iii. p. 434.) Dr. Whytt long ago noticed the frequency of convulſions in Zetland, and he adduced the extreme facility with which they were propagated among the young women of that iſland, as a proof of the exiſtence of a wonderful ſympathy between the nervous ſyſtems of different individuals, by means of which various motions and morbid ſymptoms are often transferred from one to another, without any corporeal contact or infection. (Eſſay on Nervous Diſorders, chap. iii. ſect. vi.) An account of this diſeaſe, related by the miniſter of the pariſh of Unſt, the moſt northerly of the Shetlands, is given in the Edinburgh Journal, juſt quoted. "There is a ſhocking diſtemper, which has of late years prevailed pretty much," (he writes in 1774,) "eſpecially among young women, and was hardly known 30 or 40 years ago. About that period *only one perſon* was ſubject to it. The inhabitants gave it the name of convulſion fits; and, indeed, in appearance, it ſomething reſembles an epilepſy. In its firſt riſe, it began with a palpitation in the heart, of which they complained for a conſiderable time; it at length produced ſwooning fits, in which people ſeized with it would lie motionleſs upwards of an hour. At length as the diſtemper gathered ſtrength, when any violent paſſion ſeized, or on a ſudden ſurpriſe, they would all at once fall down, toſs their arms about, writhe their bodies into very odd ſhapes, crying out all the while moſt diſmally, throwing their heads about from ſide to ſide, with their eyes fixed and ſtaring. At firſt this diſtemper obtained in a private way with one female, but ſhe *being ſeized in a public way at church*, the diſeaſe was communicated to others, but whether by the influence of fear or *ſympathy* is not eaſy to determine." (P. 438, vol. iii.) In another of the northern pariſhes, Delting, the diſeaſe was very prevalent. "The patient is firſt ſeized with ſomething like fainting, and immediately after utters wild cries and ſhrieks, the ſound of which, at whatever diſtance, immediately puts all who are ſubject to the diſorder in the ſame ſituation. It moſt commonly attacks them *when the church is crowded*, and often interrupts the ſervice in this and many other churches in the country. On a ſacramental occaſion, fifty or ſixty are ſometimes carried out of the church, and laid in the church yard, where they ſtruggle and roar with all their ſtrength for five or ten minutes, and then riſe up without recollecting a ſingle circumſtance that happened to them, &c." (See Statiſtical Account, vol. i. p. 385, 1791.) In this deſcription we recognize the features of hyſteria; and the influence of moral cauſes in removing, as well as in inducing theſe convulſive maladies, was evinced in the pariſh of Northmaven, where the diſeaſe was thus extinguiſhed. "The cure is attributed to a rough fellow of a kirk-officer, who toſſed a woman in that ſtate, with whom he had been frequently troubled, into a ditch of water. She was never known to have the diſeaſe afterwards, and others dreaded the like treatment." (Stat. Acc. vol. xii. p. 363, 1794.) Here the principle of cure was perfectly analogous to that reſorted to by Boerhaave in the work-houſe at Haerlem.

Every ſpecies of mental emotion is propagated in a ſimilar manner among crowds of people under various circumſtances, and the more readily when they are accompanied by corporeal actions. If the ſight of a number of perſons, in the act of yawning, almoſt irreſiſtibly impels us to yawn with them; ſo the ſight of a multitude of ſorrowful countenances, or of countenances in furious anger, carries us into ſimilar feelings, and renders us moſt acutely ſuſceptible of correſponding impreſſions from the ſlighteſt cauſes. Hence ariſes much of the *magnanimity* of armies, on the one hand, and the facility of the propagation of *panic*, on the other; hence the uncontrollable fury of mobs, &c. But there is no general emotion, which renders the body more completely ſubſervient to every degree of this ſympathetic or imitative influence, than that of religious enthuſiaſm. This was exemplified, in a ſtriking manner, in the epidemic convulſions, which occurred in the pariſh of Cambuſlang, in Lanarkſhire, in 1742, and is well deſcribed by Dr. Meik. The miniſter, Mr. M'Culloch, who was an enthuſiaſt, and a follower of Whitefield, by inceſſant zeal and labour in his vocation, and by reading and circulating, in halfpenny pamphlets, various miſſives, atteſtations, and journals, giving an account of converſions in different parts of the world, excited an extraordinary concern about religion in his neighbourhood. In conſequence of a petition, ſigned by ninety maſters of families, a weaver and a ſhoemaker being at their head, he gave evening lectures on the week days occaſionally; and afterwards they were daily employed for many hours in fervent prayer; in the miniſter's houſe, and hearing his lectures; and great numbers cried out publicly, and many returned to his houſe expreſſing ſtrong convictions of ſin and alarming fears of puniſhment. "The way in which the converts were affected," ſays Dr. Meik, "for it ſeems they were affected much in the ſame way, though in very different degrees, is thus deſcribed. They were ſeized all at once, commonly by ſomething ſaid in the ſermons and prayers, with the moſt dreadful apprehenſions concerning the ſtate of their ſouls, inſomuch that many of them could not abſtain from crying out in the moſt public and frightful manner, "bewailing their loſt and undone condition by nature, &c. &c.; declaring that they ſaw the mouth of hell open to receive them, and that they heard the ſhrieks of the damned;" but the univerſal cry was, "what ſhall we do to be ſaved?" The agony under which they laboured, was expreſſed not only by words, but alſo by violent agitations of body; by clapping their hands and beating their breaſts; by *ſhaking* and *trembling*, by *faintings* and *convulſions*; and ſometimes by exceſſive bleeding at the noſe. While they were in this diſtreſs, the miniſter often called out to them, not to ſtifle or ſmother their convictions, but to encourage them; and after the ſermon was ended, he retired with them to the manſe, and frequently ſpent the beſt part of the night with them in exhortations and prayers," &c. Some of thoſe, it is ſaid, who thus "fell under conviction," were never converted; but ſome were converted in a few hours.

It is impoſſible to read this account without recollecting the operations of Meſmer with his animal magnetiſm, and their cloſe ſimilarity with theſe fanatical proceedings; eſpecially the exact analogy of the phenomena, when the magnetiſed perſons were ſaid to *fall into the criſis* ("tomber en criſe"), and theſe zealots to *fall under conviction*. Both theſe events were the reſult of ſtrong impreſſions on the imagination continued for ſome time; in both, the ſighings and ſobbings, the faintings and convulſions occurred; and in both theſe criſes were moſt rapidly produced, after one perſon had become thus affected. (See IMAGINATION.) Under the article juſt referred to, we have adduced the demonſtrative proofs, obtained by the French commiſſioners, that all thoſe phenomena attributed to *magnetiſm*, were the products of the heated *imagination*, augmented by the principle of *imitation*; and we cannot but refer theſe analogous effects of fanaticiſm to the ſame natural cauſes. Upon this ground they were generally explained at the time by rational people. "That the work of Cambuſlang ought to be aſcribed neither to the influence of the Holy Spirit, nor to the influence of the devil, but to the influence of fear and hope, of ſympathy and example, aided by peculiar circumſtances, was the general opinion of thoſe," Dr. Meik obſerves, "who are known in the church of Scotland by the name of the moderate party. The only extraordinary circumſtance relating to this work, is the external effect on the bodies of men by which it manifeſted itſelf; and theſe, they thought, might be ſufficiently explained by the operation of natural cauſes, &c." "When this work was once begun, they maintained, that the effects of ſympathy and example (*i. e.* the principle of imitation) ſufficiently explain its future progreſs. Every day's experience ſhews that we are *diſpoſed to imitate* the actions of others, and that we are naturally, and, as it were, *mechanically* moved by ſeeing them, either in the depth of diſtreſs, or in the height of exultation. The operation of theſe principles was viſible in almoſt every inſtance. Whenever any one was affected, many others were affected in a ſimilar manner. Whenever any one cried aloud, either through exceſſive grief or joy, but eſpecially the former, many others cried aloud likewiſe, uſing the ſame words, or words of the ſame meaning. Statiſt. Acc.

At a ſtill more recent period, namely, in the ſummer of 1803, a ſpecies of *chorea*, or St. Vitus dance, became epidemic in Teneſſee, in America, connected with the prevalence of religious enthuſiaſm. Great numbers of people were collected together, eſpecially at their extraordinary meetings, which commonly laſted from three to five days; and many of them remained on the ſpot day and night, the whole or greater part of the time, worſhipping their Maker almoſt inceſſantly. "The outward expreſſions of their worſhip conſiſted chiefly in alternate crying, laughing, ſinging, and ſhouting, and, at the ſame time, performing that great variety of geſticulation which the muſcular ſyſtem is capable of producing. It was under theſe circumſtances that ſome found themſelves unable, by voluntary efforts, to ſuppreſs the contractions of their muſcles; and to their own aſtoniſhment and the diverſion of many of the ſpectators, they continued to act from *neceſſity* the curious character which they had commenced from *choice*. The diſeaſe no ſooner appeared than it ſpread with rapidity through the medium of the principle of *imitation*: thus it was not uncommon for an affected perſon to communicate it to the greater part of a crowd, who, from curioſity or other motives, had collected around him. It is at this time (1805) in almoſt every part of Teneſſee and Kentucky, and in various parts of Virginia; but it is ſaid not to be ſo contagious (or readily communicated) as at its commencement. It attacks both ſexes, and every conſtitution; but evidently more readily thoſe who are enthuſiaſts in religion (ſuch as thoſe above deſcribed), and females: children of ſix years of age, and adults of ſixty, have been known to have it; but a great majority of thoſe affected are from fifteen to twenty-five. The muſcles generally affected are thoſe of the trunk, particularly of the neck, ſometimes thoſe of the ſuperior extremities, but rarely, if ever, thoſe of the inferior. The contractions are ſudden and violent, ſuch as are denominated convulſive, being ſometimes ſo powerful, when in the muſcles of the back, that the patient is thrown on the ground, where for ſome time his motions more reſemble thoſe of a live fiſh, when thrown on land, than any thing to which I can compare them. This, however, does not often occur, and never, I believe, except at the commencement of the diſeaſe, &c." See an Inaugural Eſſay on Chorea Sancti Viti. By Felix Robertſon, of Teneſſee, Philadelphia, 1805. Edin. Med. and Surg. Journal, vol. iii. p. 446.

In conſequence of the facility with which ſuch convulſive motions are communicated by *imitation*, various corporeal movements which fanaticiſm or enthuſiaſm had aſſociated with devotional exerciſes, have become characteriſtic of certain ſects, to which they have even given names. From this ſource, it would appear, have originated the appellations of *Jumpers*, *Whirlers*, *Tremblers*; and even our now placid ſect, the *Quakers*, have doubtleſs derived their denomination from ſome ſimilar habit. A ſingular ſpaſmodic diſeaſe, the chorea Sti. Viti, or *Saint Vitus's dance*, has moſt probably derived its appellation from the reſemblance of the involuntary motions of the limbs to ſome of thoſe religious or fanatical geſticulations. Tradition ſtates that it was ſo named from the annual religious aſſemblies and fanatical dances, in honour of St. Vitus, which were celebrated on the firſt of May, at Ulm and Ravenſpurg, and other parts of Germany. See CHOREA.

This ſubject is far from being exhauſted. The preceding ſtatements, however, ſeem to afford a ſatisfactory illuſtration of a ſympathy, or a mechanical, *i. e.* an involuntary tendency to *imitation*, which is a part of the human conſtitution, and is as viſible in the ſlighteſt actions, ſuch as yawning, as in thoſe which more forcibly arreſt attention, and excite emotions, ſuch as convulſive fits. And when to this principle we add the power of the imagination over the phyſical ſtate of the body, as evinced by the effects of metallic and counterfeit tractors, of the touching of kings and other gifted perſons, of ſainted ſhrines and relics, and of animal magnetiſm, &c.; we are enabled to explain the occurrence of a number of extraordinary phenomena in the hiſtory of man, which, if we viewed his moral and phyſical faculties ſeparately, would appear altogether inexplicable by natural cauſes.

Dr. Haygarth has deduced this practical inference, for the direction of the phyſician, from the conſideration of theſe facts; namely, that convulſive diſorders ought not to be admitted into the female wards of hoſpitals; a ſuggeſtion which he cauſed to be acted upon in the Cheſter Infirmary. And it is important to know that, in diſtricts where convulſive diſeaſes are obſerved to be ſpreading, any medical or other intelligent and humane neighbour, who has influence and authority to hinder all intercourſe between perſons afflicted with and liable to ſuch diſorders, may prevent ſuch calamities. See Dr. Haygarth's pamphlet, alſo Rapport des Commiſſaries above quoted, p. 67, *note*, where ſeparation was proved to be an effectual cure. Similar caſes may be found, in a work of M. Hecquet, "Le Naturaliſme des Convulſions."

Imitation, in *Oratory*, is an endeavour to reſemble a ſpeaker or writer in thoſe qualities, with regard to which we propoſe them to ourſelves as patterns. The firſt hiſtorians among the Romans, ſays Cicero, were very dry and jejune, till they began to imitate the Greeks, and then they became their rivals. It is well known how cloſely Virgil has imitated Homer in his Æneid, Heſiod in his Georgics, and Theocritus in his Eclogues. Terence copied after Menander; and Plautus after Epicarmus, as we learn from Horace, lib. ii. ep. ad Auguſt. who himſelf owes many of his beauties to the Greek lyric poets. Cicero appears, from many paſſages in his writings, to have imitated the Greek orators. Thus Quintilian ſays of him, that he has expreſſed the ſtrength and ſublimity of Demoſthenes, the copiouſneſs of Plato, and the delicacy of Iſocrates. Inſt. Or. lib. x. cap. 1.

Writers on rhetoric have propoſed three enquiries under the head of imitation, *viz.* Who are to be imitated? What we are to imitate? and in what manner? With reſpect to the firſt we ſhall only obſerve, that in common caſes it is not always what is abſolutely beſt, but comparatively ſo in its own kind, and beſt ſuits their own taſte, that ſhould determine perſons in the choice of their patterns for imitation: however, only the beſt writers, and thoſe whom we can moſt ſafely truſt, ſays Quintilian, are to be read long. With reſpect to the ſecond enquiry, the things to be imitated are the perfections of the beſt maſters in their ſeveral kinds; and theſe are different, according to the various ſubjects in which they excel. As to the manner of imitation, it ought to be conſidered, that he who only copies or tranſlates from another, and endeavours to paſs it off for his own, is not an imitator but a plagiary. The true art of imitation conſiſts in ſo diverſifying what we take from others, as, if we can, to improve it, or at leaſt not ſuffer it to receive any detriment by our alteration. And this may be done, by ſo enlarging a thought, or expreſſion taken from another, as in a good meaſure to render it our own: by either abridging, or only taking a part of what another has ſaid before us; by keeping the thought and applying it to a different ſubject; and finally, by preſerving the thoughts and applying them to the ſame ſubject, but changing their order, and repreſenting them in a different dreſs. See Ward's Orat. vol. ii. ſect 53 and 54.

IMITAZIONE, *Ital.* imitation, in *Muſic.* See Fugato.

IMIZIMIS, in *Geography*, a town of Morocco, on the mountains of Atlas; 60 miles S.W. of Morocco.

IMLIATSKAIA, a town of Ruſſia, in the government of Upha, on the river Imliat; 60 miles E.N.E. of Tcheliabinſk.

IMMA, in *Ancient Geography*, a town of Aſia, in Syria; ſituated at the northern point of a mountain E. of Orontes, towards the ſouth-eaſt of Antiochia.

IMMACULATE, *without ſtain*, a term much uſed among the Romaniſts: when ſpeaking of the conception of the Bleſſed Virgin, they call it immaculate.

When the cap is given to a doctor of the Sorbonne, he is obliged to ſwear that he will defend the immaculate conception. This was decreed by an act of the Sorbonne in the fourteenth century; in imitation of which, eighty other univerſities made the ſame order.

The military orders in Spain are all ſolemnly obliged to defend this prerogative of the Virgin. See Conception.

There is alſo a Congregation of the Immaculate Conception; in moſt nunneries whereof is a ſociety of ſecular maids, whoſe end is to honour the immaculate conception: of which they make a public proteſtation every year, and a private one every day. See Theatines.

IMMANENT, in *Logic.* The ſchoolmen diſtinguiſh two kinds of actions; the one *tranſient*, which paſs from the agent to the patient; the other *immanent*, which continue in the agent. See Action.

IMMATERIALITY, abſtraction from matter; or what we underſtand by pure ſpirit.

Plato proves the immateriality of the ſoul from theſe ſix topics. 1. Its ſimplicity. 2. Its independency on the body, which is twofold; in its *eſſe*, and in its *operari* in exiſting, and in acting or operating ſeparately. 3. Its rule and authority over the body. 4. Its likeneſs and ſimilitude to God, which diſcovers itſelf in the pleaſure it enjoys in ſpiritual things, in its aiming at ſpiritual objects, &c. 5. Its ſpiritual manner of perceiving material objects. And, laſtly, its indiviſibility, capacity, activity, and immortality. See Soul.

IMMEDIATE, that which precedes or follows ſome other thing, without any interpoſition.

Immediate alſo ſignifies ſomething that acts without means, or without medium. In which ſenſe we ſay, immediate grace, and immediate cauſe, &c.

Immediate *Mode.* See Mode.

Immediate *Fire.* See Fire.

IMMEMORIAL, an epithet given to the time or duration of any thing whoſe beginning we know nothing of.

In a legal ſenſe, a thing is ſaid to be of time immemorial, or time out of mind, that was before the reign of our king Edward II.

IMMENDORF, in *Geography*, a town of Auſtria, eight miles N. of Sonneberg.

IMMENHAUSEN, a town of the principality of Heſſe-Caſſel; eight miles N.N.W. of Caſſel. N. lat. 51° 5′. E. long. 9° 25′.

IMMENSE, that whoſe amplitude, or extenſion, no finite meaſure whatſoever, or how oft ſoever repeated, can equal.

IMMENSTADT, in *Geography*, a town of Germany, in the county of Konigſegg, on a ſmall river, which ſoon after joins the Iller; 12 miles S. of Kempten.

IMMER, one of the iſlands called New Hebrides, in the South Pacific ocean. S. lat. 19° 16′. E. long. 169° 46′.

IMMERETIA. See IMIRETTA.

IMMERSION, an act by which any thing is plunged into water, or ſome other fluid.

In the firſt ages of Chriſtianity, baptiſm was performed by immerſion; by three immerſions. The cuſtom of immerſion is ſaid to be ſtill preſerved in Portugal, and among the Anabaptiſts in other parts. See BAPTISM.

IMMERSION, in *Pharmacy*, is the preparation of ſome medicine, by letting it ſteep for ſome time in water, in order to take ſome ill quality or taſte from it.

This is done in rhubarb, to moderate its force; in lime to take away its ſalt: and in olives, which are preſerved in brine.

IMMERSION, in *Aſtronomy*, is when a ſtar or planet comes ſo near the ſun, that we cannot diſcern it; being as it were enveloped, and hid in the rays of that luminary.

IMMERSION alſo denotes the beginning of an eclipſe of the moon; that is, the moment when the moon begins to be darkened, and to enter into the ſhadow of the earth.

The ſame term is alſo uſed with regard to an eclipſe of the ſun, when the diſk of the moon begins to cover it.

In this ſenſe, immerſion ſtands oppoſed to *emerſion*, which ſignifies the moment wherein the moon begins to come out of the ſhadow of the earth; or the ſun begins to ſhew the parts of his diſk which were hid before.

IMMERSION is frequently applied to the ſatellites of Jupiter, and eſpecially to the firſt ſatellite; the obſervation whereof is of ſo much uſe for diſcovering the longitude.

The immerſion of that ſatellite is the moment in which it appears to enter within the diſk of Jupiter; and its emerſion the moment wherein it appears to come out.

The immerſions are obſerved from the time of the conjunction of Jupiter with the ſun, to the time of his oppoſition; and the emerſions from the time of his oppoſition to his conjunction. The peculiar advantage of theſe obſervations is, that during eleven months of the year they may be made, at leaſt, every other day. The perfection of the theory, and the praxis thereon, we owe to M. Caſſini.

IMMERSION, *Scruples of.* See SCRUPLE.

IMMICTIO, an inability of retaining the urine. See INCONTINENCE *of Urine*.

IMMORTAL, that which will laſt to all eternity, as having in itſelf no principle of alteration or corruption.

Plato defines immortality *ȣσια ἐμψυχος και αιδιος μονη*, *animated eſſence and eternal manſion*; and proves the immortality of the ſoul from two kinds of arguments; the one *artificial*, and the other *inartificial*.

The inartificial arguments for the ſoul's immortality are teſtimonies and authorities, whereof he cites ſeveral; and adds in general, that all the great men and poets, who had any thing divine in them, have at all times aſſerted the immortality of the ſoul.

Artificial or proper arguments for the immortality are either *ſpeculative* or *practical*: of the firſt kind are thoſe drawn from, 1. The ſimple, uniform, ſpiritual, and divine nature of the ſoul. 2. From its infinite capacity. 3. Its deſiring and longing after immortality, and its inward horror of falling into nothing; proving it abſurd that the ſoul ſhould die, when life is its proper and adequate object. 4. Its rational activity; proving that whatever has in itſelf a principle of rational and ſpontaneous motion, by which it tends towards ſome ſupreme good, is immortal. 5. The various ideas which it has of ſpiritual things; particularly the idea it has of immortality: and, 6. Its immateriality.

His practical or moral arguments for the immortality of the ſoul, are drawn from, 1. The juſtice of God, which can never ſuffer the wicked to eſcape unpuniſhed, nor the good unrewarded after death. 2. The dependence which religion has on this opinion, becauſe, without this perſuaſion, there would be no religion in the world. 3. The opinion which men have, that juſtice and every kind of virtue are to be cultivated, that they may at laſt live with God. 4. The ſtings of conſcience, and anxious ſolicitude we are under about a future ſtate. See SOUL.

IMMORTAL *Flower*, in *Botany*. See GOMPHRENA.

IMMUNITY, a privilege or exemption from ſome office, duty, or impoſition.

Immunity is more particularly underſtood of the liberties granted to cities and communities.

The princes heretofore granted all kinds of immunities to eccleſiaſtics, exempting them from all impoſitions; but the eccleſiaſtics of thoſe days were not ſo rich as thoſe of ours: they gave all they had to the poor.

There is ſtill a privilege of immunity in ſome places, and eſpecially in Italy, belonging to eccleſiaſtical things, and perſons; who are exempted from certain dues, and are ſheltered from the purſuits of juſtice. Though there are ſome crimes for which they cannot plead the privilege of their immunity, as premeditated murder, &c

IMMUTABILE SYSTEMA. See SYSTEM.

IMMUTABILITY, the condition of a thing that cannot change.

Immutability is one of the divine attributes. See GOD.

IMMYNS, JOHN, in *Biography*, a ſelf-taught muſician, ſaid to have become a notable lutenift after 40, by the peruſal of Maſter Mace, whoſe ideas, taſte, and language ſeem to have been perfectly congenial. Immyns founded the Madrigal ſociety, and was ſo convinced of the perfection of that ſpecies of muſic, particularly of queen Elizabeth's reign, that "he looked on Handel and Bononcini as the great corrupters of the ſcience." He had a cracked countertenor voice, played on the common flute, the viol da gamba, violin, and harpſichord, but on none of them well. Though originally an attorney, there was doubtleſs a conflict between the two profeſſions—

——— "but muſic won the cauſe."

However, with all his harmonical zeal and enthuſiaſm, he never obtained a higher rank in the profeſſion, than that of amanuenſis to Dr. Pepuſch, and copyiſt to the Academy of Ancient Muſic at the Crown and Anchor. Yet he was always in cheerful ſpirits; and the honour of having eſtabliſhed the Madrigal ſociety, and being its chairman at different alehouſes in the city, preſiding over dilettanti tradeſmen, mechanics, and pſalm ſingers, contributed as much, perhaps, to his pride and felicity, as the being preſident of the Royal Society, or ſpeaker of the houſe of commons could have done. But alas! the tyrant Death dragged him from all his ſublunary felicity in 1764.

IMOLA, INNOCENCIO DA. See FRANCUCCI.

IMOLA, in *Geography*, a town of Italy, in the department of the Amona, anciently called "Forum Cornelii," or "Forum Julii," ſituated on an iſland, formed by the river Salerno, ſurrounded with walls, towers, and ditches, and defended with a ſtrong caſtle; the ſee of a biſhop, ſuffragan of Ravenna. It contains 16 churches and 17 convents. After having been occupied by different poſſeſſors, Cæſar Borgia became maſter of it, and annexed it, with the reſt of Romagna, to the dominions of the church; 18 miles S.E. of Bologna. N. lat. 44° 22′. E. long. 11° 32′.

IMOMNAGUR, a town of Hindooſtan, in Bahar; 25 miles E.S.E. of Bahar.

IMORI, a town of Japan, in the iſland of Niphon; 16 miles S. of Meaco.

IMPACH, a town of Auſtria; ſix miles W.N.W. of Crems.

IMPALED, in *Heraldry*, is underſtood of a ſhield party per pale, or divided into two halves by a line drawn palewiſe through the middle, from the top to the bottom.

When the coats of arms of a man and his wife, who is not an heireſs, are borne in the ſame eſcutcheon, they muſt be impaled, or marſhalled in pale, *i. e.* the huſband's on the right ſide, and the wife's on the left; and this the heralds call *baron and femme*, two coats impaled.

Impaling hath been practiſed in three different ways: 1. By dimidiation, that is, by halving or cutting the ſhields of the arms of both huſband and wife into two equal parts, and then joining the dexter half of the huſband's coat to the ſiniſter half of the wife's; thus making up or forming a whole ſhield. In this mode, called "Accolée," the French kings uſed to impale the arms of Navarre. The 2d mode is by dimidiating the huſband's arms, and impaling that with the full coat of the wife's. The *laſt* general and preſent rule is that of impaling the two whole coats, except when there is a border round one or both of them; for the border muſt never be carried all round an impaled coat. This dimidiation of arms was much uſed in the reign of king Edward I.; in proof of which it is aſſerted by Mr. Sandford in his "Genealogical Hiſtory," that Margaret, ſiſter to Philip IV. king of France, and ſecond wife to king Edward I., had, on her ſeal, in 1299, the arms of England ſo dimidiated with thoſe of France, and that ſhe was the firſt queen of England who had her arms ſo marſhalled. This method of impaling arms by dimidiation hath been for ſome time laid aſide in England, though it has been continued in France. It was a frequent practice with the nobility of England, from the reign of Edward III. to that of Henry VII. to quarter the arms of the wife; and alſo to place her arms in the firſt quarter, in preference to the paternal coat of the huſband's family, particularly if her family was of greater dignity; and Mr. Niſbet, in his "Syſtem of Heraldry," informs us, that it is a cuſtom in Scotland, when a man marries an heireſs, for him to quarter her arms with his own paternal coat; but he allows that it is not practiſed in any other country. Our heraldic authors ſay, theſe are the rules to be obſerved in impaling the arms of huſband and wife. 1ſt. The huſband's arms are always to be placed on the right ſide as baron, and the wife's on the left as femme. 2dly. That no huſband can impale his wife's arms with his own, on a ſurcoat of arms, enſign or banner, but may uſe them impaled on other utenſils. 3dly. That no huſband impaling his wife's arms with his own, can ſurround the ſhield with the order of the garter, or with any other order: becauſe, as Mr. Sandford argues, although the huſband may give his equal half of his eſcutcheon, yet he cannot ſhare his temporary order of knighthood with her, except ſhe be ſovereign of the order. The mode lately adopted for knights of the Garter, Bath, and Thiſtle, to wear their arms and thoſe of their wives in two ſeparate ſhields, with the garter or order round their own coat only, is taken from the French; but Mr. Edmondſon does not hold this to be good armoury, becauſe the arms cannot be ſaid to be impaled baron and femme, as hath been uſual in England upwards of 600 years. However, on the deceaſe of the knight her huſband, when ſhe becomes a widow, the wife ought not in any reſpect to bear the garter round her arms, becauſe, on the demiſe of the knight, his honour of knighthood reverts to the crown.

It hath been laid down as a rule by many, that if a man hath had two wives, he may impale both their arms on the ſiniſter ſide, thoſe of the firſt wife in chief, and thoſe of the ſecond in baſe. It hath alſo been ſaid, that if a man hath had two wives, he may place his own arms in pale, and thoſe of his two wives on the dexter and ſiniſter ſide, giving the firſt the dexter ſide; and ſo, if he had ſix wives, he may place the arms of three of them on the dexter ſide, and thoſe of the other three on the ſiniſter ſide. But the errors of theſe poſitions, ſays Mr. Edmondſon, are ſo flagrant, that they need little argument to refute them. The intent of impaling a wife's arms is to ſhew that the man is then married to a woman of that particular family, whoſe arms are impaled with his own; therefore, when by her death he is releaſed from that marriage, he ceaſes to bear the arms of her family. The caſe is different in regard to a widow: whilſt ſhe remains ſuch, ſhe is obliged to bear the arms of her deceaſed huſband.

Kent aſſerts that no women, except ſuch as are heireſſes, are entitled to have their arms impaled with thoſe of the huſband; but this is abſurd, becauſe impaling arms is intended to point out the family into which the huſband is married, and not to indicate that the wife brought with her any real or perſonal property whatever. In impaling of a coat, you never put any marks of cadency for the firſt, ſecond, and third daughter; but if there be any marks of cadency on the father's coat, all his daughters muſt continue the ſame.

Impaled arms are alſo borne by officers, as well eccleſiaſtical as civil, as archbiſhops, biſhops, kings of arms, &c; but with this difference from thoſe of the manner of impalement of the arms of baron and femme, *viz.* that the arms of the church are to be placed on the dexter ſide, and the man's on the ſiniſter. The like rule is to be obſerved in relation to civil officers.

IMPALEMENT, in a *penal* ſenſe. }
IMPALEMENT, in *Phytology*. } See EMPALEMENT.

IMPALPABLE, that whoſe parts are ſo extremely minute, that they cannot be diſtinguiſhed by the ſenſes, particularly by that of feeling.

IMPANATION, formed of *in* and *panis*, *bread*, a term uſed among divines to ſignify the opinion of the Lutherans with regard to the euchariſt; who believe that the ſpecies of bread and wine remain, together with the body of our Saviour, after conſecration. See CONSUBSTANTIATION.

IMPANATORES. See ADESSENARII.

IMPANNELLING, in *Law*. See EMPANELLING.

IMPARES SCAMILLI. See SCAMILLI.

IMPARFAIT, Fr. imperfect. This word has many acceptations in muſic: as an imperfect chord, imperfect concord, imperfect cadence, &c. always oppoſed to perfection. The bearings which temperament requires, and which every interval, except the octave will allow, without greatly offending the ear, occaſion *imperfect intervals*. See INTERVAL and TEMPERAMENT.

IMPARLANCE. See EMPARLANCE.

IMPARSONEE, in *Law*, is applied to a parſon that is inducted, and in poſſeſſion of a benefice.

IMPARTITO, *Ital.* is ſaid of the ſolution of a canon, when it is written in ſcore, or drawn out in different parts;

in oppoſition to *canone chiuſo*, or a canon wrapt up in myſtery.

IMPASSIBLE, that which is exempt from ſufferings; or which cannot undergo pain, or alteration.

The Stoics place the ſoul of their wiſe man in an impaſſible, imperturbable ſtate. See APATHY.

IMPASTATION, the mixture of divers materials of different colours and conſiſtencies, baked or bound together with ſome cement, and hardened either by the air, or fire.

IMPASTATION is ſometimes uſed for a ſort of maſon's-work, made of ſtucco, or ſtone ground ſmall, and wrought up again, in manner of a paſte.

Authors are of opinion that the obeliſks, and the huge antique columns ſtill remaining, were made, ſome by impaſtation. and others by fuſion; but this is wholly erroneous; they are all cut out of quarries, yet open in Egypt, Arabia, &c.

IMPASTING, in *Painting*. See EMPASTING.

IMPATIENS, in *Botany*, is a genus ſo named from the great elaſticity of the ſutures of its ſeed veſſels, which is completely impatient of the touch, curling up with the greateſt velocity, and ſcattering round the ſeeds, the inſtant any extraneous body comes in contact with it. From this remarkable circumſtance it has obtained the Engliſh appellation of "Touch me not." Linn. Gen. 458. Schreb. 597. Willd. Sp. Pl. v. 1. 1173. Mart. Mill. Dict. v. 2. Sm. Fl. Brit. 243. Ait. Hort. Kew. v. 3. 292. (Balſamina; Juſſ. 270. Tournef. t. 235. Gærtn. t. 113.)—Claſs and order, *Pentandria Monogynia*. Nat. Ord. *Corydales*, Linn. *Gerania*, Juſſ.

Gen. Ch. *Cal.* Perianth very ſmall, of two roundiſh, pointed equal leaves, placed towards the ſides of the flower, coloured, deciduous. *Cor.* Five-petalled, irregular; the upper petal roundiſh, flat, ſlightly trifid, making a ſort of upper lip; lower pair very large, obtuſe; intermediate pair oppoſite, riſing from the baſe of the upper petal; nectary receiving, like a hood, the baſe of the flower. *Stam.* Filaments five, very ſhort, narrower towards the baſe, incurved; anthers five, connate, divided at the baſe. *Piſt.* Germen ſuperior, ovate-acuminate; ſtyle none; ſtigma ſimple, ſhorter than the anthers. *Peric.* Capſule one-celled, five-valved, burſting longitudinally and with great elaſticity, the valves rolling ſpirally. *Seeds* ſeveral, roundiſh, fixed to a columnar receptacle.

Eſſ. Ch. Corolla of five petals, irregular, with an hooded nectary. Anthers ſlightly connected. Capſule ſuperior, of five elaſtic valves. Calyx of two leaves.

Obſ. The anthers being united induced Linnæus and many other authors to refer this genus to *Syngeneſia Monogamia*; but ſince the abolition of that order from the Linnæan ſyſtem, it of courſe belongs to *Pentandria Monogynia*. In ſome ſpecies the middle petals are wanting, and in ſome the horn of the nectary. The capſule differs in figure; hence the *Impatiens* of Rivinus had a long capſule, and his *Balſamine* an ovate one.

1. I. *Noli me tangere.* Yellow balſam, or Touch me not. Linn. Sp. Pl. 1329. Engl. Bot. t. 937. "Flower-ſtalks ſolitary, bearing many flowers. Leaves ovate. Joints of the ſtem ſwelling."—Not unfrequent in the northern parts of England and Wales, particularly in the neighbourhood of the lakes of Cumberland, flowering in Auguſt.—*Root* fibrous, ſmall, ſpreading horizontally. *Stem* ſolitary, erect, about two feet high, ſucculent, pellucid, ſmooth and poliſhed. *Leaves* alternate, on foot-ſtalks, ovate, obtuſe, ſerrated, the lower ſerratures briſtly; Villars remarks they become flaccid and as if withered in the night, but this is not always the caſe. *Flower-ſtalks* axillary and branched, bearing three or four yellow, pendulous *flowers*, dotted with red internally. *Nectary* funnel-ſhaped, with a recurved top. *Capſule* oblong, gibbous, pendulous; its valves ſo elaſtic that they burſt and ſcatter the *ſeeds* before the capſule is ripe. Hence the Latin names of "Impatiens" and "Noli me tangere;" and the Engliſh names of "Quick in hand," alive, as it were, in the hand. Gerarde calls it "Codded Arſmart," and Parkinſon, "Wild Mercury." The elaſticity of the ſeed-veſſel has furniſhed names in moſt of the European languages. In the day time the leaves are expanded, but at night they hang pendant, contrary to what is obſerved in moſt plants which, from a deficiency of moiſture, or a too great perſpiration from heat, commonly droop their leaves during the day. This plant was formerly conſidered as diuretic and vulnerary, and was given to relieve the hæmorrhoids and the ſtrangury. Boerhaave regarded it as poiſonous. It is now conſigned wholly to the flower-garden, where, however, it is not often ſeen. It is the only ſpecies of impatiens wild in Europe. It is alſo found in Canada. With us, it occurs in Wales and the northern counties of England, in moiſt ſhady places, and by the banks of rivulets. It flowers in July and Auguſt.

We have deſcribed the only Britiſh ſpecies of this ſingular genus. Willdenow enumerates twelve ſpecies, which, like the ſeven Linnæan ones, are divided into ſuch as have ſingle-flowered peduncles, and ſuch as have many flowers on each ſtalk, in which latter diviſion the *Noli me tangere* occurs.

The ſeeds of theſe plants ſhould be ſown on a moderate hot-bed in the ſpring, and when the plants are an inch high, they ſhould be tranſplanted on another hot-bed at about four inches diſtant each way, ſhading them from the ſun till they have taken new root; after which free air ſhould be copiouſly admitted to them, when the weather is favourable, and they ſhould be often refreſhed with water. When they are ſo large as to touch each other, they ſhould be taken up with balls of earth to their roots, and each planted in a ſeparate pot filled with light rich earth, and plunged into a very moderate hot-bed under a deep frame, ſhading them from the ſun till they have taken freſh root. They ſhould then be accuſtomed to bear the open air, into which part of the plants may be removed in July, placing them in a warm ſituation; where, in a favourable ſeaſon, they will flower and make a fine appearance. But part ſhould be kept in a glaſs caſe or deep frame, in order to get good ſeeds. Thoſe who are curious to preſerve theſe plants in perfection pull off all the ſingle and plain coloured flowers from the plants which they preſerve for ſeeds, leaving only thoſe flowers which are double, and of good colours: and thus they may be continued without degeneracy.

IMPEACHMENT, from the Latin, *impetere*, to *ſet upon*, or *attack*; or rather from the French, *empecher*, *to hinder*, in *Law*, is the accuſation and proſecution of a perſon for treaſon, or other crimes and miſdemeanors. Any member of the lower houſe of parliament may impeach any one belonging either to that body or the houſe of lords. The method of proceeding is to exhibit articles on the behalf of the commons, by whom managers are appointed to make good their charge. Theſe articles are carried to the lords, by whom every perſon impeached by the commons is tried; and if they find him guilty, no pardon under the great ſeal can be pleaded to ſuch an impeachment. (12 & 13 Will. III. c. 2.) A commoner cannot, however, be impeached before the lords for any capital offence, but only for high miſdemeanors. A peer may be impeached for any crime; the articles of impeachment are a kind of bills of indictment, found by the houſe of commons, and afterwards tried by the lords, who, in caſes of miſdemeanors, are conſidered not only as their own peers, but as the peers of the whole nation. This cuſtom is derived from the conſtitution of the ancient Germans, who, in their great councils, ſometimes tried capital accuſations relating to the public: "licet apud concilium, accuſare quoque, et diſcrimen capitis intendere." Tacit. de Mor. Germ. 12. Blackſt. Com. vol. iv.

Impeachment *of Waſte*, a reſtraint from committing of waſte upon lands and tenements; or a demand of recompence for waſte made by a tenant who has but a limited eſtate in the land granted.

He that hath a leaſe without impeachment of waſte, hath by that a property or intereſt given him in the houſes and trees, and may make waſte in them without being called to an account for it. See Waste.

IMPECCABILES, in *Church Hiſtory*, a name given to thoſe heretics, who boaſted that they were impeccable, and that there was no need of repentance; ſuch were the Gnoſtics, Priſcillianiſts, &c.

IMPECCABILITY, the ſtate of a perſon who cannot ſin: or a grace, privilege, or principle which puts him out of a poſſibility of ſinning.

IMPEDIMENTS, in *Law*, are ſuch hindrances as put a ſtop or ſtay to a perſon's ſeeking for his right by a due courſe of law. Perſons under impediments are thoſe under age, or coverture, *non compos mentis*, in priſon, beyond ſea, &c. who, by a ſaving in our laws, have time to claim, and proſecute their rights, after the impediments are removed, in caſe of fines levied, &c.

Impediments *of Marriage*. See Marriage.

IMPEDIT, in *Law*. See Quare *Impedit*.

IMPENETRABILITY, a quality whereby a thing becomes unable to be pierced or penetrated; or a property of body whereby it fills up certain ſpaces, ſo that there is no room in them for any other body.

IMPENITENCE, or Impenitency, an hardneſs of heart, which makes a perſon perſevere in vice, and prevents his repentance.

IMPERATIVE, in *Grammar*, is one of the moods or manners of conjugating a verb, ſerving to expreſs a commandment; as *go*, *come*, &c. The imperative, according to biſhop Wilkins, is one of the primary modes or moods, the indicative being the other: by this the ſpeaker expreſſes his will to him that has the thing in his power; namely, to his ſuperior by petition, to his equal by perſuaſion, and to his inferior by command; and the manner in which theſe affect the copula (be it ſo, or let it be ſo) is called the imperative mood, of which there are theſe three varieties. Wilkins's Real Character, part iii c. 5. The ſame diſtinction is obſerved by Mr. Harris, who makes the imperative mood a ſpecies of the requiſitive when applied to inferiors; but when pertaining to equals, or ſuperiors, it is a precative or optative. Hermes, p. 144. ed. 2d. See Mood.

In Hebrew, and other oriental languages, the future tenſe has frequently an imperative ſignification.

IMPERATOR, among the *Romans*, a title of honour given to generals after a victory; firſt by the acclamations of the ſoldiers, and afterwards confirmed by the ſenate. See Emperor.

IMPERATORIA, in *Botany*, is ſuppoſed to have derived its name from its reputed imperial virtues in medicine, whence alſo it has obtained with our herbaliſts the appellation of "Maſterwort."—Linn. Gen. 143. Schreb. 193. Willd. Sp. Pl. v. 1. 1458. Mart. Mill. Dict. v. 2. Sm. Fl. Brit. 327. Ait. Hort. Kew. v. 1. 358. Juſſ. 220. Lamarck Dict. v. 3. 242. Illuſtr. t. 199. Gærtn. t. 21. —Claſs and order, *Pentandria Digynia*. Nat. Ord. *Umbellatæ*, Linn. *Umbelliferæ*, Juſſ.

Gen. Ch. *Cal.* Umbel univerſal flat-ſpreading; partial unequal. *Invol. univerſal* none; *partial* very ſlender, with one or two leaflets, almoſt as long as the umbel. *Perianth proper* obſolete. *Cor. univerſal* uniform; *florets* all fertile: *partial.* Petals five, inflex-emarginate, nearly equal. *Stam.* Filaments five, capillary; anthers roundiſh. *Piſt.* Germen inferior; ſtyles two, reflexed; ſtigmas obtuſe. *Peric.* none. Fruit roundiſh, compreſſed; gibboſe in the middle, margined. *Seeds* two, ovate, marked on one ſide with two furrows, ſurrounded by a broad margin.

Eſſ. Ch. General Involucrum none. Flowers all fertile. Petals inflexed, notched, nearly equal. Fruit roundiſh, compreſſed, bordered, ſwelling in the middle, with three ribs. Umbels flat.

1. I. *Aſtruthium.* Maſterwort.—Linn. Sp. Pl. 371. Engl. Bot. t. 1380. Woodv. Med. Bot. t 35.—Found by Mr. Lightfoot on the banks of the Clyde, and this is the only authority for its being added to the liſt of Britiſh plants.—It flowers in June.—*Root* perennial, tuberous, acrid and aromatic. *Stems* erect, about a foot and a half high, moſtly ſimple, round, ſtriated, ſmooth. *Leaves* twice ternate, ſmooth, acutely ſerrated and cut. *Umbels* terminal, of many rays, flattiſh, ſmooth. *Flowers* white or bluſh-coloured, regular. *Fruit* emarginate at the top and baſe, ſmooth.

Maſterwort has long been ſuppoſed a ſovereign remedy againſt poiſon. Gerarde ſays it is "alſo ſingular againſt all corrupt and naughty aire and infection of the peſtilence—cures peſtilential carbuncles and botches—cold fits of agues —dropſy—diſſolves all ventoſities or windineſſe of the ſtomache and other parts—and greatly helpeth ſuch as have taken great ſquats, bruiſes, or falls from ſome high place." This account of its virtues may lead us to ſuppoſe that this plant was conſidered by ancient botaniſts as the maſter-key of pharmacy.—At preſent it is occaſionally uſed as an aromatic, but is of courſe ſuperſeded by many plants which have that property in a ſuperior degree.

IMPERATRIX, a name given by ſome authors to the *Meum* or Spignel.

IMPERFECT Consonances, in *Muſic*. Sometimes the thirds and the ſixths are, though improperly, called imperfect conſonances, becauſe they are of two kinds, major and minor of each: while the fifth and fourth are ſaid by theſe writers to be perfect, becauſe they never change; which, however, is not correct, ſince there is the minor, falſe, or flat fifth, or ſemidiapente, and the major, falſe, or ſharp fourth, or tritone; and thus every note of the ſcale has its major and minor, as well as the thirds and ſixths. (See Interval.) Dr. Calleott recommends ſome further diſtinctions on this ſubject in his Muſical Grammar, art. 189, &c.

Imperfect *Chords*, or incomplete, are ſuch as do not include all their acceſſary ſounds.

Imperfect *Inſtruments*, are thoſe with a fixed number of notes or intervals in the octave, (leſs than 44, according to Maxwell,) as the common keyed-inſtruments with 12 ſounds, flutes, oboes, baſſoons, &c. and, in general, all ſuch whereon the performer has it not in his power to vary his ſounds, ſo as to produce perfect chords with other notes ſtruck or ſounded at the ſame time, a thing impoſſible throughout the 12 keys major and 12 minor, on any inſtrument which cannot command 44 different ſounds within the octave, according to Mr. Maxwell, or 60 at the leaſt, according to Mr. Henry Liſton. The imperfect inſtruments in common uſe, are incapable of executing any tempered ſyſtem of intervals except the iſſotonic, or equal temperament, ſo that every key therein ſhall be alike harmonious, becauſe wolves, bearing-notes, or intervals very different to what they are intended to be muſt occur, or be ſubſtituted for the proper ones, unleſs 21 ſounds at leaſt can be introduced into the octave, as was done by Dr. R. Smith on his harpſichords, or 24 notes, as is done on Mr. D'Loeſchman's patent pianofortes and organs for harmonizing 33 keys: we have already, under the article HAWKE's *Temperament*, pointed out the impoſſibility of the 17 notes on that gentleman's patent inſtruments performing without wolves in more than 23 keys, while ſome of them are not the moſt uſual, or thoſe which firſt ariſe in the regular order of modulation: all theſe of 12, 14, at the Temple, 16 at the Foundling organ, 17, 21 and 24 notes, are imperfect inſtruments, and incapable of yielding perfect or untempered harmony in any piece of muſic. See PERFECT INSTRUMENTS.

IMPERFECT *Intervals*, are ſuch as have not a ratio expreſſible in ſmall or whole numbers: thus $\frac{3}{4}$, or the fourth, is a perfect interval, but $\frac{3\cdot 2}{4\cdot 3}$, or $\frac{32}{43}$, is not a perfect interval; but the falſe, or trumpet fourth, $\frac{3\cdot 2}{4\cdot 5}$, or $\frac{32}{45}$, is alſo an imperfect interval, the tritone. The tempered intervals, adapted to imperfect inſtruments, are imperfect intervals, whether ſuch deviate one or more of ſome ſmall interval from perfection, as $\frac{243}{320}$ the comma deficient fourth, $\frac{2187}{3200}$ the double comma deficient fifth, $\frac{16384}{19683}$ the ſchiſma-exceſſive minor third, &c.; or deviate any fractional part or parts of a ſmall interval from perfection, as $1 \div \sqrt[4]{5}$ a fifth flattened, $\frac{1}{4}$th of the major comma for the mean tone temperament, $\sqrt[3]{\tfrac{3}{10}}$ a fifth flattened $\frac{1}{3}$d of the major comma for a ſyſtem with perfect major ſixths, &c.

IMPERFECT *Plants*, among *Botaniſts*, are ſuch as either really want flower and ſeed, or are ſuppoſed to want them; no flower or ſeed having been diſcovered in the greater part of thoſe plants included in this claſs by the botanical writers, at the time when they were thus denominated. See PLANTS.

IMPERFECT *Mixts*. See MIXT.

IMPERFECT *Numbers*, in *Arithmetic*. See NUMBERS.

IMPERFECT *Tenſe*, in *Grammar*, ſignifies an indefinite time between the preſent and the paſt; as, *I taught*, *I heard*. The imperfect was ſometimes employed by the ancients to denote what is uſual and cuſtomary: thus *ſurgebat* and *ſcribebat* ſignify not only *he* WAS *riſing*, *he* WAS *writing*, but upon occaſion they ſignify, *he* USED *to riſe*, *he* USED *to write*. The reaſon of this is, that whatever is cuſtomary, muſt be ſomething which has been frequently repeated; but what has been frequently repeated muſt require an extenſion of time paſt. It was alſo uſed by the ancients, in which they have been followed by the moderns, in a ſuſpenſive kind of inſcription; as Απελλης εποιει, *Apelles faciebat*, but not εποιησε, or *fecit*; by which uſe of the imperfect they avoided the ſhew of ignorance, and had prepared an apology in caſe of cenſure, by ſaying that the work was *once indeed in hand*, without pretending that *it was ever finiſhed*. Harris's Hermes, p. 136, &c. See TENSE.

IMPERFETTO, *Ital.* imperfect. See INTERVAL.

IMPERFORATE ANUS. It ſometimes happens, that infants are born with the anus imperforate, and when the defect is not ſoon diſcovered, and ſome endeavour made to obviate it, the conſequences are, in a ſhort time, almoſt invariably fatal. The afflicted infant is reſtleſs, cries much, and ſuffers a frequent and diſtreſſing inclination to empty the rectum. In the fits of ſuffering, the child's face ſwells, and its eyes become red, and more or leſs protruded from their ſockets. At length the belly is affected with a general ſwelling and tenderneſs, and death takes place in four or five days, either from the inflammatory and gangrenous miſchief within the abdomen, or from the convulſions excited. It is a very curious circumſtance, however, that there are caſes on record, where children have lived ſeveral weeks, and even years, with an imperforate anus, the excrement having been diſcharged all ſuch time by the mouth. (See Journal de Medécine, ann. 1770, p. 510, and tom. 8. p. 60.) Such inſtances, indeed, are exceedingly uncommon; but they are important, inaſmuch as they tend to evince, that the operation uſually performed for the relief of an imperforate anus, may be attempted, even at a late period, with a conſiderable chance of ſucceſs. When an infant labours under the above-mentioned complaints, and the meconium does not come away, the practitioner is naturally led to examine the appearance of the anus, and thus the nature of the caſe is detected.

There are various kinds of imperforate anus. Sometimes the termination of the rectum is ſhut up by a preternatural membrane, or thin portion of ſkin. This is the moſt common, and, at the ſame time, the moſt favourable caſe, both the diagnoſis and treatment being free from all difficulty. The membrane, ſhutting up the anus, is plainly viſible to the practitioner immediately upon his making the requiſite examination, and, occaſionally, it is ſo diſtended with the confined feces, that it projects from the anus in the form of a pouch or ſac. Here the proper method is to divide the membrane with a biſtoury, and if the part compoſing the obſtruction is thick, the inciſion may be made in a crucial ſhape, and four angles, or flaps, cut away with the knife or ſciſſors. Dreſſings and bandages are not required after the operation, the exit of the excrement and air prevents a cloſure of the opening; and it ſeldom happens that any ſymptoms ariſe deſerving particular notice.

Sometimes the lower end of the rectum is properly formed and open; but the inteſtine is inwardly cloſed at a greater or leſſer diſtance above the anus. Such imperviouſneſs is alſo occaſionally produced by a preternatural membrane; though, in ſome caſes, it is the effect of an adheſion of the ſides of the bowel together, there being, in fact, a total obliteration of the cavity of the inteſtine at the part which is impervious. When the obſtruction happens to be ſituated a very little above the anus, it may eaſily be felt by the finger; but when it occurs ſo high up, that the finger cannot reach it, the caſe may be ſet down as irremediable. That a part of the rectum is impervious, may be inferred from the infant's having no ſtools, and from the immediate diſcharge of clyſters, whenever given to promote the paſſage of the excrement. In this circumſtance, how can we venture to introduce any inſtrument, with a deſign of perforating the obſtruction, without having the guidance of the finger, and without being able to know whether we are piercing the part compoſing the obſtruction, or wounding the ſide of the bowel? Whether, in ſo hopeleſs a caſe, it is proper to attempt the formation of an artificial anus, will be preſently conſidered.

When the obſtruction can be felt with the finger an operation is admiſſible, and it may be moſt conveniently performed with the pharyngotomus introduced on the finger. A large curved trocar might alſo anſwer the purpoſe; but the operation is neither free from difficulty nor danger. In the event of the part of the inteſtine above the obſtruction being greatly diſtended with feces, a kind of fluctuation is ſometimes not only perceptible above the impervious place, but likewiſe through the coats of the bowel at the circumference of the obſtruction; and in this caſe it is often exceedingly difficult to diſtinguiſh the exact ſituation into which the inſtrument ought to be puſhed, ſo as to form a communication between the upper and lower portion of the inteſtine. Should the puncture be made in a wrong direction, the ſide of the bowel would be wounded, and a fatal extravaſation of its contents into the pelvis be the conſequence. A miſtake of this ſort would be the moſt difficult to avoid, were the inteſtines cloſed by a membrane of a thickiſh firm texture; for then the fluctuation of the fecal matter would be leſs plain, juſt in the ſituation of the obſtruction, than at the circumference. On the other hand, when the membrane, rendering the bowel impervious, is very thin, the fluctuation of the inteſtinal matter may be eaſily felt through it, and the practitioner has leſs difficulty in determining where the perforation ought to be made. When the imperviouſneſs of the bowel is the effect of an accretion of its ſides together, and the inteſtinal canal is quite annihilated at the part, the fluctuation of the inteſtinal matter is leſs plain in the ſituation of the obſtruction than at the ſides of it, and indeed may be quite imperceptible. In all ſuch caſes the operation cannot fail to be attended with conſiderable peril, as every thing depends upon the direction in which the inſtrument is introduced, which direction ſhould be ſuch as will open a communication between the upper and lower portions of the inteſtine, and can only be aſcertained with difficulty. When the membrane that has been pierced is thin, no particular dreſſings are needed after the operation, the opening being more likely to be widened by the paſſage of the inteſtinal contents than to cloſe again; but if the puncture has been made through a thick ſubſtance, ſurgical authors recommend a tent, or piece of a thick bougie, to be occaſionally worn for ſome time after the operation, in order to prevent the opening from becoming ſhut up again.

In certain examples not the ſlighteſt appearance nor veſtige of an anus can be diſcovered, the rectum terminating in a cul-de-ſac. Here the operation is attended with ſeveral difficulties, and the event is therefore generally fatal. The greater or leſſer diſtance of the cul-de-ſac extremity of the rectum from the external integuments, however, is a circumſtance making a material difference in the degree of hazard. The practitioner cannot aſcertain this point unleſs the contents of the bowel happen to lie ſo near the ſkin as to communicate to the fingers of an examiner the feel of fluctuation. When this is the caſe the operation is eaſy of performance, and the conſequences for the moſt part ſucceſsful. The further the inteſtine is ſituated from the integuments, the ſmaller is the chance of being able to ſave the infant's life. When the end of the bowel lies very high up it may be impoſſible to reach and open it with a cutting inſtrument. Sometimes the rectum is entirely wanting, and the colon terminates in a cul-de-ſac.

A more favourable caſe is met with where nature indicates the place in which the opening of the anus ought to be, by a red depreſſion, ſmall folds and wrinkles, or ſome ſuch appearance. But, in many inſtances, the part is every where ſo even and uniform, that there is nothing to point out where the inciſion ought to be made. Here the knowledge of anatomy is the only light to the practitioner. He makes the firſt cut through the ſkin, between the os coccygis and the beginning of the raphe of the perineum. He is to recollect, however, that in new-born infants the lower end of the rectum is not ſo cloſe to the os coccygis as in adult ſubjects. An interſpace, of nearly an inch, ought therefore to be left between the point of this bone and the poſterior extremity of the inciſion. In male infants it is as well to introduce a catheter into the bladder before the operation. By this means the ſurgeon will not only be enabled to determine with greater preciſion the place of the firſt inciſion, but alſo to avoid the urethra as the wound is gradually made deeper. Surgical writers think it advantageous to make a crucial inciſion in the ſkin and ſubjacent cellular ſubſtance.

The firſt wound is to be gradually rendered deeper, care being taken to direct each ſtroke of the knife with the forefinger of the left hand. The principal objects in view are to avoid the urethra and bladder, and find out the end of the rectum. An injury of the urethra may eaſily be avoided, when care is taken to introduce a catheter before the operation, and to feel the inſtrument repeatedly with the left hand during the employment of the knife. Sometimes the rectum is ſo diſtended with its contents as to preſs upon the neck of the bladder, and occaſion a retention of urine. Here the dilated bladder might eaſily be wounded, were the ſurgeon, before the operation, to neglect to introduce a catheter, and draw off the urine. The ſurgeon is occaſionally directed to the cul-de-ſac termination of the bowel by the fluctuation of the accumulated feces; ſometimes by a certain hardneſs which he perceives at the bottom of the wound, and which is produced by the ſphincter muſcle in a ſtate of contraction. When there are no marks of this kind to guide him, nothing will be of any uſe to him except anatomical knowledge, and the rule always to incline the inciſion towards the os ſacrum, where no important parts can be injured, inſtead of forwards, where the bladder, or vagina, is ſituated.

At length, the ſurgeon either ſucceeds in finding out the end of the inteſtine, or elſe his endeavours prove ineffectual, although the wound has already been carried to a reaſonable depth. When the extremity of the bowel is found, the infant is indeed relieved for the preſent, but it is far from being out of danger. Experience proves that the majority of children die after this operation. The cauſes of this fact may be various; but, probably, it often happens that the ſide of the inteſtine is cut, and that an extraſation of the inteſtinal matter in the pelvis enſues. In the event of the bowel being found, the ſurgeon can do nothing more than make as capacious an opening in it as can be done with ſafety, promote the evacuation of the feces by gentle aperients, and place a tent in the wound in order to keep the new outlet pervious. The tent is always productive of irritation and pain, and conſequently it ſhould conſtantly be as ſoft and flexible as poſſible. A flexible tube is by no means an eligible inſtrument for introduction; for, if it ſhould be too ſmall, the ſtools would not paſs through it; and, if too large, it would give riſe to pain and inflammation. Even when the operation is followed by favourable conſequences, an involuntary diſcharge of the feces frequently continues. Caſes, however, do occur where the cure is in every reſpect perfect, the infant emptying its bowels naturally, and under the controul of the will.

When the ſurgeon has carried the inciſion to a conſiderable depth, and cannot meet with the bowel, ought he to venture to cut ſtill more deeply? The attempt, it muſt be confeſſed, is attended with ſome danger, and is uncertain in its conſequences; but as death is inevitable if no outlet for the feces can be procured, circumſtances ſeem to juſtify ſuch an endeavour to preſerve the child. The occaſional ſucceſs, alſo, which has attended the proceeding, further corroborates its propriety. After extending the inciſion to the depth of two inches, without finding the inteſtine, a trocar, introduced an inch more deeply, has ſucceſsfully opened the bowel. If, in ſuch a caſe, the ſurgeon were to uſe a trocar, with a ſlit cannula, the puncture might be immediately dilated with a biſtoury paſſed into the tube.

When the rectum cannot be found and opened in the foregoing manner, Littre has propoſed making an opening into the abdomen near the left groin, dividing the ſigmoid flexure of the colon, attaching the opened portion to the external wound, and thus eſtabliſhing an artificial anus. This operation has not only been found very practicable upon the dead ſubject, but has actually been performed by Sabatier, Lehrbuch, &c. upon living infants with the happieſt conſequences. It is not to be diſſembled, however, that the event is exceedingly doubtful, eſpecially as the practitioner can never know beforehand how far the large inteſtines may be cloſed, or where the cul-de-ſac extremity lies; but, upon the whole, the operation certainly appears to be warrantable, not merely on account of the hopeleſs condition of the infant, but becauſe the attempt has unqueſtionably been known to ſucceed.

Calliſen has propoſed ſearching for the deſcending colon in the region of the loins. For this purpoſe he recommends an inciſion to be made on the left ſide of the ſpine, between the falſe ribs and the criſta of the os ilium, upon the front edge of the quadratus lumborum muſcle. It muſt be acknowledged, that in this ſituation there is more chance of finding the inteſtinal canal pervious; and that here an apparatus for leſſening the inconveniencies of an artificial anus admits of being more conveniently applied. But, all things conſidered, this operation is liable to more objections than the method propoſed by M. Littre, which has likewiſe the important recommendation of having already proved ſucceſsful.

Sometimes, beſides the anus being imperforate, the large inteſtine has a preternatural opening into the urethra, or bladder. In female infants ſuch a malformation is leſs pernicious in its conſequences than in male children. In the former the meatus urinarius is ſhort and dilatable, and the feces find a ready outlet; in the latter death uſually enſues, unleſs an opening be ſpeedily made for the paſſage of the excrement in the natural ſituation of the anus. Even when this has been executed, all the danger is not over; for it does not follow, as a matter of courſe, that the preternatural opening in the gut will cloſe, becauſe a new outlet has been formed. However, there are caſes on record proving that this beneficial change may happen. Sometimes the preternatural opening in the inteſtinal canal is ſituated in the vagina or at the navel, in which circumſtances external means may be employed to promote the cloſure. There are likewiſe caſes recorded by writers, where women have diſcharged their feces, during the whole of their lives, through the vagina, or bladder.

In certain inſtances the anus is not cloſed, but only very ſmall. This ſtate is ſometimes an original malformation. In other examples it ariſes after birth from a variety of cauſes, as after the operation for the fiſtula in ano, &c. The caſe may be cured, or at leaſt relieved, by dilating the opening on each ſide with a biſtoury, and employing tents.

Perhaps the moſt important caſe of impervious rectum is that which proceeds from a ſcirrhous induration and thickening of the coats of that inteſtine. Such diſeaſe is moſtly ſeen in perſons rather advanced in life, and more frequently in women than men. It ordinarily begins in a ſlow and inſidious manner, producing at firſt ſeveral complaints, which are apt to be imputed to other cauſes, eſpecially to piles. The caſe in the early ſtage is, therefore, in general not much underſtood. The patient feels an inclination to go to ſtool; but he voids little, and what comes away paſſes with great difficulty. He uſually ſuffers ſhooting pains about the rectum; and the agony is often ſo ſevere, particularly when the patient is at ſtool, as to induce fainting. The excrement which comes away is remarkably thin. As the diſeaſe advances, the rectum at length becomes quite impervious, and a miſerere then comes on, which commonly proves fatal, as a free paſſage for the feces can ſeldom be procured again with ſufficient celerity. The induration occaſionally ulcerates, and the neighbouring parts are deſtroyed in various ways.

The diſeaſe may be detected by proper examination, in which the rectum will be found to be hard and contracted. Sometimes, on its inner ſurface, hard lumps and furrows can be felt. The more ancient and conſiderable the hardneſs is, the more difficult is the cure. The colon is liable to be thus rendered impervious, in which circumſtance the caſe is fatal. (See Mem. of the Med. Society of London, vol. ii.) The coats of the rectum have been found an inch thick, and quite cartilaginous.

Tents are the principal means of relieving the ſcirrho-contracted rectum, juſt in the ſame manner as bougies are calculated for the cure of ſtrictures in the urethra. Large bougies, made for the purpoſe, might alſo anſwer beſt for the dilatation of the rectum. But whatever inſtrument is uſed, its ſize muſt be gradually augmented. The paſſage of the ſtools is every day to be facilitated with clyſters. Several kinds of medicines have been tried internally, as cicuta, mercury, burntſponge, &c. Deſault found the mineral alkali very efficacious, ſo much ſo, that he ſometimes effected a complete cure in the ſpace of from three to ſix months, even though the diſeaſe had fallen into the ulcerated ſtate. The medicine, however, muſt always be continued, till the diſeaſe is entirely removed; for when the treatment is diſcontinued too ſoon, the diſorder is apt to recur. Sometimes it is neceſſary to uſe the knife, that is, when an indurated tranſverſe fold is formed in the rectum, ſo as both to hinder the paſſage of the excrement, and the introduction of the tent or bougie. Richter's Anfangſgründe der Wundarzneykunſt, Band 6. Kapitel 19.

IMPERFORATE *Hymen*. See VAGINA *Imperforate*.

IMPERFORATE *Iris*. See PUPIL, *Cloſure of*.

IMPERFORATE *Meatus Auditorius*. See MEATUS *Auditorius*.

IMPERIAL, ſomething belonging to an emperor, or empire.

Thus we ſay, his imperial majeſty, the imperial crown, imperial medals, the imperial chamber.

IMPERIAL *Cities*, in Germany, are thoſe which own no other head but the emperor.

Theſe are a kind of little commonwealths; the chief magiſtrate whereof does homage to the emperor, and pays him the Roman month; but in other reſpects, and in the adminiſtration of juſtice, the magiſtrate is ſovereign. The imperial cities have a right of coining money, and of keeping forces, and fortified places: their deputies aſſiſt at the imperial diets, where they are divided into two branches; that of the Rhine, and that of Suabia. There were formerly twenty-two in the former, and thirty-ſeven in the latter; but there are now only forty-nine in all; thirteen belonging to the former, and thirty-ſix to the latter.

Imperial *Diet*, is an aſſembly or convention of all the ſtates of the empire. See Diet.

Imperial *Table*, in *Surveying*, an inſtrument made of braſs, with a box and needle, ſtaff, &c. uſed in meaſuring land.

IMPERIALE, in *Geography*, a town of Chili, ſituated on a river which runs into the Pacific ocean; deſtroyed by the Indians; 60 miles N. of Valdivia.

IMPERII Recessus. See Recessus *Imperii*.

IMPERSONAL Verb, in *Grammar*, is ſuch an one, as is only uſed in the third perſon ſingular; as *oportet*, *licet*, &c. Every verb, ſays the ingenious Mr. Harris, whether active or paſſive, has in language a neceſſary reference to ſome noun for its nominative caſe; and the doctrine of imperſonal verbs has been juſtly rejected by the beſt grammarians, both ancient and modern. Hermes, p. 175.

IMPERVIOUS, a thing not to be pervaded, or paſſed through; either by reaſon of the cloſeneſs of its pores, or the particular configuration of its parts.

IMPETIGO, in *Medicine*, a term which has been employed in many indefinite ſignifications by writers in the Latin language. Pliny uſes it as ſynonymous with the *Lichen* of the Greeks (Nat. Hiſt. lib. xx. cap. 1.), in which he is followed by the majority; he is, however, inconſiſtent with himſelf, ſince, on other occaſions, he employs the term to expreſs other diſeaſes. The definition which Celſus gives of *Impetigo*, does not in any reſpect correſpond with the deſcription of the *Lichenes* given by the Greeks: he includes theſe diſtinctly and correctly under the head of *Papula;* and his *Impetigo*, as Sennertus remarks, is the *Lepra* of the Greeks (Celſ. de Medicinâ, lib. v. cap. 28. Sennert. Med. Pract. lib. v. cap. 30. Willan on Cutaneous Diſeaſes, part i. p. 38.) Sauvages and Cullen have adopted the term *impetigo* for the title of one of the orders in their reſpective ſyſtems of noſology, in the claſſes of *Cachexiæ*. The *Impetigines*, in Dr. Cullen's ſyſtem, include thoſe ſpecies of cachectic diſeaſes, which particularly diſcolour and deform the ſkin and external parts of the body; namely, ſcrofula, ſyphilis, ſcurvy, elephantiaſis, leproſy, jaundice, &c. (Claſs IV. Ord. III.) The *Impetigines* of Sauvages include only thoſe chronic and commonly contagious diſeaſes which are accompanied by cluſtered ſwellings, ulcerations, cruſts, &c.; *viz.* ſyphilis, ſcurvy, elephantiaſis, lepra, ſcabies, and tinea. Claſs X. Ord. V.

Dr. Willan confines the uſe of the term *impetigo*, as a genus to a *puſtular* eruption, commonly occurring in patches, and diſcharging a fluid, which, under one or two of its varieties, forms cruſts or ſcabs on the ſurface; the running tetter of authors. But as the part of his treatiſe of cutaneous diſeaſes, which will contain the deſcription of impetigo, is not yet publiſhed, we are unable to enter farther into his views of the ſubject at preſent.

IMPETRATION, the act of obtaining any thing by requeſt or prayer.

Impetration was more particularly uſed in our ſtatutes for the pre-obtaining of benefices and church offices in England from the court of Rome, which did belong to the diſpoſal of the king, and other lay patrons of the realm; the penalty whereof is the ſame with that of proviſors, 25 E. III. See Provisor.

IMPETUS, in *Mechanics*. See Force, Momentum, and Motion.

Impetus, *Paracentric*. See Paracentric.

IMPEY's Island, in *Geography*, a ſmall iſland in the Mergui Archipelago. N. lat. 10° 22′.

IMPEZZATO, *Ital.* See Epais and Spissus.

IMPING, in *Falconry*, the inſerting a feather in the wing of a hawk, in the place of one that is broken.

IMPIRA, in *Geography*, a town of South America, in the province of Cordova; 90 miles S. of Cordova.

IMPLANTATION. See Transplantation.

IMPLEAD, to ſue, or proſecute by courſe of law. See Pleading.

IMPLEMENTS, formed either from the Latin, *implere*, *to fill up;* or from the French, *imployer*, *to employ;* is uſed for all things neceſſary for a trade, or the furniture of a houſehold.

In this ſenſe we frequently find it uſed in wills, and conveyances of moveables.

IMPLEMENT, in *Agriculture*, a term applied to any ſort of tool or inſtrument by which any kind of work is executed.

Implements *of Huſbandry*, the ſeveral different kinds of tools or machinery by which the various ſorts of labour and operations of the art are performed. They conſiſt principally of ſpades, ploughs, harrows, drags, drills, hoes, mills, carts, waggons, &c. See theſe different heads.

In the formation and conſtruction of all ſorts of tools and machinery for the uſes of the farmer, the principal aim ſhould be that of rendering the work they are to perform more cheap, eaſy, expeditious, and complete, by having them perfectly ſuited to the operations for which they are intended, and at the ſame time not too weighty, while they poſſeſs ſufficient degrees of ſtrength for the different purpoſes to which they may be applied. It is conceived by a late writer on rural affairs, that there is probably no ſort of implements that admits of greater improvement than thoſe employed in huſbandry, on the principle of leſſening weight, without materially diminiſhing the ſtrength. It is ſtrongly obſerved, that "every one knows that, if a beam of any length be made of equal thickneſs throughout its whole length, and a weight ſufficient laid upon it, it will inevitably break in the middle, and never at either of the ends; yet, unleſs it be in the poles of a ſedan chair, an inſtance can ſcarcely be recollected, in which weight has been diminiſhed on this principle. On the contrary, it is not at all unuſual, in the conſtruction of ſuch implements, to ſee the thickneſs diminiſhed nearly one-half at the very weakeſt place, by means of a mortiſe cut out of it there, while its thickneſs in other parts is four times greater than would enable it to bear an equal burden. No attention is paid in placing the wood in that poſition wherein it would be beſt able to reſiſt the preſſure to which it muſt neceſſarily be ſubjected; although it is very well known that the ſame quantity of materials may be made to bear in one poſition above ten times as much as it could do in another. It is well known that mortiſes weaken the wood to an aſtoniſhing degree when they are injudiciouſly placed; yet it is no uncommon thing to ſee two croſs-mortiſes, each of them twice the ſize that in any caſe could have been neceſſary, made through a beam, perhaps at the very weakeſt part of it, juſt as accident may direct, without even ſo much as an attempt to vary their poſition, far leſs to wholly avoid them, which in many caſes might be effected without the leaſt inconvenience or impropriety.

It is well underſtood, that a ſmall brace, judiciouſly made uſe of, may greatly augment the ſtrength without adding to the weight of an implement; yet contrivances of this nature, which are obvious to the mereſt tyro in mechanics, ſeem to be totally diſregarded: far leſs do the conſtructors of ſuch tools think of adopting new devices of this deſcription, which a very moderate degree of ingenuity would readily point out. The importance and advantages of having every part firm and compact in a tool which is to be ſubjected to jolting and ſhaking, are univerſally recognized; yet, from the moſt trifling conſiderations, this principle may be ſeen departed from, and loads of ſuperfluous materials added in vain to ſupply the defects that are in this way produced. And theſe remarks do not apply to one ſet or ſort of implements only, but almoſt to every common tool or machine that is employed in the art of huſbandry.

It is obvious, that theſe principles and circumſtances, however evident in themſelves, have not only been little attended to by the cultivators of the ſoil, but in a great meaſure overlooked by thoſe who have been chiefly engaged in the making of tools of this deſcription. It can ſcarcely have eſcaped obſervation that, in moſt of the diſtricts of the country, though numerous uſeful tools and machines have been lately invented and improved, there are ſtill various kinds to be met with, which are not only extremely inconvenient from their clumſineſs, but employed with great diſadvantage in conſequence of their heavineſs. A difference, however, in regard to ſtrength, as well as other objects, becomes neceſſary ſometimes from the nature of the ſituation and other circumſtances, and by theſe the mechaniſt muſt frequently be directed in conſtructing theſe ſorts of tools. And as implements of this kind are generally made uſe of by labourers who have but little knowledge of the nature, power, and operation of them, they ſhould conſtantly be conſtructed on the moſt obvious and ſimple principles, as well as in ſuch modes, and of ſuch materials, as that they may be afforded at an eaſy rate; as where they are charged at a high price, it muſt of neceſſity operate greatly againſt their introduction into general uſe.

The deſcriptions of the ſeveral different implements and machines that are capable of being employed with advantage in the various departments of agriculture, may be ſeen under the different heads to which they properly belong.

IMPLEX Action. See Action.

IMPLICATION, in *Law*, is where the law doth imply ſomething that is not declared between parties in their deeds and agreement; and when our law giveth any thing to a man, it giveth implicitly whatever is neceſſary for the enjoying the ſame. The want of words may be helped in ſome caſes by implication; and ſo one word or thing, or one eſtate given, ſhall be implied by another: and there is an implication in wills and deviſes of land, whereby eſtates are gained.

IMPLICIT, derived from *in*, and *plico*, *I fold*; ſomething tacitly comprized, or underſtood: that is, contained in a diſcourſe, clauſe, or propoſition, not in expreſs terms, but only by induction and conſequence.

Implicit *Faith*. See Faith.

IMPLIED *Condition*, *Contract*, *Malice*, and *Warranty*. See the ſubſtantives.

Implied *Sound*, in *Muſic*, is a term uſed by Mr. Holder in his "Eſſay towards a rational Syſtem of Muſic," p. 350. 362. 370, &c., to expreſs what he thought to be the grave harmonic of certain ſounds, but owing to a falſe rule by which he calculated, many of theſe are no ſuch things as the Tartinian ſounds he ſuppoſed them to be, and many parts of the fanciful theory which he raiſes therefrom, are, as might be expected, at variance with all eſtabliſhed facts and rules in harmonics. See our article Grave *Harmonic* and Holder's *Temperament* of the muſical ſcale.

IMPLY *a contradiction*, a phraſe uſed among philoſophers in ſpeaking of the object of divine omnipotence.

God can do every thing that does not imply a contradiction proceeding from God: by which is not meant a relation of the action to the executive power of God, but a relation to the other attributes and ſimple perfections of God.

IMPONDERABLE Substances, in *Chemiſtry* Inſtead of conſidering repulſion as a general agency or force, philoſophers, finding that the cauſe producing it is capable of being communicated from one body to another, and that ſome of the phenomena of its tranſition indicate it to be a diſtinct principle, have been diſpoſed to regard it as a peculiar ſubtle kind of matter, the ſame with that to which the phenomena of heat have been referred, and which, in the modern chemical nomenclature, has been denominated *Caloric*, which ſee. Though the materiality of this power has not been demonſtrated, the ſuppoſition has much probability, and accords nearly with the phenomena. It may be regarded as the cauſe of repulſion, whatever be the nature of this power, whether it be regarded as a quality of bodies, a general force, or a diſtinct kind of matter; the ſame principle which produces the phenomena of heat is undoubtedly that which counteracts the attractions exerted between the particles of bodies. The connection of light and heat has led to the opinion of their identity; it is well aſcertained that the particles of light are mutually repellent. From heat and light there is a natural tranſition to the agent which gives riſe to the phenomena of *Electricity* and *Galvaniſm*, which ſee. They all poſſeſs one common character, which is that of not being ſubject to the attraction of gravitation, or at leaſt their gravity is incapable of being appreciated: hence they are diſtinguiſhed by the name of "imponderable ſubſtances." They poſſeſs the greateſt ſubtilty or tenuity: we cannot eaſily inſulate or obtain them in a ſeparate ſtate of exiſtence: they are obſerved only in ſtates of combination, or in their rapid tranſition from one body to another: we can ſcarcely meaſure their force, and we are unable to trace their particular combinations, or conſider them as eſſential conſtituent principles of any compound.

IMPORTANCE *of Action*, in *Poetry*. See Action.

IMPORTATION, the act of importing or bringing merchandize from foreign countries, in contradiſtinction to exportation.

IMPOSITION *of Hands*, an eccleſiaſtical action, by which a biſhop lays his hands on the head of a perſon, in ordination, confirmation, or in uttering a bleſſing. This practice is alſo frequently obſerved by the Diſſenters at the ordination of their miniſters, when all the miniſters preſent place their hands on the head of him whom they are ordaining, while one of them prays for a bleſſing on him and his future labours. This ſome of them retain as an ancient practice, juſtified by the example of the apoſtles, when no extraordinary gifts were conveyed. However, they are not agreed as to the propriety of this ceremony; nor do they conſider it as an eſſential part of ordination.

Impoſition of hands was a Jewiſh ceremony, introduced, not by any divine authority, but by cuſtom: it being the practice among thoſe people, whenever they prayed to God for any perſon, to lay their hands on his head.

Our Saviour obſerved the ſame cuſtom, both when he conferred his bleſſing on children, and when he cured the ſick; adding prayer to the ceremony. The apoſtles likewiſe laid hands on thoſe upon whom they beſtowed the Holy Ghoſt. The prieſts obſerved the ſame cuſtom when any one was received into their body. And the apoſtles themſelves underwent the impoſition of hands afreſh, every time they entered upon any new deſign. In the ancient church, impoſition of hands was even practiſed on perſons when they married; which cuſtom the Abyſſinians ſtill obſerve.

But this term, which, in its original ſignification, is general, is now reſtrained, by cuſtom, to that impoſition which is practiſed at ordination. Spanheim has written a treatiſe "De Impoſitione Manuum;" and Tribenhorius and Braunius have done the ſame. See Ordination.

IMPOSITION *of Tonnage*, &c. See DUTY, &c.

IMPOSSIBLE, that which is not poſſible, or which cannot be done or effected. A propoſition is ſaid to be impoſſible when it contains two ideas which mutually deſtroy each other, and which can neither be conceived, nor united together in the mind.

Thus it is impoſſible, that a circle ſhould be a ſquare; becauſe we conceive clearly, that ſquareneſs and roundneſs deſtroy each other by the contrariety of their figure.

There are two kinds of impoſſibilities, *phyſical* and *moral*. Thus,

Phyſical impoſſibility, is that which is contrary to the laws of nature. A thing is *morally* impoſſible, when of its own nature it is poſſible, but yet is attended with ſuch difficulties, as that, all things conſidered, it appears impoſſible.

Thus it is morally impoſſible, that all men ſhould be virtuous; or that a man ſhould throw the ſame number with three dice a hundred times ſucceſſively.

A thing which is impoſſible in law, is the ſame with a thing impoſſible in nature: and if any thing in a bond or deed be impoſſible to be done, ſuch deed, &c. is void. 21 Car. I. B. R.

IMPOSSIBLE *Condition*, in *Law*. See CONDITION.

IMPOSSIBLE *Forms of Equations*, in the *Indeterminate Analyſis*, are thoſe that will admit of no rational ſolution, ſuch as $2x^2 \pm 3y^2 = z^2$; $3x^3 \pm 7y^3 = z^3$; $3x^4 \pm 7y^4 = z^4$; &c. which are all impoſſible forms of equations; admitting of no ſolution, either in integers or fractions.

The inveſtigation of theſe impoſſible forms does not ſeem to have engaged the attention of Diophantus; but his tranſlators and commentators, as Bachet, Fermat, Father de Billy, &c. have all been led to the conſideration of them, as the means of ſaving much unneceſſary labour, by being able to ſhew in many caſes, before any operation takes place, that the equation under conſideration admits of no ſolution.

The moſt general method of determining impoſſible forms is by means of the linear forms of ſquares, cubes, &c.

Thus all ſquare numbers are of one of the two forms $4n$, or $4n + 1$; *viz.* all ſquare numbers are either exactly diviſible by 4, or when divided by it as far as poſſible, they will leave a remainder 1; and therefore no numbers of the forms $4n + 2$, or $4n + 3$, can be ſquares; or $4n + 2$ and $4n + 3$ are impoſſible forms for ſquare numbers. In the ſame manner, all ſquare numbers are of one of the forms $5n$, or $5n \pm 1$; that is, ſquare numbers, when divided by 5, can only leave the three remainders 0, 1, and -1; or, which is the ſame, 0, 1, and 4; and therefore $5n + 2$, and $5n + 3$, are impoſſible forms for ſquares. Again, all ſquare numbers are of one of the forms $7n$, $7n + 1$, $7n + 4$, or $7n + 2$; and therefore $7n + 3$, $7n + 5$, $7n + 6$, are all impoſſible forms. And thus is conſtructed the following table of the poſſible and impoſſible forms of ſquares to the prime moduli 2, 3, 5, 7, and 11.

Poſſible Forms.	Impoſſible Forms.
$2n$, $2n + 1$	
$3n$, $3n + 1$	$3n + 2$
$5n$, $5n \pm 1$	$5n + 2$, $5n + 3$
$7n$, $7n + 1$, $7n + 2$, $7n + 4$	$7n + 3$, $7n + 5$, $7n + 6$
$11n$, $11n + 1$, $11n + 4$, $11n + 5$ $11n + 9$, $11n + 3$	$11n + 2$, $11n + 6$, $11n + 7$ $11n + 8$, $11n + 10$

Now by means of theſe linear forms, we readily obtain thoſe of the quadratic forms, ſuch as $2x^2 \pm 3y^2 = z^2$; which is demonſtrated to be impoſſible, as follows.

Firſt, the three indeterminates x, y, and z, may be conſidered as being prime to each other, for if they have any common meaſure, as $x = \phi x'$, $y = \phi y'$, and $z = \phi z'$, the whole equation may be divided by that common meaſure, and thus reduced to another, in which the indeterminates are prime to each other; and therefore if an equation be poſſible, when the terms have a common meaſure, it is alſo poſſible when divided by it, and converſely if an equation be impoſſible when the terms are prime to each other, it is alſo impoſſible in all other caſes. Aſſuming therefore, that in the equation $2x^2 \pm 3y^2 = z^2$, x, y, and z, are prime to each other, we may proceed as follows. Whatever is the form of y^2; $3y^2$ is diviſible by 3, and is therefore of the form $3n$; and x^2 muſt be of one of the forms $3n$, or $3n + 1$; theſe being the only poſſible forms of ſquares numbers to modulus 3. But if x be of the form $3n$, we ſhall have $2(3n) \pm 3n = z^2$, of the form $3n$, that is, z and x are both of the form $3n$, which is contrary to the ſuppoſition, ſince x, y, and z are all three prime to each other; therefore x^2 cannot be of the form $3n$; let it then be of the form $3n + 1$, and the equation becomes $2(3n + 1) \pm 3n = z^2$, of the form $3n + 2$; but $3n + 2$ is an impoſſible form for ſquares, therefore z^2 cannot be of the form $3n + 2$, and conſequently the propoſed equation is impoſſible.

And we ſhould have been led to the ſame reſult, if we had conſidered the equation under the more general form, $(3p + 2)x^2 \pm 3qy^2 = z^2$; that is, all equations falling under this form are impoſſible; hence all the following impoſſible equations are readily obtained.

$$\left.\begin{array}{l} 2x^2 \pm 3y^2 = z^2 \\ 5x^2 \pm 3y^2 = z^2 \\ 8x^2 \pm 3y^2 = z^2 \\ 11x^2 \pm 3y^2 = z^2 \\ \&c. \quad \&c. \end{array}\right\} \begin{array}{c} \text{Impoſſible} \\ \text{forms of} \\ \text{equations.} \end{array} \left\{\begin{array}{l} 2x^2 \pm 6y^2 = z^2 \\ 5x^2 \pm 6y^2 = z^2 \\ 8x^2 \pm 6y^2 = z^2 \\ 11x^2 \pm 6y^2 = z^2 \\ \&c. \quad \&c. \end{array}\right.$$

In the ſame way it may be demonſtrated that the following equations are all impoſſible.

$$\left\{\begin{array}{l} (5p + 2)x^2 \pm 5qy^2 = z^2 \\ (5p + 3)x^2 \pm 5qy^2 = z^2 \\ (7p + 3)x^2 \pm 7qy^2 = z^2 \\ (7p + 5)x^2 \pm 7qy^2 = z^3 \\ (7p + 6)x^2 \pm 7qy^2 = z^2 \end{array}\right. \qquad \left\{\begin{array}{l} (11p + 2)x^2 \pm 11qy^2 = z^2 \\ (11p + 6)x^2 \pm 11qy^2 = z^2 \\ (11p + 7)x^2 \pm 11qy^2 = z^2 \\ (11p + 8)x^2 \pm 11qy^2 = x^2 \\ (11p + 10)x^2 \pm 11qy^2 = z^2 \end{array}\right.$$

Theſe formulæ might be carried on indefinitely, each of which will furniſh an infinite number of impoſſible forms of ſquares to each reſpective modulus; only obſerving that the indeterminate q muſt always be prime to the modulus with which it enters.

The impoſſible forms for cubes are aſcertained in a ſimilar manner, by firſt finding the linear forms of them, and then combining them as in the foregoing caſe; thus all cubes are of one of the forms $7n$, $7n + 1$, or $7n + 6$; that is, all cube numbers are either diviſible by 7; or, when divided by it as far as poſſible, the remainder will be either 1 or 6; and hence again it follows, that $7n + 2$, $7n + 3$, $7n + 4$, $7n + 5$, are all impoſſible forms of cube numbers; or if a number, when divided by 7, leaves for a remainder 2, 3, 4, or 5, that number is not a cube. Again, all cube numbers are of one of the forms $9n$, or $9n \pm 1$; and conſequently, no number of the form $9n + 2$, $9n + 3$, $9n + 4$, $9n + 5$, $9n + 6$, $9n + 7$, can be a cube, as theſe are all impoſſible forms.

The equation $2x^3 \pm 7y^3 = z^3$ is impoſſible.

Here, as in the caſe of ſquares, x, y, and z, may be conſidered as prime to each other; and, therefore, for the ſame reaſon as that ſtated in the foregoing demonſtration, x cannot be of the form $7n$, as we ſhould then have z alſo of the ſame form, which is contrary to the hypotheſis, theſe quantities being prime to each other; ſo that if the equation be poſſible, it muſt be when x^3 has one of the forms $7n \pm 1$, and this ſuppoſition gives $2(7n \pm 1) \pm 7n = z^3$; of the form $7n \pm 2$, which is an impoſſible form for cubes; and therefore the equation $2x^3 \pm 7y^3 = z^3$ is impoſſible.

In the ſame way it may be ſhewn, that each of the following equations is impoſſible.

$$\left.\begin{array}{rcrcl} 2x^3 & \pm & 7y^3 & = & z^3 \\ 3x^3 & \pm & 7y^3 & = & z^3 \\ 4x^3 & \pm & 7y^3 & = & x^3 \\ 5x^3 & \pm & 7y^3 & = & z^3 \\ 9x^3 & \pm & 7y^3 & = & z^3 \\ 10x^3 & \pm & 7y^3 & = & z^3 \end{array}\right\} \qquad \left\{\begin{array}{rcrcl} 2x^3 & \pm & 9y^3 & = & z^3 \\ 3x^3 & \pm & 9y^3 & = & z^3 \\ 4x^3 & \pm & 9y^3 & = & z^3 \\ 5x^3 & \pm & 9y^3 & = & z^3 \\ 6x^3 & \pm & 9y^3 & = & z^3 \\ 7x^3 & \pm & 9y^3 & = & z^3 \end{array}\right.$$

And theſe, again, may be farther generalized, by writing them

$$\begin{array}{ll} (7p + 2)\,x^3 \pm 7qy^3 & (9p + 2)\,x^3 \pm 9qy^3 \\ (7p + 3)\,z^3 \pm 7qy^3 & (9p + 3)\,x^3 \pm 9qy^3 \\ (7p + 4)\,x^3 \pm 7qy^3 & (9p + 4)\,x^3 \pm 9qy^3 \\ (7p + 5)\,x^3 \pm 7qy^3 & (9p + 5)\,x^3 \pm 9qy^3 \\ (7p + 9)\,x^3 \pm 7qy^3 & (9p + 6)\,x^3 \pm 9qy^3 \\ (7p + 10)\,x^3 \pm 7qy^3 & (9p + 7)\,x^3 \pm 9qy^3 \end{array}$$

No one of which equations can ever become equal to a cube, either in integers or fractions; provided that q be taken prime to the modulus with which it enters.

A ſimilar mode of inveſtigation may be purſued with all the higher powers, the only difficulty being in fixing upon a proper modulus; that is, ſuch a number as hath the moſt impoſſible forms belonging to it, which requires a ſeparate inveſtigation. (See Power.) But almoſt every power has ſome modulus that renders it expreſſible in three forms; thus,

All 3d powers are of one of the forms $7n$, or $7n \pm 1$
4th powers - - - $5n$, or $5n + 1$
5th powers - - - $11n$, or $11n \pm 1$
6th powers - - - $7n$, or $7n + 1$
8th powers - - - $17n$, or $17n \pm 1$
9th powers - - - $19n$, or $19n \pm 1$
10th powers - - - $11n$, or $11n + 1$
&c. &c. &c. &c.

Here the 7th power is now omitted, not being reducible to a ſimilar form; by means of theſe linear forms various others, as $ax^m \pm by^m = cz^m$, may be demonſtrated to be impoſſible.

Beſide theſe equations, which are demonſtrable to be impoſſible, from the linear forms of the reſpective powers, there are others that have been noticed by Bachet, Fermat, Lagrange, Euler, &c.; but theſe generally require very laborious demonſtrations, of which Euler has given ſeveral deſcriptions in the Peterſburgh Acts. The Memoirs of Berlin alſo contain many papers on this ſubject by Lagrange; thus, $x^3 \pm y^3 = z^3$ is impoſſible, as is alſo $x^4 \pm y^4 = z^4$, and various others; and generally, the equation $x^n \pm y^n = z^n$ is impoſſible, if n be greater than 2. This propoſition was firſt propoſed by Fermat as a challenge to all the Engliſh mathematicians of his time, but the general demonſtration of it was not publiſhed till very lately, *viz.* for November 1810, in Nicholſon's Philoſophical Journal, by Mr. P. Barlow, and to which the reader is referred for a complete inveſtigation of this intereſting numeral propoſition. See alſo Barlow's "Elementary Inveſtigations, &c."

Impoſſible *Roots of Equations.* See Imaginary *Roots.*

Impoſſible *Quantity*, in *Algebra.* See Root.

IMPOST, from *impono, I impoſe*, in *Law*, properly denotes the tribute or tax appointed by a ſovereign to be paid for ſuch merchandize as is brought into any haven in his dominions from foreign nations. See Duty.

Impoſt is diſtinguiſhed from *cuſtom*, in that cuſtom more properly ſignifies the duties paid to the king for goods ſhipped off or exported. But the two are frequently confounded together.

IMPOSTHUME, by corruption from *impoſtem* and *apoſtem, abſceſs*, a collection of matter, or pus, in any part of the body, either owing to an obſtruction of the fluids in that part, which makes them change into ſuch a matter; or to a tranſlation of it from ſome other part where it was generated. See Abscess

IMPOSTORS, Religious, are ſuch as falſely pretend to an extraordinary commiſſion from heaven; and who terrify and abuſe the people with falſe denunciations of judgments. Theſe are puniſhable in the temporal courts with fine, impriſonment, and infamous corporal puniſhment. 1 Hawk. P. C. 7.

IMPOSTS, in *Architecture*, the capitals of pillars, or pilaſters, which ſupport arches. See *Baſilic* in *Plate Architecture.*

An impoſt, ſometimes alſo called *chaptrel*, is a ſort of little cornice, which crowns a pier, and ſupports the firſt ſtone, whence an arch or vault commences.

Impoſts conform to their proper orders. The Tuſcan is a plinth only; the Doric has two faces crowned; the Ionic has a larmier over the two faces, and its mouldings may be carved; the Corinthian and Compoſite have a larmier, frieze, and other mouldings.

The projecture of the impoſt muſt not exceed the naked of the pilaſter. Sometimes the entablature of the order ſerves for the impoſt of the arch; and this looks very grand and ſtately.

The impoſt is a thing eſſential to an ordonnance; inaſmuch as without it, in the place where the curve line of the arch meets with the perpendicular line of the pillar, there always ſeems a kind of elbow.

P, in *fig. Baſilic*, repreſents an impoſt made open or flat in the middle, and bounded by fillets or ogee. This kind of impoſt is ſaid to be the invention of lord Burlington, and it may be called a Burlington impoſt. It is enriched with a *guloic*, or bands forming circles and interſecting each other: when there are two rows it is called a *double* guloic.

The following rules are given by ſome modern authors for dividing the impoſts of arches: in the Tuſcan impoſts the facia hath 3 parts, the ogee 1, the fillet $\frac{1}{2}$, the corona 3, and the band $1\frac{1}{2}$. For the projections, the facia $\frac{1}{2}$, the ogee two parts, corona 3, and the whole $3\frac{1}{2}$. In the Doric, the frieze 2, fillet $\frac{1}{4}$, aſtragal $\frac{3}{4}$, cyma recta $2\frac{1}{4}$, fillet $\frac{1}{4}$, corona 2, ogee 1. For the projections, fillet $\frac{1}{2}$, aſtragal 1, corona $2\frac{1}{2}$, and the whole $3\frac{1}{2}$.

In the Ionic, fillet $\frac{1}{2}$, cyma 4, ovolo $1\frac{1}{4}$, corona $1\frac{1}{2}$, ogee 1. For the projections, cyma $1\frac{3}{4}$, corona $2\frac{1}{2}$, the whole $3\frac{1}{2}$.

In the Corinthian, the frieze $1\frac{3}{4}$, fillet $\frac{1}{4}$, aſtragal $\frac{1}{2}$, cyma $2\frac{1}{4}$, ovolo 1, corona $1\frac{1}{2}$, ogee 1. For the projections, fillet $\frac{1}{4}$, aſtragal $\frac{3}{4}$, cyma $1\frac{3}{4}$, corona $2\frac{1}{2}$, the whole $3\frac{1}{2}$.

In the Compoſite, frieze 2, fillet $\frac{1}{4}$, aſtragal $\frac{3}{4}$, the cyma $1\frac{1}{2}$, corona $1\frac{1}{2}$, ogee 1. For the projections, fillet $\frac{1}{4}$, aſtragal $\frac{3}{4}$, ovolo $1\frac{1}{2}$, cyma $2\frac{1}{4}$, corona $2\frac{1}{4}$, the whole $3\frac{1}{2}$.

IMPOTENCE is more particularly uſed to denote an inability in the male to impregnate the female. This inability, however, ariſes from two very different conditions of the body; in one of which the venereal congreſs cannot be accompliſhed; but, in the other, although coition be effected, the ſemen is not tranſmitted into the uterus. Whence the noſologiſts have properly diſtributed the varieties of this inability under two heads, or diſtinct diſeaſes, *viz. Anaphrodiſia*, or a defect of the venereal appetite and power, which is *impotency* ſtrictly ſo called; and *Dyſpermatiſmus*, or an impeded and interrupted emiſſion of the ſemen in the generative act. The various mechanical impediments which conſtitute the latter ſpecies of the diſeaſe, have been enumerated under the proper head; and conſiſt principally in diſorders of the canal of the urethra, by which the paſſage is obſtructed, or of the adjoining parts by which it is compreſſed; in either caſe, the exit of the ſeminal fluid is impeded, or altogether prevented.

The *anaphrodiſia*, or incapability of coition, may originate from three cauſes; to wit, from a connate or original imperfection in the conformation of the organs ſubſervient to generation, a circumſtance of very unuſual occurrence; from a paralyſis affecting the muſculi erectores of the penis (Anaphrodyſia *à paralyſi*, Sauvages, claſs vi. genus xiii. ſpec. 1.); or from a too ready efflux of the ſemen, *e. g.* during the evacuation of the bowels, or at the commencement of the diſtention of the virile organ (A. *gonorrhoica*, Sauv. ſpec. 2.) Where the diſeaſe conſiſts in a malconformation of the organs, or of any of their appendages, it muſt be of courſe beyond the reach of medical relief. When it originates from palſy, affecting the erector muſcles, it is ſcarcely more favourable; ſince it is then only a part of a more general palſy affecting one ſide of the body (hemiplegia), or the lower extremities (paraplegia), or originating from injury to the ſpinal nerve, occaſioned by falls or other external violence. When the complaint is occaſioned by an extreme relaxation, as it were, of the ſecretory veſſels, inſomuch that the ſemen is poured out from the ſlighteſt irritation in their vicinity (ſuch as the paſſage of the ſtools, or the friction of the dreſs), or from the ſmalleſt determination of blood to the parts before the diſtention of the member is produced, medical treatment, with proper regimen, may be reſorted to with ſucceſs. This ſpecies of *anaphrodiſia* has been aſcribed to early maſturbation, to exceſs in venereal pleaſures, and to the occurrence of frequent gonorrhœas; but it cannot be doubted, that deſigning quacks have multiplied and exaggerated the repreſentations of this kind beyond the truth, and that their books have done more harm than good, by the imaginary diſorders with which they have afflicted weak and hypochondriacal men. In ſuch caſes, the ordinary means of ſtrengthening the body by light and nouriſhing diet, and by the uſe of the bark and ſteel, or other vegetable and mineral tonics, together with the uſe of the cold bath, muſt be reſorted to. In many of thoſe caſes, Mr. Hunter obſerves, waſhing the penis, ſcrotum, and perinæum with cold water, is often of ſervice; and to render it colder than we find it at ſome ſeaſons of the year, common ſalt may be added to it, and the parts waſhed when the ſalt is almoſt diſſolved. Hunter on the Ven. Diſeaſe, pt. iii. chap. xii.

The able and diſtinguiſhed phyſiologiſt juſt alluded to, remarked that the influence of the mind upon the operations of the body was moſt conſpicuous in reſpect to this function, and that various ſtates of apprehenſion, conſciouſneſs of impropriety, &c. ſometimes altogether prevented the performance of it: the neceſſity, therefore, of inveſtigating into the ſtate of the mind, when impotency is complained of, was ſtrongly pointed out by him from long obſervation, and illuſtrated by the following caſe: A gentleman conſulted him reſpecting the loſs of virility; but after ſome inquiry, Mr. Hunter found that the phyſical powers were not defective, and that it could only ariſe from a particular ſtate of mind: whence the mind was to be applied to for the cure; and Mr. Hunter aſſured him that he might be cured, if he could only rely on his own power of ſelf-denial. The patient was requeſted, therefore, to ſleep with the individual with whom his inability had manifeſted itſelf, having firſt promiſed himſelf to abſtain from any connection for ſix nights, let his inclinations and powers be what they might. This plan produced a complete alteration in the ſtate of his mind, and was followed by a perfect and permanent cure. (Loc. cit.) See DYSPERMATISMUS.

Impotency is a canonical diſability to avoid marriage in the ſpiritual court. The marriage is not void *ab initio*, but voidable only by ſentence of ſeparation during the life of the parties.

IMPRACTICABLE CASE, in *Algebra*. See IRREDUCIBLE.

IMPRECATION, derived from *in*, and *precor*, *I pray*; a curſe, or wiſh that ſome evil may befal any one.

The ancients had their goddeſſes called *Imprecations*, in Latin *Diræ*, *i. e. Deorum iræ*, who were ſuppoſed to be the executioners of evil conſciences. They were called *Diræ* in heaven, *Furies* on earth, and *Eumenides* in hell. The Romans owned but three of theſe Imprecations, and the Greeks only two. They invoked them with prayers and pieces of verſes to deſtroy their enemies.

IMPREGNATION, derived from *imprægnare*, of *prægnans*, a *woman with child*; the emiſſion of the ſeed of the male in coition, by which the female conceives, or becomes with young. See GENERATION.

IMPREGNATION is alſo figuratively uſed in pharmacy, when a liquor imbibes the particles of ſome other body.

Thus a menſtruum is ſaid to be impregnated with a body diſſolved in it, as much as its pores are able to receive.

IMPREGNATION, in *Natural Hiſtory*, is one of the modes in which organized ſubſtances have become mineraliſed and preſerved in the ſtrata of the earth; Mr. William Martin, in his "Outlines," p. 50, defines this term, as applying to the mechanical impregnation of organic ſubſtances with mineral matters, and he ſhews the diſtinctions between this and a chemical union of mineral ſubſtances with the organic matter, called converſion.

IMPRESSED Species. See Species.

IMPRESSING, in the *Sea Language.* See Manning *the Fleet.*

IMPRESSION, in *Natural Hiſtory*, is a term implying the interior of the matrix or mould in which an extraneous foſſil has been incloſed and its form impreſſed. The matrix is ſaid to be filled when the reliquium remains in the impreſſion, empty when the reliquium has been renewed from the impreſſion. Sometimes, after the organic body has been removed, mineral or inorganic matter takes its place, and aſſumes the external form of the reliquia, and ſuch are often called *caſts*, which is the ſtate in which the foſſil ſhells of a great number of ſtrata are found. Mr. James Parkinſon, at the commencement of his “Organic Remains,” was inclined, vol. i. p. 37, to exclude impreſſions and caſts from the rank of ſecondary foſſils or organic remains, but the further reſearches of this able writer ſeem to have conſiderably modified his ideas on this ſubject.

Impression, in *School Philoſophy*, is applied to the ſpecies of objects which are ſuppoſed to make ſome mark or impreſſion on the ſenſes, the mind, and the memory.

The Peripatetics tell us, that bodies emit ſpecies reſembling them, which ſpecies are conveyed by the exterior ſenſes to the common ſenſory: theſe impreſſed ſpecies, being material and ſenſible, they ſay, are rendered intelligible by the active intellect; and when thus ſpiritualized, are called *expreſſions*, or *expreſs ſpecies*, as being expreſſed from the others.

Impression is alſo frequently uſed in ſpeaking of the editions of a book, or of the number of times it has been printed.

Impreſſion, however, differs from *edition*: the former, properly ſpeaking, takes in no more than what belongs to the printing, the letter, paper, margin, page, diſtances of words and lines, and the diſpoſition of every thing that may have a good or bad effect upon the eye; the latter, beſides all this, takes in the care of the editor, who has reviſed the copy, corrected or augmented it, adding notes, tables, and other like things, which he judged might contribute towards making the book more uſeful and correct.

Indeed, very frequently the word edition only refers to this latter part; as when, in ſpeaking of the works of St. Auguſtine, we quote the edition of Eraſmus, the Lovaniſts, Benedictines, &c. where we have no regard to the printing part, but only to the care and pains of the editors.

Impression, *Privilege for.* See Privilege.

Impressions on *gems* and *medals.* See Gems and Medals.

IMPREST, *Auditors of.* See Auditors.

IMPRISONMENT, the ſtate of a perſon reſtrained of his liberty, and detained under the cuſtody of another; and extends not only to a gaol, but to a houſe, ſtocks, or a man's being held in the ſtreet, &c. (2 Inſt. 589.) None ſhall be impriſoned but by the lawful judgment of his peers, or by the law of the land. Mag. Ch. 9 Hen. III. c. 2. 25 Edw. III. ſtat. 5. c. 4.

No perſon is to be impriſoned, but as the law directs, either by the command or order of a court of record, or by lawful warrant, which warrant muſt be in writing, under the hand and ſeal of the magiſtrate, and expreſſing the cauſe of the commitment, in order to be examined (if neceſſary) upon a “habeas corpus;” or the king's proceſs, on which one may be lawfully detained; and at common law a perſon could not be impriſoned unleſs he were guilty of ſome force or violence, for which his body was ſubject to impriſonment, as one of the higheſt executions. Where the law gives power to impriſon, in ſuch caſe it is juſtifiable, provided he that does it in purſuance of a ſtatute, exactly purſues the ſtatute in the manner of doing it, for otherwiſe it will be deemed falſe impriſonment, and in conſequence it is unjuſtifiable. Every warrant of commitment for impriſoning a perſon, ought to run, “Till delivered by due courſe of law,” and not “Until farther order;” which has been held ill, and thus it alſo is, where one is impriſoned on a warrant, not mentioning any cauſe for which he is committed. If there be no cauſe expreſſed, the gaoler is not bound to detain the priſoner. For the law judges in this reſpect, ſaith ſir Edward Coke, like Feſtus the Roman governor; that it is unreaſonable to ſend a priſoner, and not to ſignify withal the crimes alleged againſt him.

A perſon being ſent to priſon by a warrant from a ſecretary of ſtate, without aſſigning any cauſe, &c. it was adjudged, that he ought to be diſcharged for that reaſon. Perſons may alſo, by bail or habeas corpus, be diſcharged from their impriſonment in any caſe bailable. See the articles Habeas Corpus, Bail, Prison, Prisoner, and Gaol.

Imprisonment, *Falſe.* See False and Appeal.

IMPROMTU. See Inpromtu.

IMPROPER Feuds, in *Law.* See Feud.

Improper *Fractions*, in *Arithmetic.* See Fractions.

IMPROPRIATION is a term uſed where the profits of an eccleſiaſtical benefice are in the hands of a layman.

In which ſenſe it ſtands diſtinguiſhed from appropriation, which is where the profits of a benefice are in the hands of a biſhop, college, &c. though the two are now often uſed promiſcuouſly. There are ſaid to be 3845 impropriations in England.

IMPROPRIETY, the quality of ſomething that is not fit, or proper. See Proper, and Propriety.

Grammarians obſerve three kinds of faults againſt purity in language; a ſoleciſm, barbariſm, and impropriety: an impropriety is committed when a word is uſed that has not a *proper* ſignification.

This is an offence againſt lexicography, as barbariſm reſpects etymology and the ſoleciſm ſyntax. It is the buſineſs of the lexicographer to aſſign to every word of the language the preciſe meaning or meanings which uſe hath aſſigned to it. This fault may be committed either in ſingle words or in phraſes. Improprieties as to ſingle words are ſuch as a writer is apt unwarily to be ſeduced into by ſome reſemblance or proximity in ſound or ſenſe, or both. It is by proximity in ſound that ſeveral are miſled to uſe the word “obſervation” for “obſervance,” as when they ſpeak of the religious obſervation of a feſtival for the religious obſervance of it. By a ſimilar miſtake “endurance” hath been uſed for “duration,” and confounded with it; whereas its proper ſenſe is patience. This was the caſe in the days of queen Elizabeth, when endurance was ſynonymous with duration, though in this acceptation it is now obſolete. Thus alſo “human” and “humane” are ſometimes confounded; the adjectives “ceremonious” and “ceremonial” are ſometimes uſed promiſcuouſly; and the word “conſtruction” is variouſly applied, &c. &c. With regard to improprieties ariſing from a ſimilitude in ſenſe, we may mention “veracity” ſtrictly applicable to perſons, uſed for “reality,” which pertains to things; “verdict” uſed for “teſtimony;” “riſible” for “ridiculous,” &c. &c. To this claſs we may refer the “idiotiſm,” or the employing of an Engliſh word in a ſenſe which it bears in ſome provincial dialect, in low and partial uſe, and which perhaps the correſponding word bears in ſome foreign tongue, unſupported by general uſe in our own language: ſuch are "impracticable" when it is uſed for "impaſſable," and applied to roads; "intend" when uſed for "mean," "decompound" for "analyſe," &c. &c. Another error of the ſame kind is the "latiniſm;" ſuch as the uſe of the word "affection," when applied to things inanimate, and ſignifying the ſtate of being affected by any cauſe; and "integrity" when uſed for "entireneſs." To theſe properly ſucceeds that ſort of the "vulgariſm" in which only a low and partial uſe can be pleaded in ſupport of the application that is made of a particular word. Of this an example occurs in the following paſſage cited from the "Guardian" (N° 57) "'Tis my humble requeſt you will be particular in ſpeaking *to* (for *on*) the following points." Of the ſame ſtamp is "on't" for "of it." The derivatives, "falſeneſs," "falſity," "falſehood," from the root "falſe," are often erroneouſly applied for one another, though they ought to be diſtinguiſhed. "Falſeneſs" is properly uſed in a moral ſenſe for want of veracity, and applied only to perſons; the other two are applied only to things. "Falſity" denotes that quality in the abſtract, which may be defined contrariety to truth. "Falſehood" is an untrue aſſertion. The ſame miſapplication occurs in the uſe of the word "conſcience" for "conſciouſneſs."

Of improprieties that occur in phraſes the firſt we ſhall mention is, when the expreſſion, on being grammatically analyſed, is diſcovered to contain ſome inconſiſtency, ſuch is the phraſe "of all others" after the ſuperlative; *e. g.* "the moſt perfect of all others" ſhould have been "more perfect than any other," or "the moſt perfect of all" the things to which it refers. To this claſs belong thoſe improprieties which involve in them ſome abſurdity. Others are thoſe by which an author is made to ſay one thing when he means another. Another ſpecies of impropriety is that in which there appears ſome ſlight incongruity in the combination of the words; *e. g.* "when you fall *into a man's converſation*, &c." for "fall *into converſation with a man*:"—"the falſe taſte *the town is in*, &c." for the "falſe taſte of the town." Campbell's Philoſophy of Rhetoric, vol. i. p. 456, &c.

IMPROVEMENT, in *Agriculture*, a term applied to any ſort of amelioration which is produced on lands either by the ſeveral different operations and proceſſes which they are capable of admitting, or by the general practices of cultivation. See DRAINING and WATERING, &c.

IMPROVEMENT *of Landed Property*, the art of rendering it more valuable to the proprietors, and at the ſame time more beneficial to the public. It has been well remarked that the poſſeſſors of this ſort of property "have a double intereſt, a two-fold motive to incline them toward the improvement of their eſtates; namely, to augment their perſonal incomes, and to increaſe the proſperity of the land they live in."

The ſpecies of improvements that landed property is capable of admitting, are conſidered as very numerous; but they may probably be arranged under the following heads.

1. Reclaiming watery lands.
2. Appropriating commonable lands.
3. Conſolidating appropriated lands.
4. Laying out eſtates.
5. Laying out farm-lands.
6. Laying out farms.
7. Improving farm-lands.
8. Improving wood-lands.
9. Improving waters.
10. Improving mines, quarries, &c.

The firſt of theſe objects may in moſt caſes be effected by proper draining and embanking, the ſecond by incloſure, the third by means of exchange, purchaſe, or ſale; and the whole of the reſt by the ſeveral methods that are deſcribed under the particular heads to which they immediately belong. See DRAINING, EMBANKING, COMMONABLE *Lands*, &c. &c.

It is ſuggeſted, that by the political conſtitution of this country the government has no power or legal means of advancing its proſperity by the improvement of *appropriated territory*; unleſs by ſpecial acts of the legiſlature. And that even theſe are confined to a few particular objects; as drainage, incloſure, and the conſolidation of intermixed lands; and theſe only, where a plurality of intereſts are concerned. In the maſs of improvements which are here to be brought forward, and in all caſes of private property, it is out of the power of the public to interfere. A proprietor may ſuffer his eſtate to lie waſte with impunity, provided he thereby injures no other man's private property. And if an eſtate be permitted to lie partially waſte, or under—productive, for the want of due improvement, the loſs to the public, though not ſo large, is of the ſelf-ſame nature. In the appropriation of a wild uncultivated country, it is hinted, that it might be wiſe in a government to reſerve a power of rendering its lands productive, as a wiſe poſſeſſor of an eſtate reſerves the right of keeping his farms in tenantable repair and huſband-like cultivation at the expence of the tenant who refuſes or neglects to perform his duty. But as no ſuch reſervation has been made, nor in any way claimed in this country, the proprietors of its lands are, it is ſuppoſed, bound not only by the ties of intereſt, but by thoſe of honour, to promote their improvement.

It is conſidered that the baſis or ground-work of improvement on which a practical man may tread with ſafety and full effect, is an accurate delineation of the *exiſting ſtate*, together with a faithful eſtimate of the *preſent* value of the lands and other valuable particulars of an eſtate to be improved. A general map of the appropriated lands, promptly exhibiting the ſeveral farms and fields as they lie, and ſhewing the exiſting watercourſes, embankments, fences, and buildings, the woodlands, ſtanding waters, moraſſes, and moory grounds; the known mines and quarries, together with the commonable lands, if any, belonging to the eſtate, forms a comprehenſive and uſeful ſubject of ſtudy to the practical improver. It is to him, what the map of a country is to a traveller, or a ſea-chart to a navigator. If an eſtate is large, a faithful delineation of it will enable him in a few hours to ſet out with advantages reſpecting the connections and dependencies of the whole and its ſeveral parts, with which as many days, weeks, or months could not furniſh him, without ſuch ſcientific aſſiſtance. If, on the ſame plan, the rental value of each mine, quarry, woodland, and productive water in its preſent ſtate be ſtated, the preparatory information which ſcience is capable of furniſhing may be conſidered as complete. And it remains with the artiſt to ſtudy, with perſevering attention, the ſubject himſelf, in order to diſcover the ſpecies of *improvements* of which it is ſuſceptible, and the ſuitable means of carrying them into execution. See *Landed* PROPERTY.

IMPROVIDE', in *Law*. See QUI *Improvidè*.

IMPROVISARE, *Ital.* to ſing or play extempore.

IMPROVISATORE, *Ital.* an extemporaneous ſinger of verſes upon a given ſubject. A voluntary player, an organiſt who is able to treat in a maſterly manner a given ſubject of fugue, extempore, is juſtly allowed to be a man of conſiderable abilities.

The improviſatori, in poetry, ſeem confined to the ſouthern provinces of Europe. Italy, Spain, and Portugal, appear excluſively to enjoy the gift. It is indeed unwillingly credited elſewhere. And yet there is nothing more common in Italy, than to ſee, during the carnival, two maſks meet, defy, challenge, and attack each other in verſe, and anſwer, ſtanza for ſtanza, to the ſame air, with a vivacity, dialogue, melody, and accompaniment, which, without the having been preſent, it is difficult to comprehend. But Dionyſius Halicarnaſſeus informs us, that in the firſt Roman triumph of Romulus over the Cænienſes, the army followed in three ſeveral diviſions, hymning their gods in ſongs of their country, and celebrating their general with *extemporary verſes:* this account affords a very venerable origin to the improviſatori of Italy; as the event happened in the fourth year of Rome, ſeven hundred and forty-nine years before Chriſt, and the fourth year of the ſeventh Olympiad.

This ſurpriſing faculty, in modern times, extends to females. Such was the admirable improviſatrice, Madalena Morelli, commonly called the Corilla, whom we ſaw and heard at Florence in 1770; and who, beſides her poetical inſpirations, played well on the violin, reſting it on her lap, not her ſhoulder, like Madame Sirman. It was at the houſe of Nardini, of whom ſhe had learned the violin, that we heard her perform. She had likewiſe a pleaſing voice, and ſung with taſte, expreſſion, and no inconſiderable degree of execution. This accompliſhed female having been long celebrated all over Europe for the marvellous fertility and readineſs with which ſhe inſtantly produced the moſt elegant verſes on whatever ſubject, and in whatever meaſure, ſhe was requeſted to give ſpecimens of her talents; after having been received with acclamation into the celebrated academy of the Arcadi at Rome in 1775, in the preſence of the firſt nobility and men of letters and ſcience, in July 1776 ſhe was ſolemnly crowned in the Campidoglio, as Petrarch had been in the fourteenth century. See Corilla.

IMPULSIVE, a term in philoſophy, applied to the action of the body which impels or puſhes another.

Thus the arm is ſaid to give an impulſive motion to the ſtone that it throws. See Projectile.

In this ſenſe, impulſive ſtands contradiſtinguiſhed from *attractive* and *repulſive.*

Sir Iſaac Newton ſuggeſts, that attraction itſelf may poſſibly be effected by an impulſive power.

IMPURITY, in the *Moſaic* law. There were ſeveral ſorts of impurity contracted under the law of Moſes. Some were voluntary, as the touching of a dead body, or of any animal that died of itſelf, or of any creeping thing, or unclean creature; or the touching things holy by one who was not clean, or was not a prieſt; or touching perſons under impure circumſtances. Other kinds of impurity there were of an involuntary nature; for which we muſt refer the reader to Calmet, who ſhews what kind of purification was preſcribed for each ſpecies of pollution. See Numb. xix. 11—14. Levit. xi. 24—43. Levit. xii. 23—45. Id. xv. 25. Calm. Dict. Bibl. in voc.

IMPUTATION, a term much uſed among divines, ſometimes in a good, and ſometimes in an ill ſenſe: in the latter it is uſed to ſignify the charging the ſin to the account of one, which was committed by another. The word, however, is generally uſed in an ill ſenſe; for when we place any good to the account of another, we uſe the word attribute.

Thus Adam's ſin is ſaid by ſome divines to be imputed to all his poſterity; all his deſcendants by his fall becoming as criminal in the ſight of God, as if they had fallen themſelves; and bearing the juſt puniſhment of his firſt crime. See *Original* Sin.

Imputation, uſed in a good ſenſe, ſignifies the charging of another's juſtice or merit.

Thus the juſtice of Jeſus Chriſt is ſaid to be imputed to us; his merits, and the price of his ſufferings, being applied to us.

IN, in the *Manege.*—*To put a horſe* in, is an expreſſion that ſignifies to breed and dreſs him, by putting him right upon the hand and the heels.

In, in the *Sea Language,* denotes the ſtate of any of a ſhip's ſails, when they are furled or ſtowed: it is uſed in oppoſition to *out,* which implies that they are ſet, or extended to aſſiſt the ſhip's courſe.

In-*penny and out-penny,* in our *Old Writers,* money paid by the cuſtom of ſome manors on the alienation of tenants, &c.—In-penny and out-penny "conſuetudo talis eſt in villa de Eaſt Radham, de omnibus terris quæ infra Burgagium tenentur, viz. quod ipſe, qui vendiderit vel dederit dictam tenuram alicui, dabit pro exitu ſuo de eadem tenura unum denarium, & ſimile de ingreſſu alterius; et ſi prædicti denarii a retro fuerint, ballivus domini diſtringet pro eiſdem denariis in eadem tenura." Regiſt. Prior. de Cokesford, p. 25.

In *and Out,* in *Ship Building,* is a term often uſed to ſignify the ſcantling of the timbers the moulding way, but more generally applied to the bolts which connect the ſides of the ſhip together by being driven the thwartſhip way through the knees, riders, &c.

INA, in *Biography,* king of Weſſex, one of the moſt illuſtrious princes in the Saxon heptarchy, ſucceeded to the crown in 689, and began his courſe by attempts at extending his dominions by force of arms. He invaded Kent, but was induced by a large ſum of money to deſiſt from his enterpriſe. He then obtained poſſeſſion of Cornwall and Somerſetſhire, which he annexed to his kingdom, treating the vanquiſhed with a degree of humanity hitherto but little practiſed by the Saxon conquerors. By his code of laws he is placed as a legiſlator at the head of the Saxon kings previouſly to Alfred. Though he was diſturbed by ſome inſurrections at home, his long reign of thirty-ſeven years may be regarded as one of the moſt glorious and moſt proſperous of the heptarchy. In the decline of life he made a pilgrimage to Rome, and after his return ſhut himſelf up in a cloiſter, where he died. Hume.

Ina, in *Geography,* a town of Japan, in the iſland of Niphon; 22 miles N.W. of Faniſhma.

INACCESSIBLE *Height* or *Diſtance.* See Altitude, Distance, &c.

Inaccessible *Iſland,* in *Geography,* a ſmall iſland in the South Atlantic ocean, and one of thoſe called the iſlands of Triſtan de Cunha. It has obtained the name from its being a high, bluff, apparently barren plain, viſible at the diſtance of 14 or 15 leagues, about nine miles in circumference, and having on the whole a very forbidding appearance; with a high rock detached from it at the ſouth end. S. lat. 37° 19′. W. long. 11° 50′.

INACHIA, Ιναχια, in *Antiquity,* a feſtival in Crete, celebrated in honour of Leucothea, or Ino.

The word is compounded of Ino, and ἀχος, *i. e.* grief; being, perhaps, a commemoration of Ino's misfortunes.

INACORI, in *Geography,* a town of Hindooſtan, in Marawar; 20 miles N.N.W. of Ramanadporum.

INACTION, *ceſſation of action,* a term much uſed in the myſtical divinity; by which is underſtood a privation, or annihilation of all the faculties; whereby the door is, as it were, ſhut to all external objects, and a kind of ecſtacy is procured, during which God ſpeaks immediately to the heart. It is the ſtate of inaction that is held the moſt proper for receiving the Holy Spirit; and in this fit of dozing, they ſay, it is that God communicates ſublime and ineffable ſentiments and graces to the ſoul.

Some do not make it conſiſt in this ſtupid kind of indolence, or general ſuſpenſion of all ſenſation : but by inaction only mean a ceſſation of deſires, in which, as the ſoul does not determine itſelf to any poſitive acts, neither does it abandon itſelf to uſeleſs meditations, or the vain ſpeculations of reaſon ; but demands in general every thing that may be agreeable to God, without preſcribing any thing to him.

This latter is the doctrine of the ancient myſtics, and the former that of the modern ones, or the quietiſts.

In general, however, it may be ſaid, that inaction is not the moſt likely way of pleaſing God ; by our actions chiefly we are to gain his favour : he will have us to act ; ſo that inaction cannot be agreeable to him.

INACTIVITY *of Matter*. See Vis *inertiæ*.

INADEQUATE Idea, or *notion*, is a partial or incomplete repreſentation to the mind. See Idea.

INAGUA, or Yanagua, in *Geography*, two iſlands of the Weſt Indies, near the N. W. coaſt of St. Domingo. N. lat. 21° 2′ to 20° 26′. W. long. 72° 50′ to 71° 30′.

INAJA Guacuiba, in *Botany*, a name by which ſome authors have called the cocoa-nut tree, or *palma Indica nucifera* of other writers.

INAKA, in *Geography*, a town of Japan, in the iſland of Niphon ; 130 miles W. of Meaco.

INALIENABLE, that which cannot be validly alienated, or made over to another. See Alienation.

Thus the dominions of the king, the church, minors, &c. are inalienable, otherwiſe than with a reſerve of the right of redemption for ever.

INAMBLUCIA, in *Natural Hiſtory*, the name of a genus of foſſils of the claſs of the ſelenitæ ; but of the number of the columnar, not the rhomboidal kinds, and compoſed merely of parallel fibres. See Selenites.

INAMELLING, or Enamelling. See Enamelling.

INANIMATE, derived from *in*, taken privatively, and *anima*, *ſoul*, denotes a body that has either loſt its ſoul, or that is not of a nature capable of having any.

Thus a dead man is an inanimate lump, and metals are inanimate bodies.

INANITION, in *Medicine*, emptineſs, or that ſtate of the ſtomach when it has been too long deprived of food.

Man, as well as many other animals, is capable of ſubſiſting for a conſiderable length of time without food. But, in this caſe, among other effects of inanition, ſuch as languor, debility, &c., the moſt remarkable conſequence which enſues, is the extreme irritability of the ſtomach itſelf, which is now eaſily excited to extraordinary vaſcular action, by the ſmalleſt quantity of food or drink, ſo that it is difficult to avoid occaſioning inflammation of that organ, in attempting to reſtore the health and ſtrength of the ſufferer. This law of the vital power, (excitability, or ſenſorial power, in the language of Brown and Darwin,) is the ground-work of the ſyſtems of medicine promulgated by theſe two phyſicians ; namely, that whenever the accuſtomed ſtimulus of any organ, or of the body at large, has been long withdrawn, ſuch an accumulation of that power takes place, that a much ſmaller ſtimulus than ordinary is capable of producing extraordinary excitement. (See Excitability.) In ſuch caſes, therefore, the utmoſt caution is required to reſtore the natural ſtimulus by ſlow degrees ; uſing firſt ſubſtances of the leaſt ſtimulating power, and in very ſmall quantity. Thus in a froſt-bitten limb, which is produced by the too great abſtraction of the ſtimulus of heat, the attempt to reſtore its vitability by warm applications is invariably productive of inflammation and gangrene, and the limb will drop off, if the life of the patient be not alſo deſtroyed. The only ſucceſsful mode of reſtoration is to rub the part with ſnow, or with cold water, which are of a temperature ſomething above the cold of the limb. (See Cold.) In like manner, in the attempt to reſtore a perſon to ſtrength, who has ſuffered from *inanition*, the firſt nutriment given muſt be fluid, that it may not irritate by its hardneſs and weight, in ſmall quantity, for a ſimilar reaſon, deſtitute of every heating and ſtimulating quality, from vinous, ſpirituous, or aromatic ſubſtances, and very eaſy of digeſtion, or containing little nutriment, ſo that the action of the ſtomach may not be too much excited for accompliſhing the digeſtive proceſs. Hence in extreme caſes, a ſpoonful of milk and water, or milk alone, to be repeated every hour, would be one of the ſafeſt and moſt effectual remedies : and by ſlow and cautious ſteps, nutriment of a more ſubſtantial kind, and more copious in quantity, might be afterwards reſorted to, attending rather to the wants of the ſtomach, than to the ſtated hours of meals.

INANITY, the ſchool term for emptineſs, or abſolute vacuity, and implies the abſence of all body and matter whatſoever, ſo that nothing remains but mere ſpace.

INARCHING, in *Gardening*, a particular ſort of grafting, called alſo by ſome grafting by approach. It is uſed when the ſtock intended to be grafted on, and the tree from which the graft is to be taken, ſtand ſo near one another, that they may be brought to touch. The branch to be inarched is to be fitted to that part of the ſtock where it is to be joined, the rind and wood are to be pared away on one ſide for the length of three inches, and the ſtock or branch where the graft is to be united is to be ſerved in the ſame manner, ſo that the two may join equally together, and the ſap meet ; a little tongue is then to be cut upwards in the graft, and a notch made in the ſtock to admit it, ſo that when they are joined, the tongue will prevent their ſlipping, and the graft will more cloſely unite to the ſtock. Having thus brought them exactly together, they may be tied with ſome baſs or worſted, or other ſoft tying, and then the place muſt be covered with ſome grafting clay, to prevent the air from drying the wound, and the wet from rotting the ſtock : a ſtake muſt be fixed in the ground, to which both the ſtock and the graft muſt be tied, to prevent the wind's diſplacing them. When they have remained in this ſtate four months, they will be ſufficiently united, and the graft may then be cut off from the mother-tree, obſerving to ſlope it cloſe to the ſtock, and at this time there ſhould be freſh clay laid all round the part. This operation ſhould be performed in April or May, that the graft may be perfectly united to the ſtock, before the enſuing winter. It is principally practiſed upon oranges, myrtles, jeſſamines, walnuts, and firs, and ſome other trees, which do not ſucceed well in the common way of grafting. But it is a wrong practice when orange trees are deſigned to grow large, for theſe are ſeldom long-lived after the operation. See Ablactation and Grafting.

INARTICULATE, an epithet applied to ſuch ſounds, ſyllables, or words, as are not pronounced diſtinctly. See Articulation.

INAUGURATION, the coronation of an emperor, or king ; or the conſecration of a prelate, ſo called in imitation of the ceremonies uſed by the Romans, when they were received into the college of augurs. See Crown, King, and Biſhop.

The word comes from the Latin *inaugurare*, which ſignifies to dedicate a temple, or to raiſe any one to the prieſthood, having, in order to that, firſt taken auguries. See Augur, and Augury.

IMBATZKOI Novimskoi, in *Geography*, a town of Ruſſia, in the government of Tobolſk, on the Eniſei; 124 miles S. of Turuchanſk. N. lat. 63° 40′. E. long. 89° 14′.

Imbatzkoi *Verchnei*, a town of Ruſſia, in the government of Tobolſk; 168 miles S. of Turuchanſk.

IN-BOARD, a term uſed to ſignify any thing that is withinſide the ſhip; as the in-board works are all deſigned on a drawing ſo called, &c.

INCA, or Ynca, an appellation which the natives of Peru give to their kings and princes of the blood.

The chronicle of Peru relates the origin of the incas: this country had been a long time the theatre of all ſorts of wars, horrible crimes, and diſſentions, till at length there appeared two brothers, the one of whom was called Mancocapac: of this perſon the Indians uſe to tell wonders; they ſay he built the city of Cuſco, ſettled laws and policy, and taught them to adore the ſun: and he and his deſcendants took the name of inca, which, in the language of Peru, ſignifies *king*, or *great lord*. Theſe incas grew ſo powerful, that they made themſelves maſters of the whole country, from Chili to Quito, eſtabliſhing in every province their peculiar policy and religious inſtitutions, and held it till the diviſions between the brothers Huaſcar and Atahualpa; which the Spaniards under Pizarro laying hold of, made themſelves maſters of Peru, and put an end to the empire of the incas, in 1533. They number only twelve of theſe incas. It is ſaid, the moſt conſiderable among the nobles in the country ſtill bear the name of inca.

INCALESCENCE, compounded of *in*, and *calco*, or *caleſco*, *I grow warm*, the growing hot of any thing, either by motion and friction, or as quick-lime does by pouring water on it.

INCALESCENT Mercury, a name given by Mr. Boyle to ſome mercuries of an uncommon preparation; which, by being mingled with a due proportion of gold-leaves, or ſmall filings, would amalgamate and grow hot with the gold.

INCAMERATION, derived from *in*, and *camera*, *chamber*, in the *apoſtolic chancery*, the union of ſome land, right or revenue, to the domains of the pope. See Chamber.

INCANTATION, derived from the Latin *in*, and *canto*, *I ſing*, (ſee Charm, and Carmen,) *inchantment*; words and ceremonies uſed by magicians to raiſe devils; or rather to impoſe on the credulity of the people. See Conjuration, Faſcination, Magic, Witchcraft, &c.

INCAPACITY, in matters of benefices, among the canoniſts, is of two kinds; the one renders the proviſion of a benefice null in its original; the other is acceſſary, and annuls the proviſions which at firſt were valid.

Incapacities of the firſt kind, are the want of a diſpenſation for age in a minor, for legitimation in a baſtard, for naturalization in a foreigner, &c.

Of the latter kind, are grievous offences and crimes: as being concerned in ſeeing a ſentence of death executed, &c. which, they decree, vacate the benefice to all intents, or render the holding it irregular.

INCARNACION, in *Geography*, a town of Paraguay; 360 miles S. of Aſſumption.—Alſo, a town of New Navarre; 18 miles W. of Caſa Grande.

INCARNATION, in *Theology*, ſignifies the act whereby the Son of God aſſumed the human nature; or the myſtery by which Jeſus Chriſt was made man, in order to accompliſh the work of our ſalvation. The era uſed among Chriſtians, whence they number their years, is the time of the incarnation, that is, of Chriſt's conception in the virgin's womb.

This era was firſt eſtabliſhed by Dionyſius Exiguus, about the beginning of the ſixth century, till which time the era of Diocleſian had been in uſe.

Some time after this, it was conſidered, that the years of a man's life were not numbered from the time of his conception, but from that of his birth: which occaſioned them to poſtpone the beginning of this era for the ſpace of one year, retaining the cycle of Dionyſius entire in every thing elſe.

At Rome they reckon the years from the incarnation, or birth of Chriſt, that is, from the 25th of December, which cuſtom has obtained from the year 1431. In France, and ſeveral other countries, they alſo reckon from the incarnation: but then they differ from each other in the day of the incarnation, fixing it after the primitive manner, not to the day of the birth, but conception of our Saviour. Though the Florentines retain the day of the birth, and begin their year from Chriſtmas. See Petav. de Doct. Temp. Grandamicus de Dei Nat. See Æra and Epocha.

INCARNATIVE, an epithet in *Surgery*, applied to ſuch medicines as tend to promote the proceſs, by which wounds and ulcers become filled up with granulations.

Incarnative *Bandage*. See Bandage.

Incarnative *Suture*. See Suture.

INCENADA de Barragan, in *Geography*, a town of South America, ſituated on the W. bank of the Barragan, at its union with the Plata. The houſes are irregularly built, and the inhabitants are generally indolent and poor; 21 miles W. of Buenos Ayres.

INCENDIARY, Incendiarius, in *Law*, is applied to one who is guilty of maliciouſly ſetting fire to another's dwelling-houſe, and all out-houſes that are parcel thereof, though not contiguous to it, nor under the ſame roof, as barns and ſtables. A bare intent, or attempt to do this by actually ſetting fire to a houſe, unleſs it abſolutely burns, does not fall within the deſcription of *incendit et combuſſit*. But the burning and conſuming of any part is ſufficient, though the fire be afterwards extinguiſhed. It muſt alſo be a malicious burning; otherwiſe it is only a treſpaſs. This offence is called arſon in our law.

Among the ancients, criminals of this kind were to be burnt. "Qui ædes, acervumque frumenti juxta domum poſitum ſciens, prudenſque dolo malo combuſſerit, vinctus igni necatur." See Arson. See alſo Black-*act* and Fire-*cocks*.

INCENSE, from *incenſum*, q. d. *burnt*; as taking the effect for the thing itſelf; an aromatic, odoriferous reſin, otherwiſe called *frankincenſe*.

INCEPTIVE, a word uſed by Dr. Wallis, to expreſs ſuch moments, or firſt principles, which, though of no magnitude themſelves, are yet capable of producing ſuch as are. See Infinite, and Indivisible.

Thus a point has no magnitude itſelf, but is inceptive of a line which it produces by its motion. So a line, though it have no breadth, is yet inceptive of breadth; that is, it is capable, by its motion, of producing a ſurface which has breadth, &c.

INCERATION, in the *Materia Medica*, the mixing of liquids with ſomething that is dry, by a gentle ſoaking, till the compoſition be brought to a ſubſtance of the conſiſtence of ſoft wax.

INCERTAINTY, in *Law*, is where a thing is ſo ambiguouſly ſet down, that the plain meaning cannot be underſtood: and this is ſaid to be the mother of contention. The queſtions of incertainty ariſe ſometimes on matter of record, as writs, counts, pleas, verdicts, &c. and ſometimes on deeds or writings, or upon contracts, &c. (5 Rep. 121. Plowd. 25.) In law proceedings, incertainty will make them void; for all proceedings in law are to be certain and affirmative; but the defendant may be at a certainty as to what he ſhould anſwer, &c. (Plowd. 84.) If the court and verdict in an appeal be uncertain, there can be no judgment given thereon; and it is the ſame on an indictment. (3 Mod. 121.) Incertainty in deeds renders them void; but ſometimes a term for years granted by leaſe, may be made certain by reference to certainty; and incertainty may be reduced to certainty by matter, *ex poſt facto*, implication, &c. (Plowd. 6. 273. 6 Rep. 20.) If there are two men of one name, and a deviſe of lands, &c. is to one of that name, without any diſtinction, it will be void for incertainty; though perhaps an averment may make it good. (2 Bulſtrode, 180.) Incertainty in declarations of uſes, of fines, of lands, &c. is rejected in law; for otherwiſe there would be no certain inheritances. 9 Rep.

INCEST, the crime of venereal commerce between perſons who are related in a degree prohibited marriage by the laws of the country.

Some are of opinion, that marriage ought to be permitted between kinsfolks, to the end that the affection, ſo neceſſary in marriage, might be heightened by this double tie; and yet the rules of the church have formerly extended this prohibition even to the ſeventh degree, but time has now brought it down to the third or fourth degree. See MARRIAGE.

Moſt nations look on inceſt with horror, Perſia and Egypt alone excepted. In the hiſtory of the ancient kings of thoſe countries we meet with inſtances of the brother's marrying the ſiſter: the reaſon was, becauſe they thought it too mean to join in alliance with their own ſubjects: and ſtill more ſo to have married into the families of any foreign princes.

As to the Perſians, there was a ſtill more abominable ſort of inceſt practiſed by their magi: if we may truſt Catullus, carm. 91.

> "Nam magus ex matre & gnato gignatur oportet,
> Si vera eſt Perſarum impia religio."

In 1650, inceſt and wilful adultery were made capital crimes; but at the Reſtoration it was not thought proper to renew a law of ſuch unfaſhionable rigour: and theſe offences have been ever ſince left to the feeble coercion of the ſpiritual court, according to the rules of the canon law.

INCEST, *Spiritual*, is the like crime committed between two perſons who have a ſpiritual alliance, by means of baptiſm or confirmation.

INCEST, *Spiritual*, is alſo underſtood of a vicar, or other beneficiary, who enjoys both the mother and the daughter; that is, holds two benefices, the one whereof depends on the collation of the other.

Such a ſpiritual inceſt renders both the one and the other of thoſe benefices void.

INCESTUOUS, the name of a ſect or hereſy, which aroſe in Italy about the year 1065.

The hereſy of the Inceſtuous had its beginning at Ravenna; the learned of which place, being conſulted by the Florentines about the degrees of affinity which prohibit marriage, made anſwer, that the ſeventh generation, mentioned in the canons, was to be taken on both ſides together; ſo that four generations were to be reckoned on one ſide, and three on the other.

They proved this their opinion by a paſſage in Juſtinian's Inſtitutes, where it is ſaid, that a man may marry his brother's or ſiſter's grand-daughter, though ſhe be but in the fourth degree: whence they concluded, that if my brother's grand-child be in the fourth degree with reſpect to me, ſhe is in the fifth with reſpect to my ſon, in the ſixth with reſpect to my grandſon, and in the ſeventh with reſpect to my great grandſon.

Peter Damian wrote againſt this opinion, and pope Alexander II. condemned it in a council held at Rome.

INCH, a meaſure of length, in China, is $\frac{1}{10}$th of the Chineſe foot = 10 fen = 100 li = 100 hao.

INCH, *Engliſh lineal*, $\frac{1}{12}$th of an Engliſh foot = $1\frac{1}{3}$ digits or finger's breadth = 3 barley-corns = 48 hair's breadths = $\frac{1}{36}$th Engliſh yard = .938306 pouces of France = .02539185 metres of the new meaſures = .1262626 links.

INCH, *Engliſh ſquare or ſuperficial*, is $\frac{1}{144}$th, or .00694444 ſquare feet = .000644746 ſquare metres of the new meaſures of France = .01594225 ſquare links.

INCH, *Engliſh cubic or ſolid*, is $\frac{1}{1728}$th, or .000578704 cubic feet = .0000163713 cubic metres of the new meaſures of France = .00201291 cubic links.

INCH, *French, of length*, or pouce of the old meaſures of France, was $\frac{1}{12}$th of the Paris foot = 12 lines = 1.0657 Engliſh inches = .02706137 metres of the new meaſures = .1345644 links.

INCH, *Scotch, of length*, is $1\frac{1}{185}$th Engliſh inches = 1.0054054 = $\frac{1}{12}$th Scotch foot.

INCH, in *Geography*, an iſland in the bay called Lough Swilly, in the county of Donegal, Ireland. It is very fertile, and contains about 2000 acres. Its land and the adjoining ſhores are high, with cultivation ſpreading over them, and little cluſters of cabins with groups of wood. The water is of great depth, and a ſafe harbour for any number of ſhips. Inch was the great reſort of the Lough Swilly herring fiſhery, which at one time employed 500 boats, and afforded ſubſiſtence to a great number of people. A large ſalting houſe with neceſſary ſtore rooms was built in the iſland, but the profits of the fiſhery have declined.

INCH, a town of Scotland, in the county of Aberdeen; 10 miles N. W. of Inverary.

INCH-*Calloch*, an iſland of Scotland, in Loch-Lomond, on which are the remains of a conventual church.

INCH-*Colm*, a ſmall iſland of Scotland, on the northern ſide of the Frith, anciently called Amonia; on which are the ruins of a celebrated abbey of Auguſtine monks, founded about the year 1123, by Alexander I. king of Scotland, who was thrown upon it by a tempeſt, in gratitude for his eſcape, and dedicated to St. Columba. It was pillaged by the fleet of Edward III. of England, when he invaded Scotland. Some ruins ſtill remain. N. lat. 56° 3′. W. long. 3° 18′.

INCH-*Garvie*, a ſmall iſland in the Forth, oppoſite to Queensferry, fortified with cannon to defend the river.

INCH-*Keith*, a ſmall iſland of Scotland, in the Frith of Forth; ſo called from the name of a brave hero who fought valiantly againſt the Danes in 1010, to whom it was granted; 12 miles E.S.E. of Dumfermline. N. lat. 56° 3′. W. long. 3° 9′.

INCH-*Kenneth*, a ſmall iſland near the W. coaſt of Mull. N. lat. 56° 29′. W. long. 6° 10′.

INCH-*Marnoch*, a ſmall iſland, about a mile in extent, near the W. coaſt of the iſle of Bute; it has 120 acres of arable land, 40 of bruſhwood, nearly 300 of moor, together with ſtrata of coral and ſhells on the W. ſide.

Inch-*Murrin*, an iſland in Loch-Lomond, two miles long, which is converted into a deer-park. On it are the remains of a manſion, belonging to the family of Lenox.

Inch-*Point*, a cape of Ireland, between Dingle bay and Caſtlemain harbour, in the county of Kerry; 13 miles E. from Dingle.

Inch *of Candle*, a manner of ſelling goods among merchants. The method of it is thus: Notice is uſually given upon the Exchange in writing and elſewhere, when the ſale is to begin: againſt which time the goods are divided into ſeveral parcels, called *lots*, and papers printed of the quantity of each, and of the conditions of ſale; as, that none ſhould bid leſs than a certain ſum more than another had bid before. During the time of the bidding a ſmall piece, of about an inch, of wax-candle, is burning; and the laſt bidder, when the candle goes out, has the lot or parcel expoſed to ſale.

INCHASING, in *Sculpture*. See Enchasing.

INCHIGEELA, in *Geography*, a ſmall town of the county of Cork, province of Munſter, Ireland, near the ſource of the river Lee, over which it has a bridge. It is ſituated in a wild mountainous country, and is a very poor place. It is eight miles W.S.W. from Macromp, and 24 W. from Cork.

INCHIN, a ſmall iſland in the Pacific ocean, near the coaſt of Chili. S. lat. 45° 40′.

INCHOATIVE, a term ſignifying the beginning of a thing, or action; the ſame with what is otherwiſe called *inceptive*.

Inchoative *verbs* denote, according to Priſcian and other grammarians, verbs that are characteriſed by the termination *ſco* or *ſcor*, added to their primitives: as *augeſco*, from *augeo*, *caleſco*, from *caleo*, *dulceſco*, from *dulcis*, *iraſcor*, from *ira*, &c.

INCHOFFER, Melchior, in *Biography*, a learned German, was born at Vienna in 1584. Having laid the foundation of a learned education, he applied himſelf to the ſtudy of the law, and became a diſtinguiſhed proficient in it at the age of 23. He then quitted it, and entered himſelf among the Jeſuits, went to Rome and employed his time in the ſtudy of philoſophy, theology, and the mathematics. Shortly after this he was called to fill the chair of profeſſor in thoſe faculties, during ſeveral years at Meſſina, in Sicily. In 1630 he publiſhed a book entitled "The Virgin Mary's Letter to the People of Meſſina proved to be genuine." Complaints were preferred againſt him before the congregation of the "Index" at Rome, on account of this publication. He immediately repaired to the city, vindicated himſelf, and was allowed to reprint his work, with a ſmall alteration in the title. He died at Milan in 1648, when he was about 64 years of age. Having received ſome injuries from his brethren, he wrote a ſatire againſt them, which was printed after his death under the title of "Monarchia Solipſorum." Inchoffer was author alſo of "Tractatus Syllepticus, in quo quid de Terræ Soliſque motu, vel ſtatione ſecundum Sacram Scripturam et S.S. Patrum ſentiendum, &c. Oſtenditur, 1633;" "De ſacra Latinitate, de variis Linguæ Latinæ myſteriis, ex Origine, Progreſſu, Fine," &c.; "Hiſtoriæ trium Magorum;" likewiſe the firſt volume of a work entitled "Annalium Eccleſiaſticorum Regni Hungariæ," which is ſaid to have exhibited ſuch proofs of critical ſkill and deep reſearch, as occaſioned regret that the author did not live to complete his plan.

INCHTURE, in *Geography*, a town of Scotland, in the county of Perth, on the road between Perth and Dundee; 9 miles E. of Perth.

INCIDE, in *Medicine*, to *cut*, whence alſo the adjective *inciſive*, obſolete terms, applied to certain articles of the materia medica, to denote the action and quality by which certain fluids are detached from the parts to which they adhere, by an operation which has been conceived analogous to *cutting* with a ſharp inſtrument, probably from the peculiar ſenſation which they excite. Theſe *inciſives* are principally *acids*, *alkalis*, or neutral ſalts, the action of which upon the palate, and other ſenſible parts, is, from the ſame analogy, called *ſharp*. Hence alſo, in popular language, we ſpeak of *cutting the phlegm*, &c. But this action is principally a chemical *coagulation of the mucus* (as in the caſe of ſore throat), which then loſes its adheſive qualities, and is eaſily rejected; and not a mechanical diviſion of the particles, by means of the pointed and ſharp atoms of thoſe acid and ſaline matters, as the original employers of the term imagined.

INCIDENCE, in *Mechanics*, expreſſes the direction in which one body ſtrikes on another; otherwiſe called *inclination*.

In the incurſions of two moving bodies, their incidence is ſaid to be *perpendicular* or *oblique*, as their directions or lines of motion make a ſtraight line, or an oblique angle at the point of contact.

Incidence, *Angle of*, commonly denotes the angle comprehended between an incident ray, or other body, and a perpendicular to the plane in the point of incidence.

Thus, ſuppoſing A B (*Plate* I. *Optics*, *fig.* 3.) an incident ray proceeding from the radiant point A, to B the point of incidence, and H B a perpendicular to D E in the point of incidence: the angle A B H, comprehended between A B and H B, is the angle of incidence, by others called the angle of inclination.

Incidence, *Angle of*, is alſo uſed by Dr. Barrow, and ſome others, for the complement of the above angle, or of the angle of inclination.

Thus, ſuppoſing A B an incident ray, and H B a perpendicular, as before; the angle A B D comprehended between it and the reflecting or refracting plane D E, is the angle of incidence; and the angle A B H the angle of inclination.

Others, with Wolfius, make another diſtinction; which ſee under the articles Angle, Reflection, and Refraction.

It is demonſtrated by optical writers, 1°. That the angle of incidence A B H is always equal to the angle of reflection H B C, or the angle A B D to the angle C B E, and they lie in the ſame plane. See Reflection.

2°. That the ſines of the angles of incidence and refraction are to each other accurately, or very nearly in a given ratio. See Refraction.

3°. That from air to glaſs the ſine of the angle of incidence is to the ſine of the refracted angle as 300 to 193, or nearly as 14 to 9: on the contrary, that from glaſs to air, the ſine of the angle of incidence, is to the ſine of the refracted angle as 193 to 300, or as 9 to 14. See Refraction.

It is true, ſir Iſaac Newton having ſhewn, that the rays of light are not all equally refrangible, there can be no preciſe ratio fixed between the ſines of the angles of refraction and incidence: but the proportion which comes neareſt is that above ſpecified. See Light, Colour, Refrangibility, &c.

Incidence *of Eclipſe*. See Eclipse and Immersion.

Incidence, *Axis of*. See Axis *of incidence*. Such is the line B H; *fig*. 3.

Incidence, *Cathetus of*. See Cathetus *of incidence*; ſee alſo Reflection.

Incidence, *Line of*, in *Catoptrics*, denotes a right line, as A B (*fig.* 3), whereby light is propagated from a radiant point A, to a point B, in the ſurface of a ſpeculum. This is alſo called an *incident ray*.

Incidence, *Line of*, in *Dioptrics*, is a right line, as A B, *Plate* VI. *fig.* 4. whereby light is propagated unrefracted, in the ſame medium, from the radiant point to the ſurface of the refracting body H K L I.

Incidence, *Point of*, is the point B on the ſurface of the reflecting or refracting medium, in *Plate* I. *fig.* 3. and *Plate* VI. *fig.* 4. on which the incident ray falls.

Incidence, *Scruples of*. See Scruples.

INCIDENT, in a general ſenſe, denotes an event, or a particular circumſtance of ſome event.

Incident, in *Law*, is a thing appertaining to, or following another, that is more worthy or principal. A court-baron is inſeparably incident to a manor; and a court of pie-powders to a fair.

Incident, in a *Poem*, is an epiſode, or particular action, joined to the principal action, or depending on it.

A good comedy is to be full of agreeable incidents, which divert the ſpectators, and form the intrigue. The poet ought always to make choice of ſuch incidents as are ſuſceptible of ornament ſuitable to the nature of his poem. The variety of incidents well conducted makes the beauty of an heroic poem, which ought always to take in a certain number of incidents to ſuſpend the cataſtrophe, that would otherwiſe break out too ſoon.

Incident *Ray*. See Ray, Incidence, and Inclination.

Incidents, in the *Materia Medica*. See Attenuants.

INCINERATED Salts, the ſame with lixivial ſalts. See the following article, and Lixivial.

INCINERATION, derived from *in*, and *cinis*, *aſhes*, in *Chemiſtry*, the reduction of vegetables into aſhes, by burning them gently.

Thus fern is incinerated for the making of glaſs.

INCISED Wounds, wounds made with ſharp-edged, cutting inſtruments. See Wounds.

INCISION, the ſame as inciſed wound.

Incision, *Crucial*. See Crucial.

Incision, *grafting by double*. See Grafting.

INCISIVUM Foramen, in *Anatomy*, a hole in the bony palate, juſt behind the inciſor teeth, forming a communication between the palate and the naſal cavities. See Cranium.

INCISIVUS, or Incisorius, an epithet applied by Winſlow to ſome muſcles about the lips. The inciſivus medius is the depreſſor alæ naſi. (See Depressor.) The inciſivus lateralis is the levator labii ſuperioris. (See Deglutiton.) The inciſivus inferior is the levator menti. See Deglutition.

The openings leading from the noſe to the palate have been called ductus inciſivi.

INCISORES, the four front teeth of each jaw; ſo named becauſe they poſſeſs ſharp cutting edges. By Linnæus they are called dentes primores. See the deſcription of the teeth in the article Cranium.

INCISORIUM, from *incido*, to cut, the table for operations and diſſections, uſed by ſurgeons and anatomiſts.

INCISORIUS, in *Anatomy*. See Incisivus.

INCLAVE, in *Heraldry*, a term uſed by Morgan to expreſs an irregular line in heraldry, differing from the indented, invected, and all the others. It is called by ſome patee, and by others the dove-tail line, from its reſemblance to that joint, known among our joiners by this name. It is alſo called by ſome the labelled line. It has theſe names from the figure of the points, as they proceed from the ordinary, ſuch as a chef or feſs reſembling the ends of labels.

INCLINATION, in *Medicine* and *Chemiſtry*, the operation of pouring off a clear liquor from ſome fæces, or ſediment, by only gently ſtooping the veſſel.

This amounts to the ſame with what is otherwiſe called *decantation*.

Inclination, in *Phyſics*, expreſſes the mutual approach or tendency of two bodies, lines, or planes, towards one another; ſo that their directions make at the point of contact an angle of a greater or leſſer magnitude.

Inclination *of a right line to a plane*, is the acute angle which ſuch a right line makes with another right line drawn in the plane through the point where the inclined line interſects it, and through the point where it is alſo cut by a perpendicular drawn from any point of the inclined lines.

Inclination *of Meridians*, in *Dialling*, the angle that the hour-line, on the globe, which is perpendicular to the dial plane, makes with the meridian.

Inclination *of an incident ray*, otherwiſe called the *angle of inclination*. See *Angle of* Incidence.

Inclination *of a reflected ray*, is the angle which a ray after refraction makes with the axis of inclination.

Thus, if A B, (*Plate* I. *Opt. fig.* 3.) be the incident ray, H B a perpendicular to D E in the point R, and B C the reflected ray, C B H will be the inclination of the reflected ray, and A B H the inclination of the incident ray.

Inclination *of the axis of the earth*, is the angle which it makes with the plane of the ecliptic: or the angle between the planes of the equator and ecliptic.

Inclination *of the magnetic needle*. See Dipping-*needle*.

Inclination *of a planet*, is an arc or angle comprehended between the ecliptic, and the plane of a planet in his orbit. See each planet.

Inclination *of a plane*, in *Dialling*, is the arc of a vertical circle, perpendicular both to the plane and the horizon, and intercepted between them.

To find this, take a quadrant, and apply its ſide to the ſide of a ſquare, and apply the other ſide of your ſquare to your plane: if the plumbet fall parallel to the ſide of the ſquare, then the lower ſide of the ſquare ſtands level;. by which draw an horizontal line, whereon erect a perpendicular, and apply your ſquare to that perpendicular; and if the plumbet falls parallel to the ſide of the ſquare, then that is alſo a level line, and your plane ſtands horizontally: if the plumbet fall not parallel to the ſide of the ſquare, then turn your ſquare, until it does; and draw an horizontal line, on which erect a perpendicular, to which apply your ſquare, and obſerve what angle your plumbet makes on the quadrant, with the ſide of the ſquare: that is the angle of the inclination of the plane. See Declination.

Inclination *of two planes*, is the acute angle made by two lines drawn one in each plane, through a common point of ſection, and perpendicular to the ſame common ſection.

Thus, in *Plate* VIII. *Geometry*, *fig.* 101. the inclination of the plane K E G L to the plane A C D B, is the angle H F I, made by the right lines H F and F I in the point F, perpendicular to the line of ſection E G.

Inclination, *Angle of*, in *Optics*, is the ſame with what is otherwiſe called the *angle of incidence*.

Inclination, *Argument of*. See Argument.

Inclination, in a moral ſenſe. See Appetite.

Inclination, in *Mining*, is uſed ſometimes to expreſs the fall or declivity of a ſtratum which deviates from the horizontal, or a mineral vein, windike, or fault, which deviate from the vertical, and ſuch ſtrata or fiſſures are ſaid to dip, deep, pick, decline, tilt, have a declivity, or to hade, want, batter-off, underbeat, &c. in different diſtricts or ſituations. See Dip and Hade.

INCLINED Plane, in *Mechanics*. See *Inclined* Plane. See alſo Mechanics, and Mechanical *powers*.

Inclined *Planes*, in *Engineery*, are ſtrong frames of wood or maſſes of earth and maſonry, formed into an inclined plane at top, on which a ſingle or double rail or tram-way is laid for drawing up and letting down boats or waggons from one water level of a canal to another, or from one part of a rail-way to another, where a deficiency of water prevents the uſe of locks, or the deſcent is too rapid for a rail-way to deſcend: formerly, inclined planes for boats were called rolling bridges. In our article Canal we have given the principles of ſetting out and conſtructing inclined planes, and inſtanced all the moſt conſiderable works of this kind in Great Britain.

Inclined *Plane*, in *Rural Economy*, a term applied to that ſort of plane which forms an oblique angle with the horizon. In the conſtruction of carriage-ways for the conveyance of different kinds of heavy loads up ſteep elevations and other riſing grounds, this mode has lately been had recourſe to with much advantage, in enabling great weights to be drawn on them with much leſs power of draught. In collieries, and other ſimilar extenſive works, roads formed on this principle are frequently found highly beneficial. It has been lately obſerved, that though this ſort of convenience may have hitherto been principally confined to coal works, mines, and other undertakings of the ſame nature, the period is now at hand “when carriages, moving on level ſurfaces, or on gently inclining planes, with little friction, and without obſtruction, are faſt ſpreading over the face of the country.” Beſides thoſe which have been noticed, there are many other uſes and ſituations in which they may be employed with the utmoſt utility and advantage. See Railways.

Inclined *Towers*. See Towers.

INCLINERS, in *Dialling*. See Dial, and Decliners.

INCLOSING *of* Land, in *Agriculture*, the act, operation, or proceſs of taking in and dividing grounds by means of fences. The advantages that neceſſarily reſult from the incloſure of land, whether in a ſtate of waſte, common, or otherwiſe, are extremely numerous, and of the moſt material conſequence to the community. It has been obſerved, that “in addition to thoſe of aſcertaining and ſecuring the property, it holds out not only the moſt ready and certain means of improvement in the cultivation of the former, but in ſuch as have been long under the plough, or any other ſyſtem of management; being equally uſeful in its tendency to bring them into the moſt perfect and advantageous ſtates of culture. Without incloſing, it is conceived, however, much attention may have been paid, or expence incurred, in carrying on the various proceſſes that are requiſite in preparing land for the reception and growth of good crops; whether of the grain, root, or graſs kinds, it is obvious that they can neither be conducted under the moſt beneficial management, nor yield the full advantage they are capable of, while they continue in a free and open ſtate. Where the land is in a ſtate of arable cultivation without incloſure, the crops, of whatever ſort they may be, muſt conſtantly be expoſed to depredations of various kinds; and if in the ſtate of graſs or paſture, injuries of the moſt prejudicial nature muſt frequently be unavoidably ſuſtained. And the great advantage and importance of incloſing land are ſtill more fully demonſtrated in the differences which may be obſerved in reſpect to the quantity and value of the produce, in ſuch as have been thus divided, over that which is cultivated in the ſtate of open or common field.” It has been ſtated by Mr. Donaldſon, that “in proportion as a field or a country is bleak, naked, and expoſed to chilling blaſts and winter ſtorms, in the ſame proportion will it be unproductive, compared with lands more favourably ſituated. Incloſing is a mean of obtaining, by art, a certain degree of that genial warmth ſo eſſential to the production of valuable crops, but which nature is not always pleaſed to beſtow. Every day's experience proves that where grounds are ſheltered from the violence of ſtorms, as by garden walls, or by plantations of foreſt trees, they are more productive, and vegetation is earlier than in others ſimilar in every reſpect, unleſs in regard to expoſure. How many inſtances occur to eſtabliſh this fact in reſpect to large fields, as well as to gardens, orchards, &c. Let the obſervant farmer, who poſſeſſes an incloſed farm, examine that part of a field where, owing to the decay of fence, the wind enjoys a free paſſage, and he will be ſatisfied of the benefit of incloſing, from the ſuperiority of the crop in the other part of the field over that which is within the influence of this additional expoſure. While, on the other hand, the poſſeſſor of an open field farm, by examining the ſuperior verdure that takes place in any part of an open field, that is, by ſome accidental circumſtances ſheltered in a remarkable degree, may ſatisfy himſelf, that were the whole equally ſheltered, the produce would be more abundant.” In the Mid-Lothian Report it is likewiſe ſtated, that “as the warmeſt air lies neareſt the ſurface of the earth, being that portion of the atmoſphere, which, like a blanket, nature ſpreads over the ſoil and its productions, fences of all kinds tend more or leſs to prevent ſuch a valuable covering from being blown off by the winds.” Indeed, by judicious fencing in, or incloſing of land, there can be no doubt but that warmth and ſhelter is afforded to cattle of various kinds. Under theſe circumſtances, animals are invariably found not only to advance in fleſh much more rapidly, but to be freer from diſorders, than when kept in ſituations or expoſures that are bleak, and which cannot afford warmth or ſhelter to them. “If any perſon entertain doubts reſpecting the incloſed paſtures being better adapted for rearing and fattening live ſtock than open fields, he may eaſily ſatisfy himſelf by comparing the live ſtock in an incloſed pariſh with that of one in the open field ſtate.” It is ſuppoſed there muſt be much miſtake “if he will not find them in the latter, not only fewer in number, but each animal, on an average, thirty or forty per cent. inferior in value.” In fact, incloſing, it is conceived, “may be denominated the firſt ſtep towards effecting improvements in the breeds of the different ſpecies of live ſtock. And on the whole, this “is reaſoning on plain eſtabliſhed facts, and on ſuch as afford the moſt indubitable evidence of the ſuperiority of incloſed fields, whether for tillage or paſturage. Were farther proof neceſſary, the additional rent that is every where paid for incloſed land, beyond that paid for land of an equal quality in the open field ſtate, is ſufficient to place the matter beyond all poſſibility of doubt.”

Beſides, the value of the land in moſt ſituations is conſiderably improved by the practice of incloſing. The proportion of increaſe that may be produced in this way, whether the lands incloſed be in a ſtate of leaſe, or in the occupation of the proprietor, muſt, however, neceſſarily depend greatly on the nature of the ſoil, and the ſyſtem of management that is afterwards purſued.

In a work on modern agriculture it is remarked, that “lands of a middling quality, good turnip ſoil for inſtance, are probably benefited to a greater degree by incloſing, than thoſe of ſuperior or inferior quality. Lands of this deſcription, in the open field ſtate, may, it is contended, be conſidered as rented to the full at fifteen ſhillings per acre; whereas there are few inſtances where ſuch lands, when incloſed, are rented under twenty ſhillings; an advance ſo great as to afford the proprietor a handſome profit after paying the intereſt of the money expended. Thus does incloſing not only increaſe the quantity and quality of the produce, ſo as to enable the farmer to pay his landlord a higher rent, and to contribute a larger ſhare to the revenues of the ſtate, but from ſo many people being conſtantly employed in making and repairing the fences, incloſing, in this view, muſt alſo be conſidered as beneficial."

It muſt, however, be allowed, that there are in many diſtricts of this kingdom extenſive, barren, and mountainous tracts of ground that are not capable of ever being incloſed with the leaſt chance of advantage; or which, if they could be incloſed, could never derive any amelioration or improvement from it: the only methods in which they can be bettered, is by being rendered in ſome ſituations more free from injurious ſurface moiſture, by judicious drainage, or the introduction of better breeds of the ſeveral kinds of domeſtic animals which may be turned upon them. Some of the large ſheep farms in different parts of Scotland, as in the ſhire of Peebles and the Highlands, are much in this ſtate, no other ſort of incloſing being neceſſary than merely a *ring fence*, or boundary round the different farms. And where any kind of incloſures become requiſite within ſuch fences, they are ſimply ſuch as permit of the culture of a ſmall number of acres for the uſe of the farmeries, or in the view of forming plantations for protection and ſhade, &c.

In other ſituations where the lands are capable of being cultivated almoſt conſtantly under the grain ſyſtem, incloſing, at leaſt with any kind of high fences, may, in a great meaſure, if not wholly, be unneceſſary. But, in common, where lands are proper for being cultivated under a ſyſtem of huſbandry, ſuch as that of alternating graſs or other kinds of green crops with thoſe of grain or root crops, and in that way having the means of combining improvement in the breed of live ſtock with that of the cultivation of grain, the practice of incloſing muſt always be neceſſary and advantageous in a high degree.

Yet, however advantageous in theſe different points of view the benefits reſulting from the incloſing of lands may be, the practice is far from being ſo much promoted and attended to as its importance ſeems to deſerve. And it is probable that this may in ſome meaſure have proceeded from the great difficulty that neceſſarily attends the buſineſs in almoſt every inſtance, and particularly where waſte or common field lands are to be incloſed, on account of the great diverſity of claims upon them, as well as ſometimes from the improper management of the perſons who have the direction of the buſineſs. Where incloſures of this ſort are to be made, the circumſtances that are chiefly to be regarded are thoſe of the rights of the different claſſes of claimants, without any diſtinctions, the aſcertaining fully the nature and extent of the land to be incloſed, the proviſion of proper cottages for the poor in the acts of incloſure, and the appointment of commiſſioners duly qualified for the execution of the buſineſs.

It has been remarked by Mr. Somerville, in a paper on the different modes of forming incloſures, in the ſecond volume of "Communications to the Board of Agriculture," that incloſing has long been conſidered, and very juſtly, not only as a certain means of improving waſte and uncultivated lands, but alſo as an eſſential requiſite to the completion of improvements upon the beſt ſoils, and ſuch as have been long under tillage. For whatever care or expence may have been employed in clearing, draining, tilling, manuring, weeding, &c. the whole of the benefits reſulting from theſe can never be completely united, while the ſoil remains in an open unincloſed ſtate. When the fields are in graſs they cannot be paſtured to advantage without fences; and when they are in tillage, the crops, of whatever kind they may be, are expoſed to every injury that can be ſuffered from the encroachments of ſheep, cattle, or other animals. In many of the counties throughout the kingdom, the features of this improvement are ſtrongly marked, and the ideas of ſhelter, ornament, and increaſed produce, are viſible to even the moſt ſuperficial obſerver, and afford a very juſt comparative eſtimate of the advantages to be derived from incloſing, by contraſting the value of lands that are incloſed with others of the ſame quality that ſtill remain in an open field ſtate; the ſaving in point of labour, the perfect ſecurity to the crop while the lands are under tillage, together with the warmth and ſhelter afforded to the ſtock and herbage when the fields are in paſture, form a ſtriking contraſt when compared with the open, unſheltered, unprotected, and unproductive ſtate of unincloſed fields. Obvious as theſe advantages are, it is to be regretted that the ſyſtem of incloſing has, in too many inſtances, met with much oppoſition; and even in thoſe caſes where its benefits are clearly aſcertained, much difference of opinion ſtill exiſts, with regard to the nature of the fences requiſite for different ſituations, the materials or plants that ſhould be uſed, the beſt mode of executing them, and the ſeaſon of the year moſt ſuitable for doing the work. The oppoſition ſo often made to bills of incloſure brought into parliament is a very ſtriking proof of the former; and the little judgment that is ſhewn in accommodating the fence to the natural circumſtances of the fields to be incloſed is concluſive as to the latter. It too often happens that proprietors and farmers, without duly conſidering either the nature of their ſoil or its local ſituation, reſolve upon and adopt a mode of incloſing which they have ſeen ſucceſsful in other places, without once conſidering that the ſoil, climate, and other circumſtances, which combined to render the plan ſucceſsful in the ſituations they wiſhed to copy, are totally wanting in theirs. Owing to this much money is expended and many attempts prove abortive; the ſyſtem of incloſing falls into diſcredit, and is conſidered as impracticable in many caſes where good and laſting fences might be reared at the ſame, perhaps leſs, expence than ſuch as have failed. The reaſon commonly aſſigned is the rigour of the climate, while the true and only cauſe is, the ignorance or want of diſcernment in the perſons who make theſe unſucceſsful attempts.

Indeed the miſtakes committed in this way are innumerable. Sometimes live fences are planted in ſituations, and upon ſoils where it is impoſſible they can grow, far leſs arrive at perfection; and where ſubſtantial ſtone fences could be made, not only at little expence, but the building of which, by collecting the ſtones, would rid the adjoining ſurface of a nuiſance, and remove an incumbrance which too often conſtitutes a material bar to its cultivation. The diſcernment neceſſary to diſcover this is not great; notwithſtanding which, we too frequently have occaſion to obſerve large fields incloſed, either with dwarfed, crabbed, ill-grown hedges, and rotten decayed palings, or with turf or earthen mounds, obtained by paring off the beſt part of the ſurface ſoil; while the fields thus wretchedly incloſed by fences, which, on account of their inutility and periſhable nature, muſt one day be abandoned, are covered with numerous large ſtones, the removal of which is an eſſential requiſite to their improvement. The ſame circumſtance often happens where live fences might be reared, which, in every inſtance where they can be brought to perfection, are to be conſidered as preferable to any other. In place of making the hedge with ſuch plants as are ſuited to the ſoil and climate, they are often directly oppoſite—dwarf, ſtinted, white-thorn hedges being very frequently ſeen upon cold wet lands, and in bleak expoſed ſituations; upon which, if beech, black-thorns, or crabs, had been planted, they would have grown readily, and made complete fences in a very ſhort time. In other inſtances the fence fails, or becomes faulty, from circumſtances which the planter may be diſpoſed to conſider as immaterial. For example, in incloſing a large field, a great part of the outline of which is wet, if white-thorns are planted in the ordinary way upon the common ſurface, they will never make a good fence; whereas by planting them in the face of the bank of earth thrown out of the ditch, being thus raiſed above the level of the field, and placed upon a dry bed, they thrive, and ſoon eſtabliſh themſelves; while upon very dry lands, with open bottoms that poſſeſs little capacity for retaining moiſture, the hedge very often dies from an oppoſite cauſe. When the plants are ſet upon the mound raiſed above the common ſurface, if the ſeaſon is but commonly dry, their growth is conſiderably impeded from the want of moiſture; and in ſevere winters, from the porous nature of the ſoil, the froſt gets acceſs to the roots, and either kills whole rows or lines of hedges in a few weeks, or ſo far hurts them as to check their future growth and improvement.

And it is ſtated, that in peruſing the different county reports, all the ſurveyors concur in opinion as to the utility of incloſures; but that it is mentioned by ſeveral of them, in terms of regret, that the obſtacles thrown in the way of this valuable improvement, by ignorance and obſtinacy, are great and manifold. In ſome caſes they ſpeak in terms of the higheſt panegyric of the utility, cheapneſs, and durability of certain fences, ſuch as quicks, beeches, crabs, &c. when they are planted upon the ſoils to which they are reſpectively the beſt adapted; while in others they mention, in pointed terms, the periſhable nature and tranſitory value of many of the fences employed, the annual expence required to keep certain deſcriptions of them in repair, (the dead hedges and palings,) and the great extent of valuable ground that is occupied by the others, eſpecially the incloſures made by double ditches with a bank between them and a hedge on each ſide, and of the common hedge and ditch, and hedge and bank, which, at the ſame time that they occupy a conſiderable ſpace of ground, are very ſeldom good fences, in ſome inſtances covering thrice, and in others four times the ſpace that a fence of a different kind would do, if properly kept. Great contrariety of opinion alſo prevails in regard to making trees a part of the incloſure, either in hedge-rows or belts of planting. From ſuch diverſity and oppoſition of ſentiment, it is difficult to form any fixed or certain opinion upon the ſubject in queſtion.

The different points to which the proprietor or occupier ought to pay particular attention, before he commences any plan of incloſure, would ſeem to be

1ſt. The nature of the ſoil.

2dly. Its preſent worth, and the increaſe of value expected from incloſing it.

3dly. The objects to be attended to in making incloſures; and whether the greateſt value of the fences is expected to ariſe from their ſimply confining their ſtock, or from their affording ſhelter to both ſtock and crop, or from the union of ſhelter and incloſure.

4thly. The modes of incloſure ſuited to the natural circumſtances of the ſoil, climate, &c.

5thly. The materials for making the fences, and the means of obtaining them. And,

6thly. Expence, which is another important point to be conſidered, but which muſt depend upon ſo many local circumſtances, that it is impoſſible to form any eſtimates that could be of much ſervice in guiding the improver.

Nature of the Soil.—In reſpect to this, a careful inquiry ſeems to be one of thoſe requiſites eſſential to the ſucceſs of every plan of incloſure; for though there are, comparatively ſpeaking, few ſituations, however elevated above the level of the ocean, and ſcarce any deſcription of ſoil, where a good live fence may not be reared, with one ſort of plant or another, yet it is an object of the firſt importance to know the plants beſt ſuited to every variety of ſoil, as, by a judicious choice of theſe, much loſs and difficulty is avoided, and good ſubſtantial fences are made in a ſhort time, and in many ſituations where, from a miſtake as to the plants employed, the fence has languiſhed for years, and ultimately periſhed, notwithſtanding every care that could be beſtowed upon it. In ſome inſtances, we have known twenty years experience barely ſufficient to undeceive thoſe who had made miſtakes of this kind. In a few caſes, however, where this obſtinacy has given way to common ſenſe and obſervation, and where the plants of which the hedge was originally made have been taken up, and others better adapted to the ſoil ſubſtituted in their room, theſe laſt have, without much trouble, made a good fence in a very ſhort ſpace of time, and with very little trouble.

It is well known that white-thorns, or quicks, as they are commonly called, are reared with great eaſe, and, under proper management, ſoon make uſeful and handſome fences upon all dry ſoils, provided the ſituation is not too high and expoſed. In ſuch places, though the plants do not periſh entirely, they never attain the ſtrength or vigour neceſſary to make a good fence. In caſes where the natural ſurface of the ground is rather too moiſt for white-thorn, the exceſs of damp may be carried off by a ditch on one ſide of the plants in the uſual way. In marſhy ſituations, where a ditch on one ſide would be inſufficient to lay the ſoil dry enough for the ſucceſs of white-thorns, it ought to have a drain on each ſide of the bank on which the thorns grow, and which would be particularly favourable for the growth of aſh-poles and various other ſorts.

But in every caſe where thorns are planted upon the common ſurface without a ditch, and upon dry ground that has been previouſly prepared by dung, lime, &c. they grow better than where ditches are uſed, becauſe the ditches ſerve as open drains to carry off the moiſture, a circumſtance which in dry ſeaſons is often very detrimental to the growth of the hedge. Except in weeding, the thorns ſhould not be touched for the firſt four or five years of their growth, unleſs it be to crop the moſt luxuriant of the lateral ſhoots: at the end of that time they ſhould be completely trimmed and put into ſhape, leaving the top ſhoots untouched, till the hedge attains the neceſſary height; when this ought alſo to be cut over, and its farther growth upwards prevented by regular yearly cuttings afterwards. See Fence and Hedge.

And black-thorns, crabs, &c. may frequently be treated in nearly the ſame manner as the white-thorn. There is, however, one remarkable difference between them, which is, that both the crabs and black-thorns will thrive, and become good fences, in ſituations where the white-thorn would periſh: upon *tills* and clays, for example, many fields of that deſcription are completely incloſed with them, which could never have been rendered fencible if white-thorns had been employed. Alſo, the holly, when properly attended to, forms a thick and beautiful fence, and has an advantage over moſt others in affording the ſame degree of ſhelter at all ſeaſons. It grows well upon all ſoils, but particularly upon deep and moderately dry loams. Its progreſs is, however, ſlow, even in the moſt fortunate ſituations, which renders it unfit for common uſe; unleſs in pleaſure-grounds, or places where taſte or fancy requires it. When intermixed with the white-thorn it is, however, more rapid in its growth, and forms a moſt beautiful kind of fence.

But the uſe of beech, for the purpoſes of fences, has not hitherto been very common; they are, however, faſt coming into uſe, and perhaps will ſoon be the only kind employed in the uplands, or upon the cold wet ſoils in the lower diſtricts of the kingdom; for theſe ſituations, ſo far as the experience of ſeveral parts of Scotland can aſcertain that point, they are, it is ſaid, remarkably adapted. In Eaſt Lothian there are ſeveral tracts of land, the ſoil of which is of a very inferior quality, that have had their value greatly increaſed, by incloſing them with beech hedges, upon which thorns were formerly tried without ſucceſs, and much trouble and expence incurred in the attempt; while the beeches, which originally coſt no more than the thorn, without any trouble, very ſoon become good fences. Along with their growing ſo readily in theſe unfavourable ſituations, they poſſeſs a property well ſuited to a cold or expoſed country; namely, that of preſerving their leaves through the winter, and indeed till an advanced period in the ſpring; by which they afford ſhelter to the grazing ſtock, and alſo to the paſture in the early part of the ſeaſon, when it is apt to be hurt by the cold, nipping, froſty winds. The birch is likewiſe peculiarly adapted to cold clays, where it ſeldom fails to thrive, and form a good fence; ſome caution, however, is neceſſary as to the management of it. It is alſo ſaid to be the only plant which ſucceeds in the ſandy rabbit-warren land, ſuch as is found in ſome parts of Suſſex. In all caſes where it is intended to cut or plaſh it, the operation ſhould be done about the end of autumn, as the juices are at that time retiring to the root, and long before the circulation is again renewed the wounds are healed: whereas, when the cutting is deferred till the ſpring, or beginning of ſummer, when the circulation is going on, the juices flow out by the wound, and continue to run off in that way during the whole of ſummer; by which means the plants are ſo weakened and exhauſted, that many of them die, a misfortune which is entirely prevented by cutting about the end of autumn, or during the winter ſeaſon.

Upon all wet or marſhy grounds, willows, alders, and poplars thrive, and are extremely uſeful in completing incloſures in many ſituations, where other plants would either periſh entirely, or remain in a dwarf ſtinted ſtate. In Huntingdonſhire, and ſeveral of the fenny parts of England, theſe plants, in conjunction with the alder, form almoſt the only deſcription of live fences that are met with: their value in thoſe parts is well known; and in every ſimilar ſituation throughout the kingdom, if proper trials were made, they would be found equally uſeful. Hedges made with willows have an advantage over almoſt every other, as, after the hedge has arrived at a certain height, and is properly laid down and bound together, the young ſhoots may be annually taken off, and ſold to baſket-makers for a conſiderable ſum of money. They have another obvious advantage, namely, the eaſe with which they are propagated, being raiſed by ſimple cuttings, without any other trouble than that of merely ſticking them into the earth. Where this is practiſed, and in moſt ſituations it may be done with great eaſe, the farmer or proprietor will not only have his fields incloſed, but the fence will be converted into a ſource of revenue, by the ſale of the young ſhoots yearly. Where the Huntingdon willow is uſed, a farther emolument may ariſe to the proprietor, by allowing a certain proportion of the plants to run up into trees; with very little care they ſoon arrive at a great ſize, and are of conſiderable value; the wood is ſoft, eaſily wrought into any form, takes a fine poliſh, and can be ſtained of any colour. The uſe of willows, poplars, &c. is not confined ſolely to wet or marſhy grounds, they thrive upon almoſt every ſoil, and, indeed, make more progreſs upon ſuch as are moderately dry than upon very wet lands; upon the latter, however, they grow better than any other plant, and on that account deſerve a preference in many caſes.

And the hazel, elder, &c. are plants which grow well upon all dry ſoils, and, if properly managed, by laying wattling, &c. produce wood enough to form a very ſufficient fence; but their want of prickles render them leſs eligible than thorns. The elder poſſeſſes a property which, along with the beauty of its flowers, will give it a preference to moſt other plants in many ſituations; namely, that of its being propagated from cuttings, with as much eaſe as the common willow. Where the hazel is uſed for incloſing with, and the proprietor is diſpoſed to take the neceſſary trouble, it may be rendered very uſeful, by cutting the hedge within four feet of the ſurface every ſecond or third year, and ſelling what is cut off to coopers or baſket-makers: hazels are well known to make the beſt and moſt durable hoops, and generally bring a high price for that purpoſe in moſt ſituations.

Though the larch has not hitherto been much uſed as a hedge plant; yet, from its growing ſo readily, and bearing the operation of clipping ſo well, it ſeems very much adapted for that purpoſe. In expoſed ſituations, where thorns would fail, the larch would be found an excellent ſubſtitute, and many fields may be incloſed with it that would otherwiſe remain open. Where it is intended to incloſe a field with larches, the plants made uſe of ſhould be at leaſt ſeven years old, and the ſtrongeſt that can be obtained of that age. They ſhould be taken up in the moſt careful manner, preſerving the whole of the roots, and planted in a trench where a conſiderable quantity of dung or compoſt has been put. The moſt proper ſeaſon for this operation is about the end of November, or in the early part of January; at either of which periods, if they are carefully lifted, and replanted without any deſtruction of the roots, they will ſuffer no check whatever, and grow readily and vigorouſly in the ſpring. It is worthy of notice that the tops ought never to be allowed to exceed the height of ſix feet; becauſe, after they paſs that height, the wind has ſo great an effect upon them as to deſtroy any binding that may be made with their lower branches; cutting the tops has alſo another beneficial effect, namely, that of making them puſh out more vigorouſly below. Larches have, however, one defect, in common with hazels and ſome other plants, namely, the want of prickles, which certainly impairs the value of any fence made with them; as neither ſheep nor cattle are diſpoſed to reſpect any hedge ſo much as thoſe that are made with plants of the prickly kind.

The whin, or furze, is alſo a plant that is known to grow ſpontaneouſly, and attain a great ſize upon ſoils and in climates where ſcarcely any other would live. In all caſes where whins are found growing naturally, and of any conſiderable ſize, hedges of them may with ſafety be attempted: but as the whin ſeldom grows to any conſiderable height, hedges are not often made with it. This material, however, forms a good fence when a ſufficient number of plants can be reared and brought to perfection; and, from its numerous prickles, very effectually prevents both horſes, ſheep, and cattle, from attempting to break through it. It has, however, one defect, and that is conſiderable ; being raiſed a good deal above the common ſurface, the plants are expoſed to many accidents, ariſing from drought, froſt, &c. ; accordingly it often happens in ſevere winters, that whole lines of whin hedges are killed at once, and of courſe much labour and expence thrown away.

There are, beſides theſe, ſeveral other kinds of plants, ſuch as the bramble, mulberry, &c. ; and various ſorts of fruit trees and ſhrubs, ſuch as the gooſeberry, &c. that may be occaſionally employed in the ſame intention with advantage, though they have not yet been much had recourſe to in ſuch a view.

Preſent Value of the Soil, and the Improvement of it by Incloſure.—It may be remarked that in every plan of improvement, whether by incloſing or otherwiſe, it is very material to aſcertain the preſent worth of the land, and the probable increaſe of value that may be expected from the undertaking ; for unleſs this point is judiciouſly weighed, the operations will proceed at random, and much labour and expence may be incurred without any adequate advantage reſulting therefrom. For much and juſtly as the advantages of incloſing are extolled, (and they are unqueſtionably great,) there are certain circumſtances of ſoil and local ſituation that bid complete defiance to this and every other attempt at improvement. For example, in high rocky ſituations, where the ſoil is not only thin, but of a bad quality, where the lands can never be ſubjected to the plough, and where the herbage is not likely to be much ameliorated by ſhelter, little benefit will be derived from incloſing. The only advantage reſulting from the practice in ſuch caſes ſeems to ariſe from the ſaving of a ſhepherd's wages, which, when the ſtock are paſtured in an incloſed field, is rendered unneceſſary ; but which, if accompanied with no other advantage, will be found a paltry equivalent for the expence of incloſing the ſoil. On the contrary, however high or expoſed the ſituation may be, if the ſoil is of a good quality, and a ſpecies of plants can be met with of a nature ſo hardy as to bear the climate, the value of the property will be ſo far improved by the ſhelter ariſing from the fence, as amply to compenſate the expence incurred in making it. In many of the bleakeſt and moſt expoſed ſituations in Britain, the ſoil, though greatly elevated above the level of the ocean, is equal in quality to what is met with even in the moſt favoured ſituations, and for the moſt part requires nothing but ſhelter and judicious culture to render it highly valuable. In detailing the different kind of fences, eſpecially that known by the name of hedge and belt of planting, an opportunity was taken of pointing out ſeveral inſtances, where the mode of incloſing has benefited the property ſo incloſed, in a tenfold proportion, in a very few years. Upon this point it remains only to hint, that every perſon, whether proprietor or farmer, ſhould, before he commences his operations, pay very particular attention to the preſent value of property in an unincloſed ſtate, and the extent to which it may be improved by incloſing ; as without ſuch previous knowledge, in place of being repaid by the pleaſure ariſing from ſeeing the property ornamented and improved in proportion to the trouble and outlay of money, large ſums will often, it is ſuppoſed, be expended, without adding to the general appearance of the country, or materially contributing to augment the value of the ſoil and property.

Objects to be regarded in forming Incloſures.—It may here be noticed, that, in ſome ſituations, all that is required is merely the confinement of the ſtock, in others, ſhelter to the ſtock and herbage are the principal objects; but in a great majority of caſes, the union of both is neceſſary to complete the ſyſtem of incloſing. In wild low ſituations perhaps a ſtone wall, or a low thorn fence, will anſwer every purpoſe required, and produce every benefit that could be expected from the incloſure ; yet theſe fences would be found totally incompetent to the purpoſes of incloſure in the hilly and upland parts of the country ; for, though confining the ſtock might be completely anſwered by either, the important requiſite of ſhelter would be entirely wanting. Other matters of equal importance ought to enter into the conſideration of perſons incloſing. The ſeparation of the ſoils incloſed, ſo as to render that of each field as nearly as poſſible of an uniform quality, the ſeparation of ſtock as may be thought moſt adviſable, together with the ſecuring a ſufficient ſupply of good water, are requiſites ſo eſſential to the ſucceſs of the undertaking as to entitle them to a high degree of attention. Mr. Donaldſon, in ſpeaking of incloſures, ſays, that the old fences were planned with a view chiefly to incloſe ſoils as ſimilar as poſſible within each diviſion ; beauty or regularity does not, he thinks, ſeem to have attracted much of the proprietor's or farmer's attention ; utility, it would appear, they kept principally in view. Our modern improvers, on the other hand, in too many inſtances at leaſt, ſhew an evident diſpoſition to ſacrifice utility to taſte and regularity in appearance. Hence, it is not uncommon, in a new incloſed pariſh in England, or even in an eſtate in Scotland, where the proprietor has the ſole power of management, to ſee ſeveral different ſorts of ſoils in the ſame incloſure, which, with proper attention, and a little ſacrifice of taſte, might have been included in the adjoining fields with much greater propriety. Thus, in place of forming the fences in ſuch directions as that the greateſt advantage might have been derived, by not only incloſing and ſubdividing the eſtate, but alſo by ſeparating, in every poſſible caſe, ſoils of different and oppoſite qualities, it not unfrequently happens, that the ſands of Norfolk and the clays of Lincolnſhire are, as it were, incloſed within the ſame fence ; than which it is impoſſible to figure any management more improper. If a regular rotation of cropping be adopted on a farm where each incloſure contains a variety of ſoils, it will of courſe be ſuited to that ſort which moſt prevails. When the moſt prevalent ſoil is of a light and ſandy nature, the portions of better ſoil contained in each incloſure muſt be cultivated under a ſyſtem, in regard to cropping, not the beſt calculated to produce the greateſt returns. On the other hand, when the predominant ſoil is deep and fertile, that of a lighter nature muſt be exhauſted, were a mode of cropping purſued calculated only for the ſoil of ſuperior quality. Whereas, had a judicious arrangement been made in regard to the form of the incloſures, the good and bad ſoils might, in many caſes, have been kept ſeparate ; and, as often happens, two rotations of cropping adopted on the ſame farm with equal propriety. Perhaps alſo fences in ſtraight lines, in place of curves, might be diſputed on the ſcore of taſte ; but that is a queſtion foreign to the object of the preſent inveſtigation, which has utility only for its object.

The new incloſures differ as much from the old in regard to ſize as in form. The old incloſures generally contain from three or four to ſix or eight acres ; few of ſuch as can be properly denominated old exceed ten ; while thoſe that have been formed in latter times extend from ten to twenty, ſometimes to forty or fifty. This difference in the ſize of incloſures is greatly, if not entirely, owing to the change of opinion in regard to what was and what now is conſidered by individuals as the proper ſize of farms. In the ſame, or nearly the ſame proportion as farms were enlarged, ſo were the dimenſions of the new incloſures. The more ancient incloſures, ſuch as thoſe in ſeveral parts of Eſſex, Kent, Suffolk, &c. are evidently too ſmall, while thoſe in many other diſtricts are too large. There is a medium in regard to the ſize of incloſures, as well as in other things; and to diſcover and adhere to it, as nearly as circumſtances will allow, is certainly for the intereſt of the proprietors, the tenants, and the public. Where the incloſures do not exceed three or four acres, the quantity of land taken up in erecting the fences is a very heavy *per centage,* viewing the incloſure as a part of the farm, of the eſtate, or of the national territory. A free circulation of air is alſo prevented, eſpecially if there be hedge-row trees, to ſuch a degree, that it may be difficult to ſay whether the crops are more benefited or injured by the fences when ſo cloſely placed. As one of the moſt important advantages that can be derived from incloſing is ſhelter, large incloſures muſt, on the other hand, be equally improper. When a tract of thirty or forty acres is included within one fence, it would be abſurd to ſuppoſe that the fence can afford the ſame ſhelter as if theſe thirty or forty acres had been ſubdivided into three or four fields. When the incloſures are made ſo large, the advantage of fencing, in ſo far as regards ſhelter, muſt be merely a ſecondary object with the perſon who erects the fence.

Having pointed out the loſs and inconvenience ariſing from too ſmall and too large incloſures, it may be neceſſary to ſuggeſt what, upon the whole, ought to be conſidered the beſt ſize. This it is propoſed to do on the authority of Mr. Bakewell, from whom the Britiſh farmer might have learned many uſeful leſſons on ſubjects connected with huſbandry. Beſides what related more eſpecially to the improvement of the different ſpecies of live ſtock, it was the opinion of that expert farmer, that fifty acres of paſture, divided into five incloſures, would go as far in grazing cattle as ſixty acres all in one field. If there was a man in the iſland that exceeded another in knowledge as a breeder and grazier, it was Mr. Bakewell; his opinion, therefore, founded on the experience of many years, may be conſidered as concluſive in regard to the proper ſize of incloſures, in ſo far as the breeder or grazier is concerned; and from what is above ſtated, it appears that from eight to twelve-acre fields are beſt calculated for either of theſe purpoſes. Mr. Marſhall alſo, in corroboration of this, hints in his "Rural Economy of Glouceſterſhire," that the moſt experienced dairy farmers in that diſtrict conſider what he calls a ſuit of paſtures as a more profitable mode of paſturing cows than one large incloſure. As no farm can be kept conſtantly in tillage with advantage, and as the beſt mode of cropping that can be adopted for the generality of ſoils is, in his apprehenſion, that by which nearly the one-half of the farm is in tillage, and the other in paſture, it is neceſſary, in determining the proper ſize of incloſures, to have regard to the two great branches of huſbandry, namely, grain and graſs. In regard to the latter, ſo far as the practice of the two counties moſt remarkable for grazing and dairying can go, the matter ſeems determined; and in reſpect to corn huſbandry, as middle-ſized incloſures enjoy the advantage of ſhelter to a greater degree than thoſe of larger ſize, and a more free circulation of air than thoſe of ſmall dimenſions, there can be no reaſon to heſitate in determining, that the ſize of incloſures beſt ſuited for the breeder, the grazier, and the dairyman's purpoſes, will alſo beſt anſwer thoſe of the cultivator of grain.

Modes of incloſing ſuited to the natural Circumſtances of the Soil, &c.—It is ſtated by Mr. Somerville, in the work already mentioned, that this matter has been in ſome degree diſcuſſed in the preceding article of incloſure. There cannot, however, remain a doubt that the ſucceſs of every attempt that is made in the way of incloſing muſt in a great meaſure depend upon the diſcernment of the perſon who undertakes it. A material conſideration in ſuch caſes is, to determine whether live or dead fences are the moſt eligible or beſt ſuited to the natural circumſtances of the ſoil. The former comprehends every fence made with growing plants; the latter includes not only the different kinds of wall or dike made with dry ſtone, ſtone and lime, ſtone and clay, turf, &c. but alſo the different kinds of dead hedges and palings. Into this eſtimate ought alſo to enter the comparative uſefulneſs and durability of each, together with the firſt coſt. In general, the firſt claſs, namely, live fences, where the plants are properly choſen, and well adapted to the ſoil, are uniform in this reſpect, that, under proper management, their value is yearly increaſing: while that of even the beſt-conſtructed dead fences is annually growing leſs. Where they conſiſt of dead hedges or palings, their decay is certain, and commonly rapid; and even when they are conſtructed with ſtone and lime, which are by far the moſt durable of that claſs; though they make perfect fences at once, and the proprietor or occupier enters into immediate poſſeſſion of every advantage that can ariſe from them, yet from the hour they are built their decay commences, and, after the firſt few years, a regular and progreſſive expence is incurred to keep them in repair in a proper manner.

It is aſſerted, that in all upland ſituations, the firſt claſs of fences will be found the beſt: of that claſs, however, the beech hedge, and hedge with a ſlip of planting, deſerve a preference, as they unite in the higheſt degree the important requiſites of ſhelter, ornament, and incloſure. The beech, under proper management, attains a great ſize even upon the pooreſt ſoils, and ſoon forms a uſeful fence in ſituations where thorns and other kinds of hedge plants would either periſh or remain in a dwarfiſh ſtate; with this additional material advantage, that, by keeping its leaves during the winter, it affords ſhelter to the ſtock and paſture at the moſt inclement ſeaſon, and when it is moſt wanted. The incloſing fences in theſe ſituations ſhould likewiſe be high in order to produce the greateſt effect and utility. But that in low ſituations, where little is to be apprehended from the want of ſhelter, thorn hedges kept low, or any of the different kinds of ſtone walls, will anſwer every purpoſe; and as the ſoil in theſe low ſituations is for the moſt part of very great value, thoſe fences, from the little ſpace they occupy, will be found preferable to every other kind.

Materials for forming the Fences, and the Means of providing them.—In ſpeaking of the nature of the materials for making fences, in the above obſervations upon the modes of incloſing ſuited to the natural circumſtances of the ſoil, it has been pointed out what appeared the beſt, upon the ſuppoſition that the materials could be readily obtained at a reaſonable price. In many ſituations, however, the ſcarcity and apparent want of many of theſe materials form an almoſt inſuperable obſtacle to incloſing upon the plan above hinted at. For inſtance, in the remote parts of the kingdom, where the different kinds of trees and hedge plants are either very ſcarce, or not attainable but at an enormous price, it will often be found neceſſary, in the incloſing of upland diſtricts, to ſurround the fields with ſtone walls in place of hedge, or hedge and ſlip of planting; and in not a few ſituations in the low lands, where ſtone walls would be the moſt eligible fence, from the ſcarcity of that article, hedges, or hedge and ditch, are had recourſe to. Under ſuch circumſtances neceſſity is the law; and the perſon incloſing muſt accommodate his plans to his reſources. It will, however, frequently happen, that the materials wanted will be met with upon the ſpot, not only without expence, but with much advantage to the property; as in caſes where the fields are infeſted with ſtones, their removal will at once facilitate the improvement of the field, and furniſh good materials for incloſing it. But even where the reſources are leſs viſible, and there are no ſtones upon the ſurface, by a careful examination of the ſub-ſtratum plenty may often be met with; or, in defect of theſe, clay for making either bricks or mud-walls may be had merely for the trouble of digging or getting it up.

In forming other kinds of dead fences for incloſing lands, ſuch as palings, hedges, &c. materials for conſtructing them may be procured in almoſt any ſituation, from the thinnings of young plantations, from coppices, and the cutting down of old hedges; even the deficiency of hedge plants and young trees might be, in a great meaſure, if not entirely, got the better of, if every proprietor were to have a ſmall nurſery for raiſing them for his own uſe, and that of his tenants. To the convenience and ſaving of expence with which this practice would be attended, we have to notice an unſpeakable advantage, namely, that ariſing from the uſe of plants propagated in, and inured to, the climate where they are afterwards to grow. It muſt require little knowledge of the ſubject to convince any one, that plants, of whatever kind, reared in the upland and hilly parts of the kingdom, will thrive better than ſuch as have been reared in the warmeſt and moſt ſheltered ſpots. To what, it is aſked, are we to aſcribe the amazing ſize and luxuriant growth of many trees in the iſlands of Scotland, or even in Norway or North America, but to the circumſtance of their having come into exiſtence in the climate and ſituation where they were afterwards deſtined to grow; and by being thus early inured to the climate, became, to all intents and purpoſes, indigenous plants.

It may in addition be remarked, in regard to adapting the plants to the ſoil, that it is not the leaſt important conſideration with perſons incloſing, after having determined whether live or dead fences ſhould be uſed, to make choice of the plants beſt ſuited to the ſoil. In the flat low parts of the country, where the ſoil is loamy or gravelly, and at the ſame time moderately dry, and not greatly expoſed to any prevailing winds, white-thorns will be found both the cheapeſt and the beſt. Hazel, elder, and a multitude of others, might be uſed for that purpoſe in theſe ſituations; but they are liable to objections to which the thorn is not. If in theſe low ſituations it is meant to plant trees along with the fence, either in hedge rows or belts, the dry ſoils ſhould, it is obſerved, be planted with oak, aſh, elm, plane-tree, cheſnut, beech, &c. and the moiſt parts with poplars, and the different kinds of willows; by ſuch means the whole will thrive, and in a ſhort time become valuable to the proprietor. In the upland and hilly parts of the country, unleſs the ſoil is wet indeed, the hedge plants ſhould conſiſt either entirely of beeches, or a mixture of beech and larch; the laſt is known, as has been ſeen above, to anſwer well in theſe expoſed ſituations, and not only endures planting and clipping without injury, but thrives remarkably under theſe operations; where the ſoil, however, is wet or ſpongy, a different deſcription of plants ſhould be uſed; willows of different kinds, poplars, birch, or alder, will then be found the beſt, and ought, in preference to every other, to be made uſe of. By thus adapting the plants to the ſoil and climate, few plans of incloſure will prove abortive in any ſituations ſo far as the fencing it is concerned.

Expence of performing the Work.—It is obvious that this muſt be extremely various according to the nature of the ſituation and other circumſtances; but it will ſeldom be very great where due care is taken in the direction and execution of the buſineſs, and the neceſſary materials are capable of being had near at hand, and in ſufficient abundance.

From the peruſal of the different ſurveys now in poſſeſſion of the Board of Agriculture, it would appear, that, in almoſt every county throughout the kingdom, conſiderable tracts of the ſoil are incloſed; and that many plans of additional incloſures, to a very conſiderable extent, are now in contemplation. The ſurveyors appointed by the Board are unanimous in their approbation of the ſyſtem, which they repreſent as ſo beneficial in its conſequences, that in many caſes the value of the property has been thereby increaſed in a fourfold proportion, and, in ſome well-authenticated inſtances, conſiderably more. The incloſing fences at preſent in uſe are of great variety; and a part of them, particularly ſuch as have been made of late years, executed in a handſome ſubſtantial manner, uniting at once the important points of ſhelter, incloſure, and ornament. The appearance of theſe, owing to the judicious manner in which they are managed, convey to the mind the ſtrongeſt ideas of permanent and valuable improvement. The different kinds of ſtone-walls, by having a broad foundation ſunk deep enough in the earth to place them beyond the reach of froſt, tapering gradually upwards, and ſecured at top with a proper coping, are found to laſt many years, with but very ſlight repairs. The hedges, from the circumſtance of their being planted at a proper ſeaſon, the plants made uſe of adapted to the nature of the ſoil, and afterwards kept in order by regular weeding and trimming, are of immenſe value, and form the moſt beautiful and laſting fences that can be imagined. Many other deſcriptions of fences are equally perfect and valuable; but though theſe circumſtances are mentioned with much ſatisfaction, and muſt give pleaſure to every perſon who feels, or has the ſmalleſt intereſt in the improvement or welfare of his country, it is with pain remarked, that in too many inſtances the ſyſtem of incloſing is extremely defective; and much leſs ſolicitude has been ſhewn to ſecure and unite the whole of the benefit to be derived from it, than the importance of the ſubject deſerves. To confine the ſtock ſeems, in too many inſtances, to have been the ſole object; while the weightier matters of ſhelter, both for the ſtock and paſture, ſeparation of ſoils, ſeparation of ſtock, and many other points of equal importance, have been entirely overlooked. In too many inſtances, no attention has been paid to the natural circumſtances of the ſoil intended to be incloſed. High inacceſſible walls, belts or ſlips of planting, and hedge rows of trees, being very often met with in the loweſt and warmeſt ſituations, where little or no ſhelter is neceſſary; while in the hills and uplands, and along the ſea-coaſt, where ſhelter is indiſpenſable, both for the ſtock and paſture, and where its advantages are incalculable, the fence very often conſiſts of a naked ſtone wall, which, though it may, and indeed does anſwer the purpoſe of confining the ſtock, poſſeſſes no other advantage; and many tracts of immenſe extent, the value of which might be improved in a tenfold proportion by hedges and belts of planting, exhibit a naked bleak appearance, and continue expoſed to every blaſt. The loſs and diſadvantage attending this injudicious mode of incloſing are ſtrikingly obvious. In the low warm parts of the country, where the land is of immenſe value, much of it is occupied by fences which the nature of the ſituation does not require, while in the more elevated and expoſed parts, where ſhelter is the *ſine qua non* of improvement, and where the land occupied by the fence is, comparatively ſpeaking, of ſmall value, the fence, in place of affording the neceſſary ſhelter both to the ſtock and paſture, is barely adequate to the purpoſe of incloſing the field. Under ſuch circumſtances, the paſture will for the moſt part be ſcanty; and neither a breeding nor a feeding ſtock will make half the progreſs upon it that they uſually do in caſes where they enjoy the benefit of complete ſhelter. A defect equally injurious to the proprietor or occupier, and highly inimical to permanent improvement, ſeems alſo to prevail in the choice of the materials of which incloſures are generally made. In every inſtance where circumſtances will admit of it, preſent uſe ought, if poſſible, to be united with durability in the formation of every fence; an attention to this is, however, too often totally wanting, both with proprietors and farmers. Provided the preſent purpoſe is anſwered, future conſequences are diſregarded; and neither a knowledge of the periſhable nature of the materials made uſe of, which daily experience preſents to their view, nor the frequent and heavy expences to which they are put for repairs, have been ſufficient to make them alter their ſyſtem. Amongſt theſe periſhable fences are to be ranked the different kinds of earthen and mud walls, of turf, of turf and ſtone, together with the whole of the wooden fences, comprehending the different kinds of paling, dead hedges, &c. It is added, alſo, that the ancient cuſtom of incloſing fields with high earthen banks or mounds, ſometimes with and ſometimes without a paling on the top, which prevailed formerly in many parts of England, and which is now purſued in the north of Scotland, though it did very well as a rude eſſay in the way of improvement, when other modes of incloſing were either unknown or imperfectly underſtood, and might for a time anſwer the purpoſe, either of confining the grazing ſtock while the field was in paſture, or protecting the corn crops when it was under tillage, is perhaps the worſt and moſt periſhable of all incloſing fences. After being reared with much labour, and committing a theft upon the adjoining ſurface, which is pared off to a conſiderable diſtance on each ſide, it remains but a very few months, or even weeks, in a perfect ſtate; indeed, from the moment it is made it begins to decay: and the operation of the weather upon it, for a few years, renders it uſeleſs as a fence. Accordingly in many parts of the iſland the remnants of ſuch fences are met with, which, though they were originally of conſiderable height, and to appearance ſtrong and formidable, are now ſo compleatly beat down and levelled by the action of the weather, as to render it in ſome caſes a matter of difficulty for the curious to trace their foundations, or the direction in which they formerly ran. The caſe is the ſame with walls formed entirely of turf, or a mixture of turf and ſtone. Theſe, though made at conſiderable expence, and, as has been already noticed, by robbing the neighbouring ſurface, are equally periſhable as the ſimple earthen mound. Upon whole farms, and even eſtates, that were formerly incloſed with turf, or ſtone and turf walls, nothing now remains but their veſtiges, which, while they exhibit a ſtriking proof of their periſhable nature, afford at the ſame time a ſalutary leſſon to proprietors and others, to beware of ſuch temporary expedients; as, however cheap ſuch fences may be in the firſt inſtance, in their beſt ſtate they are but imperfect, and in the end are the worſt and moſt expenſive of any. An equal defect, it is aſſerted, prevails in many inſtances where the incloſing fence is entirely of ſtone. When the walls, in place of having a good foundation ſufficiently removed beyond the reach of froſt, broad at bottom, tapering gradually upwards, and finiſhed at top with a ſubſtantial coping of flag-ſtones and lime or turf, ſo formed as to prevent the decay of the building, are in many inſtances built upon the plain ſurface, with ſcarce any taper towards the top, and without any coping at all, except perhaps a ſlight one of turf, which ſoon moulders away, and, if the wall is built with lime or clay, permits the moiſture to ſoak down and deſtroy it. The ſame improvidence and want of judgment diſcovers itſelf in carrying theſe walls through every kind of ſoil, wet as well as dry. In the formation of extenſive incloſures, it very often happens that a part of the line in which the incloſing fence is to run is wet and ſpouty; in place of paying attention to that circumſtance, diſcontinuing the wall where the dry land terminates, and either attempting to lay the ſpouty parts dry by draining, or plant a hedge of willows, poplars, or other plants adapted to wet ſoils upon the ſurface, the wall is too frequently continued through the whole. The conſequence (as may very naturally be expected) is, that the wall, for want of a ſolid dry foundation, ſoon tumbles down, or is continually needing repairs. Along with this inattention to the ſhape of walls, conſiderable loſs ariſes from building them with round, or what are termed land-ſtones. Theſe, from their ſhape, are incapable of preſenting a ſufficient extent of ſurface to each other to bind them, or give ſtability to the building, by which means it ſeldom laſts long, though clay, or even lime is made uſe of. The practice of mixing clay is particularly inexpedient, as in general the firſt winter's froſt, or a long continued ſeries of wet weather, ſaturates the clay ſo completely, that the wall ſwells, burſts, and is thrown down. And the practice of incloſing with the different kinds of dead hedges and palings is productive of equal loſs both to individuals and the community. Were theſe fences made to anſwer only a temporary purpoſe, ſuch as protecting a young hedge, &c. &c. the loſs would not be great, as their original value is ſmall, and, long before they were totally decayed, the hedges they were meant to protect would be ſo far advanced, as to make good fences without their aſſiſtance. From the peruſal of the different reports, however, it appears that in many of the Engliſh counties they are reſorted to in caſes where permanent plans of incloſing are intended, and are the only fence made uſe of. The ſurveyors who have noticed the practice are unanimous in their diſapprobation of it, and repreſent the fences as periſhable, and in the higheſt degree expenſive. In ſeveral whole diſtricts, dead hedges of different kinds form the only fence, and occaſion an annual expence upon the property ſo incloſed, amounting from a fifth to a tenth part of the rent. Nearly an equal loſs and expence is incurred in incloſing with paling; and what adds to the regret that ariſes from the obſervation of this ruinous practice is, the ſoil and climate in moſt caſes where it prevails are well calculated for the growth of live fences. It is evident that what is ſaid above will be conſidered by the public at large as a reproach, and will be felt as ſuch by thoſe concerned. We admit that the feelings of individuals ought, in every inſtance where it is compatible with the public welfare, be reſpected; but where either their opinions or practices are hurtful to the country, or hoſtile to its improvement, they are juſtly reprehenſible. Forbearance in ſuch caſes is vice; and though expoſing their faults may, in ſome inſtances, cover them with ſhame, yet the taſk is neceſſary; and by fixing the attention of the public upon the ſubject, has very often the effect of preventing the moſt ſerious abuſes and bringing about valuable improvements.

Where wet ditches conſtitute the fence, either in their ſimple ſtate, or as making a component part of another fence, ſuch as ditch and hedge, &c. due attention has in very few inſtances been paid to ſecure every advantage that might be derived from their uſe. Proceeding without judgment, the ditches in many counties are made equally deep and wide upon wet and dry lands, from an erroneous opinion, that the drainage of the field, and the future proſperity of the hedge, require a ditch of certain dimenſions. In place of laying off the field in ſuch a ſtyle as to make the ditches ſubſervient to the purpoſes of drainage as well as incloſure, they are frequently dug at random, of an uncommon depth and width, with a high bank or mound of earth on the ſide next the field, ſo ſtrong and thick that no water can find its way through it. In that way the ditch, in place of acting as an open drain for carrying off the water from the adjacent fields, acts as a kind of barrier to prevent it from getting away; while, from the want of a proper level and outlet, when once filled it becomes a kind of reſervoir; and by continuing filled with water three parts of the year, chills the roots of the incloſing hedge plants ſo much, that they either periſh entirely, or remain ſmall, ſtinted, and diſeaſed. In this place it may be neceſſary to obſerve, that the uſe of ditches as open drains has in many inſtances been completely miſunderſtood. In moſt of the old incloſures they were thought valuable only in proportion to the quantity of water they were capable of containing, without conſidering whether they were ſo ſituated as to convey that water to a proper outlet. In the Reports of the counties of Ayr and Stirling, theſe deep and wide ditches are deſcribed, and their defects noticed: in the former county they are from ſix to eight feet wide, and of a proportionable depth; and in the latter, they are in many caſes upwards of twelve feet wide. The quantity of valuable ground occupied in that way, over ſuch extenſive diſtricts, muſt be immenſe; and when to this is added the injury done to the hedges from their roots being chilled, and the inconvenience ariſing from having a tract of country ſo much cut and interſected by theſe canals during winter, which prevents all paſſage through them, and the danger of weak horſes or cattle, or even unfortunate travellers, who miſtake their road in the dark, falling into them (circumſtances which unfortunately too often occur), together with the expence of making ſuch deep excavations, it will readily appear that the practice is bad, and that every purpoſe both of drainage and incloſure might be anſwered, at perhaps a fourth part of the expence, and without any of the riſks or inconveniences we have mentioned. See Fence and Hedge.

It is further remarked, that in many parts the defective method of rearing and managing the hedges is no leſs ſtriking. In place of making the whole hedge of one kind of plants ſuited to the nature of the ſoil, and ſuch as, when arrived at a certain age, are capable of making a good fence, the incloſure is frequently ſurrounded with a motley mixture of ſhrubs, many of which, even in their moſt perfect ſtate, are unfit for making a fence; while others, though they might have anſwered that purpoſe pretty well if the whole fence had been made with them, yet, from the circumſtance of their being mixed with others, which not only come into leaf, but alſo ſhake their leaves at a different ſeaſon, both hurt each other's growth, are offenſive to the eye, and take from the general appearance of the country. Such, however, are the fences in ſome parts of the fineſt counties in England, where, upon the top of a high bank that has been raiſed by robbing the adjoining ground of its ſoil, a motley hedge, conſiſting of various plants, is met with, full of gaps filled up with ſtones or dead wood, forming a very inſufficient fence, either for the purpoſe of confining the ſtock while the field is in paſture, or of protecting the crops while it is under tillage. In other caſes, when the plants of which the hedge conſiſts are of one kind, it too often happens, that they are by no means ſuited to the nature of the ſoil. For example, in incloſing a large field where a part of the line of fence is perfectly dry, and a part of it wet and ſwampy, in place of planting quicks or white-thorns upon the dry ſpaces, and willows, poplars, birches, or ſuch plants as thrive in damp ſituations upon the wet parts, the whole field is often ſurrounded with thorns, greatly to the hurt of the proprietor and occupier; as upon the dry land the thorns thrive, and in a few years make a good fence, while upon the wet parts they either fail entirely or are good for nothing; whereas, with a little judgment in accommodating the plants to the ſoil, planting quicks upon the dry land, and willows, poplars, &c. upon the ſpouty and ſwampy parts, the whole would thrive, and there would be no defect in the line of incloſure. To this miſtake (a want of judgment in accommodating the plants to the ſoil) are to be added the defects which commonly take place in the after-management and training of hedges. It is now well known, that the whole, or the greateſt part of the plants of which hedges are made, if left to themſelves without pruning or weeding, run up to a conſiderable height, grow broad and buſhy at top, and become open and naked at bottom. To prevent this there is no remedy known, but that of cutting over the main ſtems of the plants of which the hedge conſiſts, after they have attained a certain height, and pruning or trimming the lateral branches in ſuch a way as to preſerve the hedge thick and broad at the bottom, and give it a gradual taper towards the top. But in place of this management, the hedge, in moſt inſtances, after being planted, is abandoned to its fate, and neither weeding, pruning, nor indeed any other attention beſtowed upon it: in that way a number of the plants are either choked by weeds, or remain in a dwarf ſtunted ſtate; and ſuch as ſurvive this uſage are allowed to ſhoot up at random, and ſoon attain a great height without being uſeful as a fence, and by the ſpreading of their branches at top, not only become naked and open below, but cover three times the ſpace of ground that hedges differently kept uſually do.

It may be obſerved, in general, in regard to the directions of the incloſing fences, that they ſhould run up the ſides, and immediately acroſs the tops of the elevations, by which their heights are in appearance conſiderably increaſed. But in ſome caſes it may be better to carry them in an oblique manner acroſs, as affording greater advantage in the direction of the ridges and in producing ſhelter and ſhade. They have in common the moſt beneficial effects in the level and valley lands, when they are placed in a parallel direction to the riſing grounds, and when they interſect one another at right angles, and where the incloſures approach nearly to perfect ſquares. See Fence and Hedge.

In addition to the various advantages that have been already mentioned, the incloſing of land enables the farmer to act as is the moſt ſuitable and convenient in reſpect to the cultivation of his different crops, as well as to purſue various other plans of good huſbandry that could not otherwiſe be attempted.

In caſes where farms are to be incloſed, it will be advantageous to begin with having a ſurvey and plan made, that they may thereby be divided and proportioned out with greater propriety and preciſion, ſo as to render them pleaſing to the eye and convenient to the farmer; and if there be places of reſidence upon them, the whole of each may be made to become ornamental to the reſidences, by a judicious diſpoſition of the hedges and plantations. And when there are different farms, they ſhould be ſo divided, that the dwelling of each tenant may be as contiguous to his land as conveniency will admit of, in order to prevent length of carriage, and to facilitate attendance, labour, &c. See *Waſte* LAND.

INCOGNITA, in *Natural Hiſtory*, is a term which has frequently been applied to the animal and vegetable remains found imbedded in the ſtrata of the earth, from the circumſtance of their not agreeing, when examined with ſufficient care to minutely diſcriminate, with the known exiſting ſpecies to which they bear a reſemblance in many inſtances: it has been thought by many late naturaliſts, that all the reliquia of the ſtrata are incognita, or belong to extinct and unknown races of organic beings, ſometimes called the primitive creation, and the antediluvians; but not with propriety, becauſe the animals and plants that exiſted before Noah's flood were of the very ſame kind as we now have.

INCOGNITO, a term borrowed from the Italians, uſed when a perſon is in any place where he would not be known; but it is more particularly applied to princes, or great men, who enter towns, or walk the ſtreets, without their ordinary train, or the uſual marks of their diſtinction and quality; or when they travel without their proper titles.

The grandees in Italy make a common cuſtom of walking the ſtreets incognito; and always take it amiſs, on ſuch occaſion, when people pay their compliments to them. It is not barely to prevent their being known that they take theſe meaſures, but becauſe they would not be treated with ceremony, nor receive the honours due to their rank.

When the horſes in princes, cardinals, and ambaſſadors coaches have no taſſels, which they call *fiocchi*, and the curtains, which they call *bandinelle*, are drawn, they are reputed to be incognito; and nobody that meets them is obliged to ſtop, or make his honours to them.

The cardinals alſo, when they would be incognito, leave off the red hat.

INCOMBUSTIBLE, that which cannot be burnt or conſumed.

Metals melt, ſtones calcine, and are yet incombuſtible. Cloth made of lapis amianthus (ſee AMIANTHUS) has been deemed incombuſtible: it is cleaned by fire, but not burnt. See ASBESTOS, and LINUM *Incombuſtibile*.

INCOMBUSTIBLE *Lint*, a name given by authors to a peculiar kind of aſbeſtos, or earth flax, which never is formed into compact maſſes as the other ſpecies are, but is always found in looſe filaments, and thoſe of a very flexible nature, and extremely fit to work.

This is a kind of aſbeſtos, wholly different from the ſpecies known to the ancients, and is found, ſo far as is yet known, only in the county of Aberdeen in Scotland, in the neighbourhood of Achintore, near the Highlands. See ASBESTOS, and LINUM *Incombuſtibile*.

The fabricating a cloth of this ſubſtance has not yet been attempted; but Mr. Willſon, who firſt diſcovered it, had ſome of it ſpun into yarn, which gives proof that the other is practicable. Phil. Tranſ. N° 276 p. 1005.

INCOMBUSTIBLES, *Simple*, in *Chemiſtry*, are thoſe whoſe characteriſtic property is a ſtrong tendency to unite to oxygen: the combination is not accompanied by the emiſſion of heat and light, and the compounds formed are capable of ſupporting combuſtion. (See SUPPORTERS.) Only two ſubſtances poſſeſs this character, namely, AZOT and MURIATIC *Acid*, which ſee.

INCOMBUSTIBLE *Wood*, in *Natural Hiſtory*. Dr. Grew, in his Catalogue of the Rarities in Greſham College, p. 269, mentions pieces of wood half petrified, which held in the fire become red like a coal, but do not flame or ſmoak.

INCOMMENSURABLE, a term in *Geometry*, uſed where two lines, when compared to each other, have no common meaſure, how ſmall ſoever, that will exactly meaſure them both.

In the general, two quantities are ſaid to be incommenſurable, when no third quantity can be found that is an aliquot part of both; or, when thoſe quantities are not to one another as unity to a rational number; or as one rational number to another. See COMMENSURABLE.

The ſide of a ſquare is incommenſurable to the diagonal, as is demonſtrated by Euclid; but it is commenſurable in power, the ſquare of the diagonal being equal to twice the ſquare of the ſide.

Pappus, lib. iv. prob. 17, ſpeaks alſo of incommenſurable angles. Surfaces which cannot be meaſured by a common ſurface, are alſo ſaid to be incommenſurable in power. See DIOPHANTINE *Problems*.

INCOMPATIBLE, that which cannot ſubſiſt with another without deſtroying it.

Thus, cold and heat are incompatible in the ſame ſubject; the ſtrongeſt overcoming and expelling the weakeſt.

INCOMPATIBLE *Benefices*, in *Law*, are thoſe which cannot be retained together, if they be with cure, and of a particular value in the king's books. See CHAPLAIN.

INCOMPLEX OPPOSITION. See OPPOSITION.

INCOMPOSIT, in *Muſic*, is a term uſed by Euclid to expreſs ſuch intervals in certain Greek ſcales of muſic, as reſulted or were required to make up the whole diateſſaron or minor fourth. In the chromatic molle, the incompoſit interval, which, with two TRIENTAL *Dieſis* (ſee that article), is required to complete the tetrachord, being the difference between a fourth and two-thirds of a major tone, is $184\frac{2}{3}\Sigma + 3\frac{2}{3}f + 16m$, or $184.61678\,\Sigma + 4f + 16m$, its common logarithm is .9091629.4502, and in thoſe of Euler or decimals of the octave .301755, and it contains 16.83717 major commas. According to Holder's treatiſe, 1ſt edit. p. 101, this incompoſit interval was rated by Euclid to contain "a tone and half and a third part of a tone," which is $1\frac{5}{6}$ T, but this is $190.62071\,\Sigma + 4f + 16m$, and differs more than half a comma from the above, and is one among the many inſtances in which it will appear, that even this prince of mathematicians had but imperfect ideas of the comparative values of ſurd or fractional muſical intervals, to which the modern invention of logarithms has opened ſo eaſy a road. See INTERVAL.

INCOMPOSIT *of the Chromatic Seſcuplum*, in the *Greek Muſic*, is the exceſs of the fourth above one-ſixth part of a major tone, which in Mr. Farey's notation is $219\frac{1}{3}\Sigma + 4\frac{1}{3}f + 19m$, or $219.38322\,\Sigma + 4f + 19m$, its common logarithm is .8921121.0420, its Euler's log. = .358397, and it contains 19.99746 major commas. Euclid is ſaid to have repreſented this incompoſit interval as being ſeven of his dieſis quadrantalis, or $1\frac{3}{4}$ T, which, however, is $182.072864\,\Sigma + 3f + 16m$, and conſequently differs more than three commas from it: another inſtance of what has been obſerved above. See INTERVAL.

INCOMPOSIT *of the Diatonic Molle*, is the exceſs of the fourth above $1\frac{3}{4}$ major tone, which is $72\Sigma + 1\frac{1}{2}f + 6\frac{1}{4}m$, or $71.927136\,\Sigma + 2f + 6m$: its common logarithm is .9645781.7767, and its Euler's or binary log. = .117671, and it contains 6.56564 major commas. Euclid ſtates this to be equal to three quadrantal dieſes, but which is $\frac{3}{4}$ T, or

78.072865 $\Sigma + f + 7\,m$, and differs more than half a comma from the above.

Incomposit *Ditone of the Enharmonic Genus,* is the exceſs of a fourth above half a tone major, or $3^2 \div 8\sqrt{2}$, which is $202\,\Sigma + 4f + 17\tfrac{1}{2}\,m$, or $202.00393\,\Sigma + 4f + 17\,m$, whoſe common logarithm is .9006375.2462, and its Euler's log. = .330076, and it contains 18.41741 major commas.

INCOMPOSITE Numbers are the ſame with what Euclid calls *prime numbers*. See Prime and Number.

INCOMPOSTO, *Ital. uncompounded,* which ſee.

INCONCINNOUS, in *Muſic*. Diſcords are diſtinguiſhed into concinnous and inconcinnous intervals; the concinnous are ſuch as are practicable and fit for muſic, having a good effect when combined with concords according to the rules of harmony. The other diſcords that can have no admiſſion in muſic are called inconcinnous, as being out of proportion, and making no part of the ſcale. (See Discord and Proportion.) Syſtems, in ancient muſic, are alſo divided into concinnous and inconcinnous; a ſyſtem is ſaid to be concinnous, or regularly divided, when the parts conſidered as ſimple intervals are concinnous, that is, when ſingly uſed in melody, or combined in harmony.

Inconcinnous *Intervals,* according to M. Henfling, are ſuch as are a comma flatter or ſharper than perfect; ſuch are alſo called deficient or redundant, or comma-deficient and comma-redundant intervals, and are marked with a grave or an acute accent, as 3ˋ or 4'. Dr. Callcott obſerves, in the Overend MS. vol. vi. p. 92. in the library of the Royal Inſtitution, that of the ſix inconcinnous intervals 3', 6', 4' and 3ˋ, 6ˋ, and 5ˋ, the 3ˋ, 5ˋ and 6', 4' are uſed in harmony, but the 3' and 6ˋ only in the melody of modern muſic. Of the inconcinnous ſcale of Ariſtides, an account is given in vol. i. p. 201 of the manuſcripts above quoted.

Inconcinnous *Syſtem*. See System.

INCONSONANCE, in *Muſic*, is of the ſame import nearly with diſſonance, or a jarring and unpleaſant ſound.

INCONTINENCE *of* Urine implies, in *Surgery*, an inability of retaining this fluid in the bladder, ſo that in ſome inſtances the patient's water dribbles away inceſſantly; in others only a frequent diſcharge of it is made; but in all caſes, the evacuation is quite involuntary, and not under the controul of the will.

Sometimes the urine dribbles away continually, while the patient not only has no inclination to void it, but even no ſenſation of its being voided. In other examples, the patient can hold his water in a certain degree; but the propenſity to evacuate it comes on ſo frequently, ſuddenly, and irreſiſtibly, that the bladder immediately empties itſelf, notwithſtanding the dictates of the will, and every effort on the part of the patient to the contrary. Another kind of incontinence of urine only happens in the night-time, when the patient is aſleep.

Women are more ſubject than men to an incontinence of urine; but, on the other hand, they are leſs frequently troubled with retentions. The reaſon of this circumſtance admits of ſatisfactory explanation, by adverting to the large ſize and ſhortneſs of the female urethra, and to the general cauſes depriving patients of the power of containing their urine.

1. We ſhall firſt ſpeak of the incontinence of urine attended with a weakneſs or paralytic affection of the ſphincter veſicæ muſcle. As, in this caſe, the neck of the bladder is, as it were, conſtantly open, the urine eſcapes through the urethra immediately after it has deſcended from the ureters. Sometimes the weakneſs, or paralyſis of the ſphincter is entirely a local defect; on other occaſions, it is merely a ſymptom of another general diſorder. In the firſt of theſe examples, the affection of the ſphincter is frequently the conſequence of a difficult labour, in which the neck of the bladder has ſuſtained injury from the long and great preſſure made upon it. A paralyſis of the ſphincter may alſo be an effect of the laceration and violent diſtention of the neck of the bladder, in extracting a ſtone from this organ in the operation of lithotomy. Here it is proper to remark, that the evil may generally be imputed to the miſconduct of the ſurgeon, who, after neglecting to make a ſufficient diviſion of the parts with his cutting inſtruments, drags out the ſtone through the inadequate opening *totis viribus*. Indeed, we have ſeen ſome old greyheaded operators whoſe fair exertion of ſtrength has been unequal to draw out the ſtone, and who have only ſucceeded by dint of their weight, in other words, by leaning backwards and hanging on the forceps. Every deliberate ſurgeon who knows how often lithotomy proves fatal from manual roughneſs and violence, muſt acknowledge that ſuch operators almoſt deſerve another kind of hanging, and that the tumble backwards to which they are commonly expoſed, would hardly be a ſufficient puniſhment for their awkwardneſs and ignorant barbarity. It is not only the duty of the ſurgeon to make an ample and direct opening into the bladder, he ought to draw out the ſtone in a ſlow and gentle manner, ſo as to afford an opportunity for the parts to yield as much as poſſible.

Much danger, and ſerious injury of the neck of the bladder, are likewiſe frequently aſcribable to the ſtone being forcibly extracted with its long axis acroſs the wound. So zealous and eager are many operators, that when once they get hold of the calculus, they never let it go again, whatever may be the poſition in which it is graſped. Fearful of loſing time, or perhaps of never being able to ſeize the foreign body again, they keep faſt hold, and are only able to effect the extraction by the moſt awkward and unwarrantable violence. (See Lithotomy.) The preſent kind of incontinence of urine is often a conſequence of the debility incident to old age. Sometimes the diſorder proceeds from the deſtruction of the ſphincter muſcle by ulceration. Inſtances occaſionally preſent themſelves where an analogous incontinence of urine happens from congenital malformation, the fluid eſcaping through a preternatural opening, which is unprovided with any ſphincter. The complaint may be attendant as a ſymptom upon all other diſeaſes, which are accompanied by loſs of ſenſation, lethargic complaints, delirium, or extreme debility; it is frequently induced by apoplexy, and injuries and diſeaſes of the vertebræ and ſacrum.

Although the infirmity is not in itſelf attended with danger, it occaſions conſiderable inconvenience. The conſtant dribbling of the urine keeps the patient's clothes continually wet, produces a very unpleaſant ſmell, and gives riſe to inflammation, excoriation, and ulceration of the adjacent parts.

It deſerves remembrance, that in women, and perſons of advanced age, a miſtake may eaſily be made concerning the real nature of the caſe. What is frequently ſuppoſed to be in elderly people an incontinence of urine, is, in fact, often quite the contrary, namely, a retention of urine, accompanied by a paralyſis of the bladder. When this receptacle is full, ſome urine always makes its eſcape againſt the will of the patient, and at length ſuch involuntary diſcharge becomes inceſſant, in conſequence of the bladder remaining continually full. With regard to females, who, after difficult labours, are afflicted with an inability of retaining their water, practitioners generally conclude without heſitation, that the infirmity is dependant upon a paralyſis of the ſphincter muſcle, while it not unfrequently proceeds from a fiſtulous opening, formed between the bladder and vagina, in conſequence of a ſlough, or ulceration.

In caſes where the weakneſs or paralyſis of the ſphincter veſicæ is altogether a local affection, the internal and external employment of tonics and ſtimulants is indicated. The following plans and remedies are ſaid to have been uſed with ſucceſs:—bathing the feet and parts about the pubes with cold water; introducing cold injections into the bladder; laying in the vagina a ſponge, which has been filled with cold water; pumping cold ſpring water upon the pubes and perineum; giving, every four hours, half a drachm of alum with ten grains of gum arabic; uſing as a lotion, which is to be applied externally, or within the vagina by means of a ſponge, a liquor compoſed of wine, brandy, and a decoction of aſtringent herbs; exhibiting bark internally; applying a bliſter upon the ſacrum, or perineum, repeatedly; giving from fifteen to thirty drops of the tincture of cantharides with ſome lac amygdalæ; placing the parts about the pubes in a ſhower-bath; electricity; frequently rubbing the ſpine and ſacrum with a ſtimulating liniment, compoſed of cocoa, butter, and the oils of lavender and nutmegs, or elſe of hartſhorn and ſpiritus ſerpilli; adminiſtering chalybeates, &c.

Whenever the weakneſs or paralyſis of the ſphincter veſicæ occurs, merely as a ſymptom of another diſeaſe, the firſt indication is to endeavour to remove this laſt affection; and then if the paralyſis of the ſphincter ſhould continue, the ſurgeon is to try ſome of the preceding tonic and ſtimulating remedies.

The long enumeration which we have given of methods which have been practiſed with ſucceſs, may be likely to create indeciſion, with reſpect to ſuch plans as claim the preference. We have no heſitation, then, in declaring our belief, that the records of ſurgery, and the leſſons of daily experience, are moſt ſtrongly in favour of applying bliſters to the ſacrum, and bathing the region of the pubes, and the perineum with cold ſpring water. The efficacy of bliſters, in this ſpecies of the diſorder, is ſurpriſingly diſplayed in a ſeries of ſucceſsful caſes, related in the Medical Obſervations and Inquiries. We have alſo a high opinion of the internal employment of the tincture of cantharides, with bark and ſteel medicines, eſpecially when aided by electricity, or frictions of the ſpine and ſacrum with a ſtimulating liniment.

When the diſorder proves incurable, the ſurgeon always has it in his power to recommend ſome apparatus for leſſening the inconveniences with which the patient is annoyed. A thing which anſwers the purpoſe in male ſubjects, is a ſort of flaſk or bottle, which is to be placed in ſuch a manner that the urine may run into it, by which means all bad ſmell, uncleanlineſs, and wetneſs will be avoided. The flaſk muſt alſo be ſo put on as not to be irkſome to the patient when he moves about. That which is deſcribed in Juville's Traité des Bandages, conſiſts of three pieces; namely, an ivory mouth, an elaſtic gum-neck, and a ſilver body. The veſſel is faſtened by means of tape to a leathern girt, which goes round the waiſt. The ivory mouth is round, and about eighteen lines in diameter. Its external margin is furniſhed with ſeveral ſmall apertures, through which the tapes are intended to paſs. Its inner ſurface is ſlightly excavated, ſo that it fits more exactly on the parts about the pubes. Its external ſurface is a little convex, and provided with a projecting arm, which is here and there perforated, and is deſigned for having the claſtic gum-neck attached to it.

The neck of the apparatus muſt be made of a ſingle piece of elaſtic gum, without any ſeam, about four or five inches long, and of ſufficient breadth to contain the penis. The lower end of this tube is ſcrewed to the ſilver body of the inſtrument. At the top of the ſcrew part of the body are three pins, which internally croſs each other, in the form of a ſtar, and are intended to ſupport a bit of ſponge that is put within the neck. In the ſilver receptacle is a funnel, the lower end of which is furniſhed with a valve. The ſilver part of the inſtrument is flat, four inches broad, and when the apparatus is put on, always lies at the inſide of the thigh, in a ſmall pocket made in the patient's breeches for its reception. The ſponge, in the elaſtic tube, and the valvular funnel, in the ſilver receptacle, effectually prevent any return and eſcape of the urine, which would otherwiſe happen when the patient raiſes his thigh, or ſits down. When the body of the inſtrument is full, it is to be ſcrewed off, and emptied; nor is there the leaſt occaſion to take off the whole of the apparatus. On certain occaſions the patient, if he chooſes, can ſcrew on a receptacle of larger ſize.

It has been objected to inſtruments of the preceding deſcription, that they cannot be conſtantly retained upon the part, taken off and on, and carried about by the patient, without great trouble and inconvenience. Hence ſome ſurgeons have given the preference to an inſtrument, whereby the penis and urethra may be gently compreſſed, ſo as to retain the urine in the bladder, and diſcharge it, by day or night, at pleaſure, (as is aſſerted,) with little more trouble than in the ordinary way, by opening and ſhutting the little, light, and eaſy inſtrument called a yoke. Nuck was the inventor of a famous contrivance of this kind, which is repreſented in the plates of Heiſter's ſyſtem of ſurgery, together with another yoke, deviſed by the latter practitioner himſelf. See *Tab.* 26. *figs.* 8, and 9.

It is juſtly remarked by modern writers, that the jugum penis hardly admits of being worn when there is a tendency to erections; and, in other caſes, the machine is always apt either to make too little preſſure, ſo as not to reſtrain the urine, or elſe too much, ſo as to produce pain.

To female patients, the foregoing contrivances are, of courſe, totally unadapted, and, in this ſex, it is ſomewhat difficult to obviate and diminiſh the inconveniences ariſing from an incontinence of urine. Sponge, which has commonly been introduced within the vulva, is of little uſe; for it muſt be taken out, and replaced again, exceedingly often, or elſe, in conſequence of its becoming quickly full of urine, this fluid runs down as faſt as if no means at all were taken to hinder ſuch annoyance. Beſides, when the patient ſits down, the urine is partly preſſed out of the ſponge, and, making its eſcape, wets the clothes, and cauſes much uncleanlineſs. This circumſtance led to the idea of compreſſing the female urethra againſt the os pubis, ſo as to cloſe the paſſage, and ſeveral inſtruments for this purpoſe have been invented and recommended. One of the ſimpleſt inſtruments of this ſort is a peſſary, which is made very convex on the ſide towards the os pubis, ſo as to compreſs the meatus urinarius againſt this bone; and, in order that the preſſure may neither be too powerful nor too feeble, we are particularly adviſed to employ peſſaries made of elaſtic gum.

Default aſſures us, that the objects in view are beſt fulfilled by an inſtrument, which has a ſteel ſpring, reſembling that of a common truſs, and extending round the pelvis. In the middle of the ſpring, preciſely over the ſymphyſis pubis, is a metallic plate, from which proceeds downwards a long, narrow, ſomewhat curved piece of ſteel, on the lower end of which is fixed a pad, deſigned for preſſing the meatus urinarius againſt the os pubis. In order that the degree of preſſure may be more nicely regulated, the long ſteel branch may be conſtructed with a hinge, or joint, at its middle. The upper part of this piece of ſteel ought to project a little beyond the lower portion, ſo as to allow a ſcrew to be placed in it, whereby the lower bit of ſteel, and the pad belonging to it, may be preſſed, in the requiſite manner, towards the os pubis. (See Journal de Médécine, tom. iii.) A ſimilar, but apparently a ſtill more commodious inſtrument of this kind, is deſcribed by Le Rouge in the Journal de Médécine, Chirurgie, et Pharmacie, tom. lxxvii. p. 459.

Experience alone can determine whether ſuch inventions will anſwer the intended purpoſe. Richter apprehends, that the conſtant preſſure muſt, at length, prove painful, and that, if it were not ſtrong, it could not hinder the urine from eſcaping. Reaſons of this ſort have induced ſome writers to recommend the employment of a flaſk, or receptacle for the urine, as well for female as male patients. An apparatus has been invented, conſiſting of a bandage, that paſſes round the body, and is provided with an elaſtic piece of ſteel which deſcends over the mons veneris, and preſſes an oblong tin funnel againſt the orifice of the meatus urinarius. A bit of ſponge is placed within the funnel, and projects a little over its edge, being calculated to lie upon the opening of the urethra, imbibe the urine, and conduct it into the funnel, from which it drops into a bladder, or ſkin pouch, purpoſely placed for its reception. (Botticher, vom Chirurgiſchen Verbande.) As the preceding apparatus muſt, in all probability, put the patient to inconvenience when ſhe ſits down, Richter ſuſpects, that it might be beſt to introduce into the urethra a flexible catheter, the lower end of which is to be faſtened to Juville's flaſk, after being properly fixed in the manner deſcribed in ſpeaking of the latter apparatus. The receptacle can eaſily be retained on the inſide of the thigh.

Having treated of the incontinence of urine, attended with a paralyſis of the ſphincter veſicæ, we ſhall next ſpeak of that ſpecies of the diſorder which has been called *ſpaſmodic*, and uſually ariſes from the operation of ſome irritation or another upon the bladder. In a caſe of this nature, it is always a chief indication to diſcover and remove, if poſſible, the active irritation, which, according to ſurgical authors, may be of ſeveral kinds: worms, hemorrhoids, cold, ſuppreſſion of the menſes, a calculus in the bladder, an abſceſs near the anus, &c. The treatment muſt, of courſe, be ſubject to conſiderable variety. When the particular nature of the irritation cannot be detected, the practitioner muſt employ general anodyne and antiſpaſmodic remedies, opium, the warm bath, &c. In theſe caſes, the uva urſi has been preſcribed with infinite advantage. The preſent ſort of incontinence of urine occaſionally occurs merely as a ſymptom of epilepſy, hyſteria, &c. In this circumſtance, the treatment is to be entirely directed againſt the original diſeaſe. The diſorder is frequently produced by preſſure on the bladder, and therefore we ſee it brought on by polypi of the uterus, pregnancy, or a deſcent of the womb.

The third ſpecies of incontinence of urine, or that to which patients are only ſubject in the night-time, cannot always be regarded as a diſeaſe. In young ſubjects, the caſe is uſually one of the three following kinds: the boy either neglects to get up, when he feels an inclination to make water; or he ſleeps ſo ſoundly, that he is utterly inſenſible of the calls of nature; or laſtly, he dreams that he is making uſe of a chamber-pot, and empties his bladder, as it were, voluntarily. The firſt of theſe caſes requires proper advice, and, if that will not do, moderate chaſtiſement. The ſecond, it would certainly be the height of abſurdity and cruelty to endeavour to obviate by corporal puniſhment; it is a true infirmity, incidental to childhood, and commonly diſappearing as the boy grows a little older. The application of puniſhment to the third inſtance is likewiſe quite irrational and improper. Children liable to the nocturnal incontinence of urine, ought rather to be kept from drinking too late in the evening, and care ſhould always be taken to make them uſe the chamber-pot before they are put into bed. The children alſo, if poſſible, ſhould be waked in the courſe of the night, in order that they may make water.

When adults are troubled with the infirmity, or children continue afflicted, notwithſtanding the trial of ordinary plans, a quarter of a grain of the pulv. cantharid. may be adminiſtered, every evening, in ſome milk of almonds. When this plan fails, we have reaſon to ſuſpect, that the incontinence of urine is owing to the operation of a preternatural irritation on the bladder. In this circumſtance, if relief is to be derived from medicines, it muſt be from ſuch as opium and ipecacuanha.

In obſtinate caſes, it has been ſuggeſted, that benefit might be derived from adviſing the patient to retain his urine a good deal in the day-time, by which means the bladder, being accuſtomed to hold a conſiderable quantity of fluid, would not be ſo prone to contract in the night-time for the expulſion of a ſmall quantity.

Should all the above methods prove ineffectual, the only reſource left is to put on the patient, juſt before bed-time, one of the machines already deſcribed in a previous part of the preſent article.

In the particular caſe, where a fiſtulous communication exiſts between the bladder and vagina, in conſequence of ulceration, or ſloughing, if the aperture will not heal by making the patient lie a good deal on the abdomen, we may ſcarify the ſides of the opening, and endeavour to make them unite with a ſuture. Perhaps, in ſome inſtances, the opening might be healed by touching it with cauſtic, making the patient lie upon her abdomen, and keeping a catheter, as much as poſſible, in the urethra.

INCONTINENCY, in a moral ſenſe, is of divers kinds; as in caſes of bigamy, rapes, ſodomy, or buggery, getting baſtards; all which are puniſhed by ſtatute. See 25 Hen. VIII. cap. 6. 18 Eliz. cap. 7. 1 Jac. I. cap. 11. Incontinency of prieſts is puniſhable by the ordinary, by impriſonment, &c. 1 Hen. VII. cap. 4.

INCORPORATION, formed from *in*, and *corpus*, *body*, the mixing the particles of different bodies ſo together, as to make an uniform ſubſtance or compoſition of the whole, without leaving any poſſibility of diſcerning the ingredients or bodies mixed, in any of their particular qualities.

INCORPORATION, in *Law*. See CORPORATION.

INCORPOREAL, SPIRITUAL; a thing, or ſubſtance, which has no body. See SPIRIT and BODY.

Thus the ſoul of man is incorporeal, and may ſubſiſt independently of the body. See SOUL.

Thoſe ideas which are independent of bodies, can neither be corporeal themſelves, nor be received within a corporeal ſubject: they diſcover to us the nature of the ſoul, which receives within itſelf what is incorporeal, and receives it in a corporeal manner too; whence it is, that we have incorporeal ideas even of bodies themſelves. Fenelon.

INCORPOREAL *Inheritance*, in *Law*. See INHERITANCE.

INCORRUPTIBLE, that which cannot be corrupted. See Corruption.

Thus ſpiritual ſubſtances, as angels, human ſouls, &c. and thus alſo glaſs, gold, mercury, &c. may be called incorruptible.

INCORRUPTIBLES, Incorruptibiles, the name of a ſect which ſprang out of the Eutychians.

Their diſtinguiſhing tenet was that the body of Jeſus Chriſt was incorruptible; by which they meant, that after and from the time wherein he was formed in the womb of his holy mother, he was not ſuſceptible of any change or alteration; not even of any natural and innocent paſſions, as of hunger, thirſt, &c. ſo that he eat without any occaſion, before his death, as well as after his reſurrection. And hence it was that they took their name.

INCRASSANTS, or Incrassating Medicines, in the language of the old writers, and of the humoral pathology, ſuch medicines as were imagined to condenſe or thicken the blood and humours, which were of a morbidly thin or fluid conſiſtence. Both the diſeaſed condition, and the operation of medicines upon the fluids, were probably equally gratuitous. See Humoral *Pathology*.

INCREASING Fault, in *Mining*, is applied by Mr. Farey in his Report on Derbyſhire, vol. i. p. 122, to deſcribe thoſe diſlocations of the ſtrata, which are not alike in all parts of the ſame fault, but increaſe in proceeding one way along the fault, and decreaſe, or derange the meaſures, a leſs number of fathoms, yards, feet, &c. in proceeding in a contrary direction: the phenomena attending this important claſs of faults, are deſcribed in the volume above quoted, and their application to mineral ſurveying is ſhewn.

INCREMENT, Incrementum, in *Rhetoric*, a ſpecies of climax, gradually riſing from the loweſt to the higheſt. Such as that of Seneca: "Turpiſſima tamen eſt jactura, quæ per negligentiam venit: et, ſi volueris attendere, magna vitæ pars elabitur male agentibus, maxima nihil agentibus, tota aliud agentibus." See Climax.

END OF VOL. XVIII.

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